Turkey Point Units 6 & 7

Mitigation Plan
Rev. 2
(USACE Supplement)

Presented in accordance with USACE mitigation guidance

093-87652

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FPL

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EXECUTIVE SUMMARY

The Turkey Point Units 6 & 7 Project offers a portfolio of uniquely beneficial environmental opportunities that are a result of its design attributes and the overall magnitude of the Project. The benefits are provided in three key areas: inherent environmental benefits that result from Project design, mitigation offered in response to unavoidable wetland impacts, and associated regional restoration projects.

The Mitigation Plan (Rev. 0) submitted to the U.S. Army Corps of Engineers (USACE) with the Joint Application for Environmental Resource Permit/Federal Dredge and Fill Permit in June 2009 and amended (Rev. 1) in May 2010, identified several mitigation opportunities for consideration that collectively provide more functional lift than required to offset the Project's wetland impacts. The Plan was further refined (Rev. 2) in July 2011 to focus upon those mitigation options that have received a positive reception from regulatory agency staff and cumulatively provide the functional lift required to offset the Project's wetland impacts. The Plan includes a conservative assessment of functional lift required, as areas of temporary impact associated with the construction access roadway improvements are proposed to be mitigated as permanent impacts, and wetland impacts associated with transmission facilities are anticipated to be reduced following detailed engineering and facility design. Based on discussion with the USACE, the July 2011 Plan has been supplemented consistent with USACE guidelines regarding mitigation time lag factors, compliance with 33 CFR 332.4(c)(2-13), and assessment of secondary wetland impacts. **The *Turkey Point Units 6&7 Mitigation Plan – USACE Supplement* presents the same suite of mitigation activities proposed in the July 2011 Plan but addresses them from the perspective of the above noted Federal guidelines.**

By design, the Turkey Point Units 6 & 7 Project offers inherent environmental benefits while addressing two key environmental issues affecting South Florida: greenhouse gas emissions and the conservation of regional water resources. First, the application of nuclear generation technology will avoid the emission of 7 million tons of carbon dioxide (CO_2) annually, as compared to current combined cycle natural gas technology. Second, in selecting reclaimed water from Miami-Dade County as the Project's primary cooling water source, FPL will contribute to environmental protection by reusing a regional resource that is currently discarded, thereby avoiding disposal of treated wastewater via ocean outfall and reducing the volume of water currently discharged by two-thirds. This utilization of reclaimed water also assists Miami-Dade County in achieving its regulatory obligations to increase reclaimed water usage in the County in a cost-effective manner. Selection of this Project allows the County to avoid a minimum of $122 million of additional capital costs that County water and sewer customers would otherwise pay. Additionally, FPL will compensate the County for operation and maintenance costs of approximately $200 million over the first 40 years of plant operation.

The Project's Mitigation Plan was initially formulated in consultation with members of the Compatibility Working Group (CWG), which was formed by FPL in 2007 specifically to solicit input on the Project. The CWG is comprised of representatives of the South Florida Water Management District (SFWMD), Florida Department of Environmental Protection (FDEP), Miami-Dade County Department of Environmental Resources Management (DERM), now known as Miami-Dade County Regulatory and Economic Resources (RER), Miami-Dade County Planning and Zoning, Miami-Dade County Water and Sewer Department (MDWASD), USACE, U.S. Fish and Wildlife Service (USFWS), Biscayne National Park (BNP), and Everglades National Park (ENP). The Project and the associated Mitigation Plan have been refined in consultation with the regulatory agencies to avoid and minimize wetland impacts to the greatest extent practicable, and to incorporate several mitigation opportunities to replace the loss of wetland functions due to unavoidable wetland impacts. Avoidance and minimization efforts focused on minimizing impacts to high-quality wetlands in Site selection, reducing the acreage of impact with regard to the design of associated facilities, and utilization of previously impacted areas to the greatest extent practicable.

In accordance with regulatory guidelines of the FDEP and USACE, FPL proposes that the loss of wetland habitat associated with the Project be mitigated through a combination of regional wetland restoration, enhancement, and preservation initiatives furthering the regional restoration goals of the Comprehensive Everglades Restoration Plan (CERP) within the Biscayne Bay Coastal Wetlands (BBCW) study area, as well as the use of FDEP- and USACE-approved mitigation banks. FPL has collaboratively worked with local, state and federal agencies during the development of the Project to identify mitigation opportunities of regional interest. The Mitigation Plan includes over 800 acres of applicant-sponsored wetland restoration, enhancement, and preservation opportunities combined with purchase of credits from regional mitigation banks. The proposed mitigation sites are broadly focused on two geographic areas, the BBCW area adjacent to the L-31E Canal north of the Turkey Point Plant, and the Model Lands Basin west of the Turkey Point Plant. Mitigation activities proposed within the BBCW area include restoration, enhancement, and preservation of large wetland parcels adjacent to the L-31E Canal that will benefit regional ecosystem restoration plans. The conveyance of some of these FPL mitigation parcels to the public trust would connect the restored lands with state and federal environmentally protected lands to the east, completing acquisition of an important segment of the of the BBCW project. Mitigation proposed within the Model Lands Basin is designed to provide an increase in wetland/wildlife habitat through creation of a crocodile nesting sanctuary, continuing FPL's role as an environmental steward for this endangered species, as well as restoration of sawgrass marsh wetlands associated with the temporary construction access roadways.

1.0 INTRODUCTION

FPL proposes to construct and operate two new nuclear generating units (Units 6 & 7) and supporting facilities at a Site within the existing Turkey Point plant property boundaries, as well as new transmission lines and other off-site associated linear and non-linear facilities. The Project has been described in the Site Certification Application (SCA) and Federal Dredge and Fill Application submitted to FDEP and USACE, respectively, in June 2009 and amended in May 2010, as well as the SCA Completeness Responses submitted from 2009 through 2011.

The Project's Mitigation Plan was initially formulated in consultation with members of the Compatibility Working Group (CWG), which was formed by FPL in 2007 specifically to solicit input on the Project. The CWG was comprised of representatives of the SFWMD, FDEP, MDC DERM, MDC Planning and Zoning, MDWASD, USACE, USFWS, BNP, and ENP. Although meetings of the CWG were not continued past the submittal of the SCA, numerous meetings with each of the representative groups during the SCA review process have occurred to discuss the components of the Mitigation Plan.

Based on discussion with the USACE, the July 2011 Mitigation Plan (Rev. 2) has been supplemented consistent with USACE guidelines regarding mitigation time lag factors, compliance with 33 CFR 332.4(c)(2-13), and assessment of secondary wetland impacts. **The *Turkey Point Units 6&7 Mitigation Plan – USACE Supplement* presents the same suite of mitigation activities proposed in the July 2011 Plan but addresses them in accordance with the above noted USACE guidelines.**

Avoidance and minimization efforts are focused on minimizing impacts to high-quality wetlands in Site selection, reduction in the acreage of impact with regard to the design of associated facilities, and utilization of previously impacted areas to the greatest extent practicable. The proposed locations of Project features are illustrated in Figures 1 through 3. The location for the Units 6 & 7 Site lies within the existing Turkey Point permitted industrial wastewater facility. Utilization of this previously impacted area allows for avoidance of over 200 acres of impact to coastal mangrove and/or freshwater marsh wetlands. Parking and laydown areas were initially located adjacent to SW 359th Street and 117th Avenue, impacting approximately 159 acres of wetlands, including large areas of high-quality sawgrass-dominated freshwater marsh. Avoidance and minimization efforts associated with the relocation of the parking and laydown areas to locations within the existing Turkey Point Plant and industrial wastewater facility resulted in significant reduction in wetland impacts. The reconfigured and relocated parking and laydown areas, reduced in size and limited to previously-impacted, low-quality wetlands, reduced the wetland impact acreage by approximately 100 acres (66 percent) compared to the initial locations and designs.

The restoration of roadways within the construction access improvements corridor by returning existing public roads to their current lane configuration and restoring SW 359th Street to a transmission access road after construction of Units 6 & 7 provides further minimization of Project impacts.

Additional avoidance and minimization efforts focused on identification of a potential alternative location for the FPL reclaimed water treatment facility within an area of lower quality wetlands at the Turkey Point Plant. The potential alternative location is an area historically dredged for test cooling evaluations, which currently consists of upland spoil piles dominated by Australian pine, excavated open water canals, an upland access pathway, sawgrass marsh, dwarf mangroves, and exotic wetland hardwoods. Use of this significantly disturbed area could reduce impacts to mangrove and sawgrass wetlands by approximately 10 acres and the associated functional loss by approximately 5 credits as compared to the location originally proposed. Use of the potential alternative location for the FPL reclaimed water treatment facility would also allow installation of the treated reclaimed water delivery pipeline within construction access road areas, further reducing temporary wetland impacts by approximately 3.4 acres. For purposes of the mitigation plan, the impacts associated with construction of the FPL reclaimed water treatment facility are presented for both the potential alternative location as well as the originally proposed location. FPL will submit final design details on the reclaimed water treatment facility and its location as part of the revised USACE Section 404 application for the Project.

Avoidance and minimization efforts associated with the Project's linear facilities (i.e., reclaimed water pipelines, access roads, and transmission lines) include selection of corridors that maximize opportunities for co-location with disturbed linear facilities such as existing roadways, canals, and rights-of-way. Co-location with existing linear features minimizes the amount of additional clearing of rights-of-way required for construction and reduces wetland impacts. Additional avoidance and minimization efforts associated with the transmission line corridor include exchange of the existing FPL right-of-way through the ENP for a replacement right-of-way located adjacent to the existing L-31N Canal. Exchange of the existing right-of-way provides the opportunity to minimize impacts to high quality wetlands within the ENP by co-locating the new transmission facilities with existing disturbed linear features.

The Project and associated non-linear facilities (i.e., nuclear administration building, training building, parking area, FPL reclaimed water treatment facility, radial collector wells and delivery pipelines, and equipment barge unloading area) will result in up to approximately 320 acres of permanent wetland impact and 6.4 acres of temporary wetland impact. The majority of this impact (approximately 250 acres) is associated with the Units 6 & 7 Site, which is wholly contained within the existing industrial wastewater treatment facility.

As discussed in Chapter 9.0 of the SCA, the Project's associated linear facilities (transmission lines, FPL reclaimed water pipelines, access road improvements, and potable water pipelines) have generally been located within corridors proposed for certification rather than within specific rights-of-way. Locating linear facilities within corridors allows flexibility in routing to address site-specific constraints and incorporation of additional wetland avoidance/minimization opportunities during the final design of the transmission lines, pipelines, and access road improvements. For purposes of wetland impact assessment, a conservative "enveloping" scenario was utilized for linear facilities in order to ensure that the mitigation plan would provide more than sufficient mitigation to offset all impacts following final route selection and refinement of linear facility engineering design. In the case of the transmission corridors, this enveloping approach results in a worst-case scenario of wetland impacts that will be reduced during final engineering design. Using the conservative assumptions, the total estimated wetland impacts resulting from construction of the associated linear facilities include up to 308 acres of permanent wetland impact for the transmission line structure pads and associated access roads, approximately 82 acres of permanent wetland impact associated with the Units 6 & 7 temporary access road improvements, and approximately 44 acres of temporary wetland impact associated with installation of the underground reclaimed water and potable water pipelines. A summary of the Project's wetland impacts is provided in Table 1-1.

TABLE 1-1

UNITS 6 & 7 PROJECT WETLAND IMPACT SUMMARY

Area	Wetland Impacts (acres)		Functional Loss (UMAM Credits)
	Direct	Temporary	
Units 6 & 7 Site	250.2		128.3[a]
Associated Non-Linear Facilities	69.8[b]	6.4[c]	53.2[a]
Access Roads	81.6		80.6
Reclaimed Water Pipelines		43.6[c]	3.4[d]
Transmission Line Corridors	308.2[e]		241[e]
TOTAL	**710[b]**	**50[c]**	**507[b]**

[a] Functional loss calculated via W.A.T.E.R. functional assessment methodology for the Units 6 & 7 Site = 148.4 W.A.T.E.R. credits; nuclear administration/training building and parking area = 19.9 W.A.T.E.R. credits; FPL reclaimed water treatment facility original location = 39 W.A.T.E.R. credits; FPL reclaimed water treatment facility alternative location = 33 W.A.T.E.R. credits

[b] Summary includes impacts resulting from construction of FPL reclaimed water treatment facility at the originally proposed location. Utilization of the potential alternative location reduces direct wetland impacts by approximately 4.1 acres, reduces temporary pipeline wetland impacts by approximately 3.4 acres, and reduces total functional loss by approximately 5.4 UMAM credits

[c] Loss of functional value for temporary impacts associated with pipeline installation will be replaced through in-situ restoration. Additional mitigation credits to offset functional loss associated with time lag of in-situ restoration are provided.

[d] Summary includes temporary impacts resulting from installation of reclaimed water pipeline to FPL reclaimed water treatment facility potential alternative location. Installation of reclaimed water pipeline to the originally proposed location for the FPL reclaimed water treatment facility reduces temporary wetland impacts by approximately 5.3 acres and reduces functional loss by approximately 0.4 UMAM credits.

[e] Transmission line impacts were approximated utilizing conservative estimates regarding road and pad design layout within corridor and average functional assessment scores within the corridor segments; actual wetland impacts will be reduced upon completion of detailed engineering design. Acreage of clearing and conversion of forested to herbaceous wetlands will be calculated upon completion of detailed engineering design.

In accordance with regulatory guidelines of the FDEP and USACE, as well as the Miami-Dade County Unusual Use Approval Conditions, FPL proposes that the loss of wetland habitat associated with the Project be mitigated for through a combination of wetland restoration, enhancement, and preservation consistent with the regional restoration goals of the CERP within the BBCW study area and Model Lands Basin, as well as use of the Everglades Mitigation Bank (EMB) and the Hole in the Donut Mitigation Bank (HID).

In consultation with the CWG, the Mitigation Plan submitted with the SCA was developed to identify several mitigation options for consideration that collectively provide more functional lift than required to offset the Project's wetland impacts. Based upon feedback from regulatory agencies, the refined Plan incorporates those mitigation options that cumulatively provide the necessary functional lift to offset the

Project's wetland impacts. A summary of the various mitigation options included in the refined Plan is presented in Table 1-2 and illustrated in Figure 4.

TABLE 1-2

MITIGATION SUMMARY

Mitigation Option	Activity	Acreage	Functional Lift (UMAM)
Northwest Restoration Site	Vegetative enhancement, hydrologic restoration, preservation, recreational facilities	238	37.6
SW 320th St. Restoration Site	Vegetative enhancement, preservation	574	60.4
Everglades Mitigation Bank	Mitigation Credits	1,409	175.8 (UMAM)/ 201.3 (W.A.T.E.R.)
Hole in the Donut Mitigation Bank	Mitigation Credits	308	241 (UMAM)/ 308 (Ratio)
Pipeline Restoration	Vegetative restoration	46.6	N/A[a]
Sea Dade Canal Crocodile Sanctuary	Creation of saline lagoon and crocodile nesting habitat	6.4	N/A[b]
Temporary Construction Access Roadway Restoration	Removal of temporary roadways, vegetative restoration	TBD[c]	N/A[b]
TOTAL		**2,582**	**515 (UMAM)**

[a]Temporary impacts associated with pipeline installation to be restored in-situ; additional mitigation to be provided to offset time lag factors. See Section 3.4.

[b]Additional mitigation activity conducted without credit for the generation of functional lift. Sea Dade Canal Crocodile Sanctuary and restoration of temporary construction access roads considered "additional mitigation activities".

[c]Acreage of temporary construction access roadway restoration will be determined post-certification upon final engineering designs for construction and post-construction roadways.

2.0 WETLAND IMPACT FUNCTIONAL ASSESSMENT

2.1 Methods

Rather than an acre-for-acre mitigation or the use of mitigation ratios, the calculation of wetland mitigation requirements typically involves use of a wetland functional assessment value multiplied by the acreage of impact to determine the required number of mitigation credits to offset the loss of wetland functions. Wetland functional assessments involve ranking the subject wetland relative to several variables, such as vegetation, wildlife utilization, hydrology, and surrounding landscape conditions. The goal of the functional assessment is to determine the ecological value of the wetland prior to disturbance to ensure that mitigation will replace the wetland's ecological functions rather than merely replacing the acreage of fill. Using this rationale, a 2-acre wetland dominated by exotic vegetation with altered hydrology and little wildlife utilization would have a lower functional value and thus require fewer mitigation credits to offset unavoidable impacts as compared to a 2-acre wetland supporting a diverse assemblage of native flora and fauna and an unaltered hydrologic regime.

Wetland functional assessment protocols used for the Units 6 & 7 Project include the FDEP UMAM and the EMB W.A.T.E.R., as described in Subsections 2.1.1 and 2.1.2, respectively. In the case of the HID mitigation bank, credits are calculated utilizing an in-lieu fee in accordance with the bank's FDEP permit, as described in Subsection 2.1.3.

2.1.1 Uniform Mitigation Assessment Method (UMAM)

The UMAM functional assessment protocol was utilized to evaluate the ecological condition of all wetlands associated with the Units 6 & 7 Project, as well as to evaluate the amount of functional lift generated through the Project's various mitigation alternatives.

The FDEP UMAM is designed to be used for wetland systems occurring throughout the state, to provide a standard functional assessment methodology applicable to a variety of wetland habitats. The UMAM quantifies wetland quality or health through evaluation of several variables, including location and landscape support, water environment, and community structure. The variables are defined in Chapter 62-345, Florida Administrative Code (F.A.C.), and are summarized in the following sections.

Location and Landscape Support – The value of functions provided by an assessment area to fish and wildlife are influenced by the landscape position of the assessment area and its relationship with surrounding areas. Many species that nest, feed, or find cover in a specific habitat or habitat type are also dependent in varying degrees upon other habitats that are present in the regional landscape, including upland, wetland, and other surface waters. The location of the assessment area is considered to the extent that fish and wildlife utilizing the area have the opportunity to access other habitats necessary to fulfill

their life history requirements. The availability, connectivity, and quality of offsite habitats and offsite land uses that might adversely impact fish and wildlife utilizing these habitats are factors considered in assessing the location of the assessment area. The location of the assessment area is considered relative to offsite and upstream hydrologic contributing areas and to downstream and other connected waters to the extent that the diversity and abundance of fish and wildlife and their habitats are affected in these areas. The opportunity for the assessment area to provide offsite water quantity and quality benefits to fish and wildlife and their habitats downstream and in connected waters is assessed based on the degree of hydrologic connectivity between these habitats and the extent to which offsite habitats are affected by discharges from the assessment area.

Water Environment – The quantity of water in an assessment area, including the timing, frequency, depth, and duration of inundation or saturation, flow characteristics, and the quality of that water, may facilitate or preclude its ability to perform certain functions and may benefit or adversely impact its capacity to support certain wildlife. Hydrologic requirements and tolerance to hydrologic alterations and water quality variations vary by ecosystem type and the wildlife utilizing the ecosystem. Hydrologic conditions within an assessment area, including water quantity and quality, are evaluated to determine the effect of these conditions on the functions performed by area and the extent to which these conditions benefit or adversely affect wildlife. Water quality within wetlands and other surface waters is affected by inputs from surrounding and upstream areas and the ability of the wetland or surface water system to assimilate those inputs.

Community Structure (Vegetation and Structural Habitat) – The presence, abundance, health, condition, appropriateness, and distribution of plant communities in surface waters, wetlands, and uplands can be used as indicators to determine the degree to which the functions of the community type identified are provided. Vegetation is the base of the food web in any community and provides many additional structural habitat benefits to fish and wildlife. Overall condition of a plant community can often be evaluated by observing indicators such as dead or dying vegetation, regeneration and recruitment, size and age distribution of trees and shrubs, fruit production, chlorotic or spindly plant growth, structure of the vegetation strata, and the presence, coverage, and distribution of inappropriate plant species. Human activities such as mowing, grazing, off-road vehicle activity, boat traffic, and fire suppression constitute more direct and easily observable impacts affecting the condition of plant communities. Although short-term environmental factors such as excessive rainfall, drought, and fire can have temporary impacts, human activities such as flooding, drainage via groundwater withdrawal and conveyance canals, or construction of permanent structures such as seawalls in an aquatic system, can permanently damage these systems. The plant community is evaluated to consider whether natural successional patterns for the

community type are permanently altered. Inappropriate plants, including invasive exotic species, other invasive species, or other species atypical of the community type being evaluated, do not support the functions attributable to that community type and can out-compete and replace native species. Native upland and wetland vegetation, such as wax myrtle, pines, and willow, which are not typically considered as invasive, can occur in numbers and coverage not appropriate for the community type and can serve as indicators of disturbance. The relative degree of coverage by inappropriate species, inappropriate vegetation strata, condition of vegetation, and both biotic and abiotic structure all provide an indication of the degree to which the functions anticipated for the community type identified are being provided.

Time Lag and Risk – Additional mitigation credits have been calculated to address time lag and risk associated with the proposed enhancement and restoration activities. The time lag associated with mitigation activities addresses the period of time between when the functions are lost at an impact site and when those functions are replaced through mitigation. Wetland creation generally has a greater time lag to establish certain wetland functions than most enhancement activities. The time lag, in years, is used to determine the USACE federal time lag factor (T-factor) to reflect the additional mitigation needed to account for the delay in replacement of wetland functions. The USACE utilizes a 3% discount rate for the federal time lag adjustment, in contrast to the FDEP's use of a 7% discount rate. Mitigation risk accounts for the degree of uncertainty that the proposed mitigation activity will achieve the proposed conditions. Typically, mitigation projects that require longer periods of time to replace lost functions are considered to have a higher risk. Risk is scored on a scale from 1 (*de minimus* risk) to 3 (high risk). Time lag and risk factors for the proposed mitigation alternatives are discussed in Section 3. Offsite mitigation through the purchase of credits from the EMB or HID already incorporates time lag and risk in the calculation of credits available for purchase. Alternatively, the preservation of wetland acreage adjacent to the Biscayne National Park (BNP) does not include significant risk or lag time.

2.1.2 Wetland Assessment Technique for Environmental Review (W.A.T.E.R.)

When utilizing a mitigation bank, the applicant must use the functional assessment methodology approved for the specific mitigation bank to assess impact sites for the purpose of determining mitigation credits, as described in Rule 62-345.100(6), F.A.C. The EMB functional assessment protocol, W.A.T.E.R., is similar to the UMAM protocol. W.A.T.E.R. must be used to establish credits obtained from the EMB and is directly applicable to the conditions present in southeast Florida.

The W.A.T.E.R. functional evaluation matrix includes four main categories: fish and wildlife, vegetation, landscape/hydrology, and salinity. These main categories are further subdivided to represent most of the important ecological components and factors of the Everglades and coastal ecosystems of southeast Florida. Variables within the four main categories are scored from 0 to 3, with half-point increments

allowable. For each wetland assessment area, the sum of all variable scores is then divided by the total possible score to derive an overall W.A.T.E.R. functional assessment score ranging between 0 and 1. Parameters that cannot be attributed to direct wetland function are termed site suitability parameters, which are used to calculate a site suitability multiplier. The site suitability multiplier assesses a wetland based upon how it contributes to the functional attributes of other wetlands, addressing the anthropogenic importance and/or socioeconomic value of the wetland. The site suitability multiplier is multiplied by the acreage of impact and functional assessment score to determine the total number of EMB mitigation credits required to offset wetland impacts.

The W.A.T.E.R. protocol was used to assess the functional value of hypersaline wetlands within the industrial wastewater facility (Units 6 & 7 Site), as well as mangrove and sawgrass wetlands associated with the FPL reclaimed water treatment facility and the nuclear administration building, training building, and parking area. Wetland mitigation credits from the EMB will be purchased to offset impacts to wetlands within the Units 6 & 7 Site, as well as the FPL reclaimed water treatment facility and nuclear administration building, training building, and parking area.

2.2 HID In-lieu Fee

An in-lieu fee program involves the restoration, establishment, enhancement, and/or preservation of aquatic resources through funds paid to a governmental or non-profit natural resources management entity to satisfy compensatory mitigation requirements. Similar to a mitigation bank, an in-lieu fee program sells compensatory mitigation credits to permittees whose obligation to provide compensatory mitigation is then transferred to the in-lieu program sponsor.

The HID was permitted as an in-lieu fee mitigation bank prior to adoption of 62-345.100(6), F.A.C., therefore the quantification of required mitigation credits is calculated using the methodology in place when the bank was permitted. As stated in 62-345.100(6), F.A.C.:

> *Pursuant to paragraph 373.414(18)(b), F.S., an entity that has received a mitigation bank permit issued by the Department of Environmental Protection or a water management district under Sections 373.4135 and 373.4136, F.S., prior to the adoption of this rule (UMAM) must have impact sites assessed for the purpose of deducting bank credits using the credit assessment method, including any functional assessment methodology, that was in place when the bank was permitted.*

According to the HID permit (FDEP permit # 132416479, issued 2/15/1995), "mitigation for wetland impacts within the Mitigation Service Area will consist of a set dollar amount per acre of impact."

Although the HID was permitted prior to the ERP Basis of Review (BOR) and Uniform Mitigation Assessment Method (UMAM), the BOR ratios for restoration range from 1.5:1 to 4:1. Based on June 2011 consultation with HID managers, the assessment methodology of the bank may be revised in the future to comply with the UMAM. Following completion of detailed transmission line design and prior to construction, FPL will comply with the assessment methodology of the HID, as approved by the FDEP and USACE, to determine the appropriate number of credits required to compensate for the impacts associated with construction of the proposed transmission facilities.

2.3 Results

The following summarizes the existing, pre-development functional assessment scores, acreage of impact, and mitigation credits required to offset the loss of wetland functions associated with construction of the Project within the Units 6 & 7 Site, associated non-linear facilities, and associated linear facilities. UMAM functional assessment forms are provided in Appendix A; W.A.T.E.R. functional assessment forms are included in Appendix B.

2.3.1 Units 6 & 7 Site

Wetlands within the Site have low functional value[1]. The area is wholly isolated within the boundaries of the industrial wastewater treatment facility, with no connection to Biscayne Bay for over 35 years. The Site is periodically inundated by hypersaline water used for cooling purposes and provides limited habitat for aquatic biota, evidenced by the limited number of aquatic taxa that can tolerate hypersaline waters, elevated temperatures, and low dissolved oxygen. The area is part of the permitted existing Turkey Point industrial wastewater treatment facility. The altered hydrology, soils, salinity, and temperature reduce the functional value of mangrove systems compared to undisturbed tidal mangroves of Biscayne Bay. Wetland functional value is influenced by the surrounding landscape characteristics, specifically the existing power generation facility, the extensive industrial wastewater facility/cooling canal system, and lack of natural tidal inundation. The industrial wastewater facility alters the timing, frequency, and duration of inundation of wetlands within the Site when compared to the historical tidal hydroperiod. Although nuisance and/or exotic species such as Australian pine (*Casuarina equisetifolia*), Brazilian pepper (*Schinus terebinthifolius*), and half-flower (*Scaevola sericea*) occur within the Site, these species are not widespread and are primarily restricted to upland areas or along the transitional upland-wetland ecotone. However, hydrologic alteration is prevalent throughout the Site. Vegetative communities are stressed, evidenced through decreased growth rates and high mortality. The hypersaline conditions and

[1] The use of the term "wetlands" with reference to the Site is used solely as a descriptive term and is not used as a regulatory or jurisdictional term.

altered hydrology have resulted in vegetative communities with reduced value as wildlife habitat, and reduced capability to recover from natural environmental impacts such as storm events or freezing temperatures.

Table 2-1 summarizes the W.A.T.E.R. assessment results for the Units 6 & 7 Site. Scoring for the suite of variables contained within each assessment category and the site suitability evaluation is detailed in Appendix B. The UMAM assessment was also conducted at the Units 6 & 7 Site; results are provided in Appendix A.

TABLE 2-1

UNITS 6 & 7 SITE WETLAND FUNCTIONAL ASSESSMENT SUMMARY

FLUCFCS Code	Wetland Type	W.A.T.E.R. Score	Impact Acreage	Site Suitability Multiplier	Functional Loss (W.A.T.E.R. Credits)
510	Active Canals	0.54	4.1	1.05	2.32
511	Remnant Canals	0.59	8.4	1.05	5.20
531	Open Water/ Discharge Canal 1	0.54	12	1.05	6.80
612-A	Mangrove Heads	0.70	12.2	1.05	8.97
612-B	Dwarf Mangroves	0.65	16.9	1.05	11.53
650	Mud Flats	0.55	187.5	1.05	108.28
743-Wet	Wetland Spoil Areas	0.55	9.1	1.05	5.26
			250.2		**148.4**

2.3.2 Associated Non-Linear Facilities

Wetlands associated with the nuclear administration building, training building, and parking areas are reduced in functional value due to their isolated location within the Turkey Point facility, surrounding paved parking lots, encroachment of exotic/nuisance species of vegetation, lack of upland vegetative buffers, and hydrologic alteration.

Mangrove wetlands associated with the radial collector well delivery pipelines are higher quality systems connected to Biscayne Bay. These wetlands are slightly reduced in functional value due to the existing fill and roadways associated with the existing Turkey Point Plant, but exhibit minimal amounts of nuisance/exotic species, experience a relatively unaltered hydrologic regime, and provide significant wildlife habitat.

Freshwater sawgrass marsh and dwarf mangrove wetlands associated with the FPL reclaimed water treatment facility potential alternative location are reduced in functional value due to historic dredging for

test cooling canal evaluations, resulting in upland spoil piles, excavated open water canals, and an upland access pathway. These areas are isolated from Biscayne Bay due to the historical construction of the primary Turkey Point Plant access road and contain upland and wetland areas dominated by the exotic species Australian pine. The treated reclaimed water pipeline between the FPL reclaimed water treatment facility potential alternative location and the Site would be installed within construction access roadways, avoiding additional wetland impact.

Dwarf mangrove, sawgrass marsh, and mixed wetland hardwoods associated with the FPL reclaimed water treatment facility originally proposed location and treated water pipeline are slightly reduced in functional value due to hydrologic alteration and presence of exotic species of vegetation, although they are considered high-quality wildlife habitat. These areas are isolated from Biscayne Bay due to the historical construction of the primary Turkey Point Plant access road.

Expansion of the equipment barge unloading area will require excavation of upland fill material and approximately 0.1 acre of dredging adjacent to the existing man-made turning basin. The expansion is not expected to result in any impacts to adjacent surface waters through utilization of best management practices (BMPs) to isolate the construction area with turbidity curtains, silt screens, or other erosion and turbidity control measures.

A summary of the UMAM and W.A.T.E.R. functional assessment results for the associated non-linear facilities are provided below (Table 2-2); UMAM and W.A.T.E.R. wetland assessment forms are provided in Appendices A and B, respectively.

TABLE 2-2

ASSOCIATED NON-LINEAR FACILITIES
UMAM WETLAND FUNCTIONAL ASSESSMENT SUMMARY

FLUCFCS Code	Wetland Type	UMAM Score	Impact Acreage	Functional Loss (UMAM Credits)
Nuclear Administration Building, Training Building, and Parking Area				
612	Mangrove Swamps	0.67	18.5	12.4
612/618	Mangrove/Willow	0.63	7.6	4.8
		SUBTOTAL	**26.1**	**17.2**
Radial Collector Well Pipelines				
612	Mangrove Swamps	0.87	**3**	**0.4[a]**
Treated Reclaimed Water Pipeline (Originally Proposed Location)				
6411/612-B	Sawgrass Marsh/Dwarf Mangroves	0.77	3.1	0.34
617	Mixed Wetland Hardwoods	0.70	0.3	0.03
		SUBTOTAL	**3.4**	**0.4[a]**
FPL Reclaimed Water Treatment Facility (Potential Alternative Location)				
510/511	Canals/Ditches	0.50	3.2	1.6
619	Exotic Wetland Hardwoods	0.47	3.7	1.7
6411/612-B	Sawgrass Marsh/Dwarf Mangroves	0.77	32.6	25.1
		SUBTOTAL	**39.5**	**28.4**
FPL Reclaimed Water Treatment Facility (Originally Proposed Location)				
6411/612-B	Sawgrass Marsh/Dwarf Mangroves	0.77	42.8	33.0
617	Mixed Wetland Hardwoods	0.80	0.8	0.6
		SUBTOTAL	**43.6**	**33.6**
Equipment Barge Unloading Area				
510	Barge Basin	0.50	0.1	N/A
TOTAL			**76.2[b]**	**51.6[b]**

[a] Loss of functional value for temporary impacts associated with pipeline installation will be replaced through in-situ restoration. Mitigation credits to offset time lag associated with in-situ restoration are provided (see Section 3.4.2).

[b] Total calculated utilizing FPL Reclaimed Water Treatment Facility originally proposed location and treated reclaimed water pipeline. Total utilizing potential alternative location = 68.7 acres, 46 UMAM credits

Mitigation for unavoidable wetland impacts associated with the FPL reclaimed water treatment facility, nuclear administration building, training building, and parking area is proposed through purchase of mitigation credits from the EMB. Wetland functional assessment for these non-linear associated facilities utilizing the EMB W.A.T.E.R. is summarized below (Table 2-3).

TABLE 2-3

ASSOCIATED NON-LINEAR FACILITIES
W.A.T.E.R. WETLAND FUNCTIONAL ASSESSMENT SUMMARY

FLUCFCS Code	Wetland Type	W.A.T.E.R. Score	Site Suitability Multiplier	Impact Acreage	Functional Loss (W.A.T.E.R. Credits)
Nuclear Administration Building, Training Building, and Parking Area					
612	Mangrove Swamps	0.74	1.05	18.5	14.4
612/618	Mangrove/Willow	0.69	1.05	7.6	5.5
			TOTAL	**26.1**	**19.9**
FPL Reclaimed Water Treatment Facility (Potential Alternative Location)					
510/511	Canal/Ditches	0.59	1.05	3.2	2.0
6411/612-B	Sawgrass Marsh/ Dwarf Mangroves	0.81	1.05	32.6	27.7
619	Exotic Wetland Hardwoods	0.48	1.05	3.7	1.9
			TOTAL	**39.5**	**31.6**
FPL Reclaimed Water Treatment Facility (Originally Proposed Location)					
6411/612-B	Sawgrass Marsh/ Dwarf Mangroves	0.81	1.05	42.8	36.4
617	Mixed Wetland Hardwoods	0.83	1.05	0.8	0.7
			TOTAL	**43.6**	**37.1**

2.3.3 Associated Linear Facilities

Associated linear facilities include the reclaimed water pipelines, temporary construction access road improvements, potable water pipeline, and transmission line corridors. Wetlands associated with the associated linear facility corridors vary in functional value, primarily based upon prevalence of nuisance/exotic species of vegetation and degree of hydrologic alteration.

A portion of the temporary construction access road improvements, transmission facilities, and potable water pipeline corridors are co-located along SW 359th Street extending west across the L-31E Canal from the northwestern edge of the industrial cooling canals. Freshwater marsh wetlands associated with this portion of the linear facilities corridor located adjacent to SW 359th Street are of relatively high quality, dominated by sawgrass and other desirable native wetlands species; and, with the exception of occasional ditches and the existing transmission line access road, these areas are mostly undisturbed. Areas of relatively high-quality mangrove wetlands occur within the reclaimed water pipeline corridor and portion of the access road corridor adjacent to the L-31E Canal. In other areas of the temporary construction access road improvements and reclaimed water pipeline corridors, mixed wetland hardwood communities demonstrate a reduced functional value due to the prevalence of several exotic species, primarily Brazilian pepper and Australian pine. These species are moderately widespread throughout the mixed wetland hardwood communities within the associated linear facility corridors. Areas dominated by

exotic wetland hardwoods that provide limited wildlife habitat, reduced vegetative species diversity, and low functional value are prevalent within the linear facility corridors.

Temporary impacts associated with the reclaimed water pipeline will be restored in-situ, as described in Section 3.5. Following construction, the temporary construction access roads will be restored, with exception of a permanent transmission line access road on SW 359th Street, as described in Section 3.6. Although the majority of wetland impact associated with the temporary construction access roads will be restored, these areas will be mitigated as permanent impacts. The functional lift generated through post-construction restoration is considered "additional mitigation" and not included as part of the Project's overall credit ledger.

A summary of wetland type, functional assessment score, impact acreage, and amount of mitigation required to offset the loss of wetland functions for the reclaimed water pipelines and temporary construction access road improvement corridors is provided in Table 2-4.

TABLE 2-4

ASSOCIATED NON-TRANSMISSION LINEAR FACILITIES WETLAND FUNCTIONAL ASSESSMENT SUMMARY

FLUCFCS Code	Wetland Type	UMAM Score	Impact Acreage		Functional Loss (Credits)
			Direct	Temporary	
Reclaimed Water Pipelines[a] Corridor (Potential Alternative Location)					
241-W	Wet Palm Tree Nursery	0.27	-	0.16	N/A[a]
510/ 511	Canals/ Ditches	0.50	-	1.7	0.02[a]
612/612-B	Mangroves /Dwarf Mangroves	0.77	-	19.51	2.14[a]
612/619	Mangrove/Exotic Wetland Hardwoods	0.60	-	4.47	0.36[a]
617	Mixed Wetland Hardwoods	0.70	-	8.34	0.84[a]
619	Exotic Wetland Hardwoods	0.50	-	2.31	N/A[a]
641	Freshwater Marshes	0.70	-	7.09	0.07[a]
SUBTOTAL				**43.6**	**3.4[a]**
Reclaimed Water Pipelines[a] Corridor (Originally Proposed Location)					
241-W	Wet Palm Tree Nursery	0.27	-	0.16	N/A[a]
510/ 511	Canals/ Ditches	0.50	-	1.7	0.02[a]
612/612-B	Mangroves /Dwarf Mangroves	0.77	-	17.17	1.89[a]
612/619	Mangrove/Exotic Wetland Hardwoods	0.60	-	4.47	0.36[a]
617	Mixed Wetland Hardwoods	0.70	-	8.46	0.84[a]
619	Exotic Wetland Hardwoods	0.50	-	2.31	N/A[a]
641	Freshwater Marshes	0.70	-	4.07	0.04[a]
SUBTOTAL				**38.3**	**3.2[a]**
Temporary Construction Access Road Improvement Corridor					
510/ 511/ 534	Canals/ Ditches/ Reservoirs	0.50	7.3		3.7
612-B	Dwarf Mangroves	0.77	7.5		5.8
617	Mixed Wetland Hardwoods	0.70	9.1		6.4
617/641	Mixed Wetland Hardwoods/Freshwater Marshes	0.77	5.6		4.3
619	Exotic Wetland Hardwoods	0.60	4.2		2.5
641	Freshwater Marshes	0.80	47.9		38.3
SUBTOTAL			**81.6**		**61**
TOTAL			**125.2[b]**	**43.6**	**64.4[b]**

[a] Loss of functional value for temporary impacts associated with reclaimed water pipeline installation will be replaced through in-situ restoration. Mitigation credits to offset time lag associated with in-situ restoration are provided (see Section 3.4.2).

[b] Total calculated utilizing reclaimed water pipeline corridor to FPL Reclaimed Water Treatment Facility potential alternative location. Total utilizing originally proposed location = 119.9 acres, 64.2 UMAM credits

For purposes of impact assessment within the transmission line corridors, an enveloping approach was utilized to calculate a conservative maximum acreage of wetland impacts that could be associated with transmission structure pads, transmission access roads, and expansion of the existing Levee Substation.

Conservative assumptions regarding transmission access road length, height and width, as well as placement of structure pads, were incorporated into the assessment to derive a "not to exceed" maximum scenario of wetland impact acreage. Upon detailed transmission line design, road engineering, culvert placement, and incorporation of avoidance and minimization efforts in the specific locations of structures and transmission access roads, the total acreage of wetland impacts are expected to be reduced. The current impact estimates, reflected in Table 2-5, are considered conservative to ensure that the amount of mitigation credits proposed will be more than sufficient to offset the final wetland impacts.

For each segment of the transmission line corridors, as illustrated in Figure 5, a summary of the conservative estimated acreage of wetland impact, average UMAM functional assessment scores for wetlands within each corridor segment, and resulting credits of functional loss is presented in Table 2-5.

TABLE 2-5
CONCEPTUAL TRANSMISSION LINE CORRIDOR RIGHTS-OF-WAY
WETLAND FUNCTIONAL ASSESSMENT SUMMARY

Corridor	Segment	Wetland Types (FLUCFCS Codes)	Estimated Maximum Wetland Impact (Acres)	Average UMAM Score	Estimated Functional Loss (Credits)
West	1A	612-B	4.91	0.80	3.93
West	1B	617, 641	23.65	0.83	19.63
West	1C	617, 641	19.89	0.83	16.51
West	1D	617, 619, 641, 643	44.76	0.70	31.33
West	2	641	2.70	0.60	1.62
West	3A	617, 619, 641	15.33	0.80	12.26
West	3B	617, 619, 641, 643	102.63	0.80	82.10
West	3C	617, 618, 619, 641	55.95	0.83	46.44
West	4	617, 619, 641, 643	27.69	0.70	19.38
West	5A	619, 631, 641, 643	1.06	0.70	0.74
West	5B	619, 641, 643	0.28	0.70	0.20
West	Levee Substation Expansion	619, 641	7.50	0.70	5.25
West	Tamiami Trail Access Corridor	641	1.63	0.80	1.30
West	Krome Avenue Access Corridor	619, 641	0.20	0.70	0.14
East	6	612	0.06	0.83	0.05
	TOTAL		**308**		**241**

2.3.4 Secondary Impacts

Secondary effects on the aquatic ecosystem are defined in 40 CFR Section 230.11(h) as effects that are associated with a discharge of dredged or fill materials, but do not result from the actual placement of the dredged or fill material. Examples include surface runoff from residential or commercial developments

on fill located in waters of the U.S., or fluctuating water levels in an impoundment and downstream associated with the operation of a dam. In the case of the Turkey Point Units 6 & 7 Project, all areas of fill within waters of the U.S. will be separated from adjacent areas through installation of silt fencing and other erosion control methods. These best management practices will be used to minimize the potential for discharge of surface runoff from areas of fill. Therefore, it is unlikely that adjacent undisturbed wetlands will experience a measurable loss in functional value.

3.0 PROPOSED MITIGATION PLAN

Wetland impacts will be mitigated through a combination of wetland restoration, enhancement, and preservation consistent with the regional restoration goals of the CERP within the BBCW study area and Model Lands Basin, as well as purchase of mitigation credits from the EMB and HID. Due to FPL's large land holdings in the area, there is an opportunity to offer a variety of mitigation activities that would not only offset the Project's wetland impacts, but support regional restoration goals benefitting BNP and CERP projects. FPL has proposed a suite of mitigation opportunities in compensation for wetland impacts, including wetland restoration through removal of exotic vegetation, topographic grading and installation of native wetland vegetation, wetland enhancement through hydrological improvements designed to restore historical fresh water flows, preservation of large areas of wetlands contiguous to SFWMD-owned parcels and Biscayne Bay, in-situ restoration of temporarily impacted wetlands associated with pipeline installation, wildlife habitat creation and preservation, and purchase of mitigation credits from the EMB and HID.

The current wetland mitigation proposal identifies several mitigation options that collectively provide the functional lift necessary to offset the Project's wetland impacts. Six mitigation options are discussed below as components of the final mitigation proposal: Northwest Restoration Site, SW 320th Street Restoration Site, EMB and HID Mitigation Banks, Pipeline Restoration, Sea Dade Canal Crocodile Sanctuary, and Temporary Construction Access Road Restoration (Figure 4).

3.1 Northwest Restoration Site

The Northwest Restoration Site consists of several FPL-owned parcels totaling 238 acres located adjacent to the L-31E Canal between SW 328th Street and SW 344th Street/Palm Drive, approximately 2 miles northwest of the Units 6 & 7 Site and directly west of the BNP (Figure 6). Restoration and enhancement of these parcels will be achieved through the removal of exotic species of vegetation, removal of ditches and grading to restore natural topography and enhance hydrology, and preservation through a conservation easement. The area is uniquely positioned adjacent to the SW 328th Street entrance to the BNP, which provides the opportunity for the incorporation of passive public recreation opportunities

within the area such as boardwalks, bird observation areas, and environmental education. The area is located within the proposed Biscayne - Everglades Greenway at the entrance to BNP and could be incorporated into the Greenway's overall plan to provide a network of bicycle trails and walkways between the two parks.

3.1.1 Existing Condition

The area is impacted due to historic hydrologic alteration through a network of mosquito ditches and prevalence of exotic species, resulting in reduced quality of wildlife habitat and vegetative species diversity (Appendix C, Photographs 1 and 2). A network of mosquito control ditches (FLUCFCS 511) crosses the parcel, with adjacent spoil materials supporting the exotic species Australian pine and Brazilian pepper. The east-west mosquito control ditches are typically approximately 4 feet wide by 4 feet deep, while north-south ditches are approximately 3 feet wide by 2 feet deep. Construction of the L-31E, Florida City, and North Canals has isolated the area from tidal influence, altering the salinity to that more characteristic of an oligohaline marsh community. Habitats within the Northwest Restoration Site (Appendix C, Photographs 3 and 4) are dominated by sawgrass marsh (FLUCFCS 6411), mangroves (FLUCFCS 612), exotic wetland hardwoods dominated by Australian pine (FLUCFCS 619-AP), and mixed wetland hardwoods (FLUCFCS 617), as illustrated in Figure 7 and described below.

Sawgrass Marsh (FLUCFCS 6411)

The majority of the site is comprised of low salinity marsh dominated by sawgrass (*Cladium jamaicense*) (FLUCFCS 6411), with a variety of native and exotic subdominant species occurring within the marsh such as knotted spikerush (*Eleocharis interstincta*), Australian pine, buttonwood (*Conocarpus erectus*), white mangrove (*Laguncularia racemosa*), camphorweed (*Pluchea* sp.), red mangrove (*Rhizophora mangle*), mangrove vine (*Rhabdadenia biflora*), rosegentian (*Sabatia* sp.), arrowhead (*Sagittaria lancifolia*), creeping hempvine (*Mikania scandens*), beggarticks (*Bidens laevis*), and cattail (*Typha* spp.). Areas of marsh have been colonized by nuisance/exotic species, including Australian pine, melaleuca (*Melaleuca quinquenervia*), Brazilian pepper, shoebutton ardisia (*Ardisia elliptica*), and small-leaf climbing fern (*Lygodium microphyllum*).

Mangroves (FLUCFCS 612)

The eastern portion of the parcel is hydrologically connected to the L-31E Canal through culverts and supports areas of high-quality red mangrove, black mangrove (*Avicennia germans*), and buttonwood communities with relatively minimal colonization by exotic species. Additional areas classified as mangrove swamp occur within the north-central portion of the Site, supporting a mixture of red mangrove, white mangrove, buttonwood, wax myrtle (*Myrica cerifera*), and approximately 10 percent coverage of Australian pine.

Mixed Wetland Hardwoods (FLUCFCS 617)

The central portion of the site contains areas of tree islands vegetated with a mixture of native hardwoods, including red mangrove, black mangrove, white mangrove, buttonwood, pond apple (*Annona glabra*), cocoplum (*Chrysobalanus icaco*), and coastal plain willow (*Salix caroliniana*).

Exotic Wetland Hardwoods – Australian Pine (FLUCFCS 619-AP)

Areas dominated by the nuisance exotic species Australian pine occur primarily along the northern and southern boundaries of the site, adjacent to the Florida City Canal and SW 328th Street. In addition to Australian pine, these areas contain scattered Brazilian pepper, melaleuca, poisonwood (*Metopium toxiferum*), nettletree (*Trema micrantha*), nightshade (*Solanum* sp.), mysrine (*Myrsine cubana*), dahoon holly (*Ilex cassine*), coastal plain willow, strangler fig (*Ficus aurea*), whisk fern (*Psilotum nudum*), bracken fern (*Pteridium aquilinum*), common reed (*Phragmites australis*), and buttonwood.

3.1.2 Target Community

Mitigation activities will restore the native vegetative community composition and enhance the hydrologic regime within the area, targeting conditions typical of a shallow sawgrass marsh/marl prairie community with mangroves and scattered tree islands. The majority of the Northwest Restoration Site will be restored to native sawgrass marsh, with areas of mangrove swamp, mixed wetland hardwood tree islands, and relatively open marl prairie areas supporting periphyton mat communities specifically beneficial for wading birds and shorebirds (Figure 8). The average hydroperiod for a sawgrass marsh is approximately ten months, but ranges from less than six months to almost continuous flooding. The Northwest Restoration Site is located within areas that historically supported marl prairie, with hydroperiods ranging between three and seven months and having relatively shallow water depth of approximately 4 inches. The network of mosquito ditches has facilitated colonization by Australian pine; backfilling the network of ditches should moderately elevate the water level within the marsh, discouraging recolonization by Australian pine. Removal of exotic species of vegetation and supplemental planting, if necessary, will be utilized to maintain the target community.

3.1.3 Methods

Restoration of wetlands at the Northwest Restoration Site involves hydrologic enhancement and exotic vegetation eradication to achieve the target community. The existing network of mosquito ditches will be backfilled with adjacent spoil materials and topographically graded to encourage sheetflow distribution of water throughout the restored area and to facilitate the success of target native vegetative communities (Figure 9). The spoil areas adjacent to mosquito ditches are dominated by Australian pine; removal of these exotic species will occur prior to backfilling. Due to potential soil subsidence within the spoil areas,

it is anticipated that additional fill material may be required to adequately fill mosquito ditches and achieve the desired topographic conditions. Where necessary, clean fill material will be imported to the Site for this purpose.

Control of nuisance/exotic species will be achieved through applications of herbicides, hand removal, prescribed fire, and additional focused herbicide re-treatments to areas showing regrowth. Due to the presence of desirable wetland vegetation throughout the area, it is anticipated that regeneration from the seedbank will produce a diverse assemblage of native species. Supplemental exotic species control will be utilized to prevent re-colonization of the area following initial eradication efforts. Installation of wetland vegetation, as necessary, will be included where natural regeneration from the seedbank does not produce the target vegetative community.

Specific guidelines and scope of work for the control of exotic species of vegetation within the Northwest Restoration Site will be prepared in consultation with representatives of the FDEP, USACE, and PERA. Herbicide applications will be timed so as to occur prior to the onset of summer rains. The following provides a conceptual schedule of activities proposed for the Northwest Restoration Site:

YEAR	MONTH	ACTIVITY
1	Jan-March	Mechanical clearing, mosquito ditch removal, topographic grading
	March/April	Ground crew herbicide treatment and manual removal
	October	Monitoring event #1
2	March/April	Prescribed fire
	October	Monitoring event #2
3	March/April	Spot herbicide treatment by ground crews
	May	Installation of native herbaceous wetland species if necessary, as available
	October	Monitoring event #3
4	March/April	Spot herbicide treatment by ground crews if necessary
	May	Supplemental installation of native wetland species if necessary
	October	Monitoring event #4
5	October	Monitoring event #5

The following EPA-approved herbicides, for example, are effective for control of the target species and may be considered for use as part of the exotic control program:

Brazilian pepper *(Schinus terebinthifolius)* Australian pine (*Casuarina equisetifolia*) Melaleuca (*Melaleuca quinquefolia*) Shoebutton ardisia (*Ardisia elliptica*)	Potential herbicides: triclopyr (Garlon), glyphosate (Rodeo), imazapyr (Arsenal) Method: Cut surface treatments to eliminate larger undesirable stems. Basal treatments can be used in combination with cut surface treatments when large undesirable trees are mixed with smaller stems. Freshly cut stumps should be treated with water soluble amine herbicide formulations labeled for this use; previously cut stumps (up to several months old) may be treated with low volume basal herbicide mixtures.

Sources: Thayer, D.D., K. A. Langeland, W.T. Haller, and J.C. Joyce. 2003. Weed Control in Florida Ponds. University of Florida Institute of Food and Agricultural Sciences; Kline, W.N. and J.G. Duquesnel. 1964. Management of Invasive Exotic Plants with Herbicides in Florida. *Down to Earth*, (51)2.

Success criteria, to be negotiated in consultation with the FDEP, USACE, and PERA, will likely include maintenance of the mitigation area to include 5% or less cover by exotic species and with suitable coverage of native wetland species of vegetation for a period of at least 3 years following initiation of mitigation activities.

FPL proposes to provide public access to the mitigation parcel for passive recreation and environmental education opportunities. An elevated boardwalk may be constructed with interpretive kiosks and observation platforms for birdwatching, wildlife observation, and plant identification (Figure 10). The location of the Northwest Mitigation Site in close proximity to the BNP will provide Park visitors with the opportunity to explore a restored sawgrass marsh, marl prairie, and mangrove ecosystem. In addition, the Site's location within the proposed Biscayne - Everglades Greenway would allow for potential incorporation into the Greenway's overall plan to provide a network of bicycle trails and walkways between the two parks.

3.1.4 Environmental Lift

The current UMAM wetland functional assessment scores for the Northwest Mitigation Site range from a low of 0.50 for the mosquito ditches to a high of 0.67 for mangrove areas. The functional scores reflect diminished ecological conditions as a result of the hydrological alterations and proliferation of exotic species. It can reasonably be expected that after exotic vegetation removal and maintenance, hydrologic enhancement through removal of mosquito ditches, establishment of native marsh vegetative communities, and preservation of the area, the UMAM functional assessment scores would range between 0.73 and 0.83 as a result of increased health of the vegetative community and subsequent increase of forage fish, macroinvertebrates, and wildlife utilization. A total of 37.6 credits of functional lift are generated through the restoration and preservation of 238 acres of wetlands within the Northwest Restoration Site. A summary of the functional assessment is provided in Table 3-1 and discussed below. UMAM spreadsheets are provided in Appendix A.

TABLE 3-1
NORTHWEST RESTORATION SITE FUNCTIONAL ASSESSMENT SUMMARY

Wetland Type (FLUCFCS Code)	Target Community (FLUCFCS Code)	Acres	UMAM Score		Time Lag x Risk	Lift per Acre	Functional Lift (Credits)
			Pre	Post			
Ditches (511)	Sawgrass Marsh (6411)	10.50	0.50	0.73	1.60	0.14	1.47
Freshwater/Sawgrass Marsh (641/6411)	Sawgrass Marsh (6411)	95.43	0.60	0.80	1.29	0.16	15.27
Mixed Wetland Hardwoods (617)	Mixed Wetland Hardwoods (617)	16.23	0.60	0.83	1.34	0.17	2.76
Exotic Wetland Hardwoods – Australian Pine (619)	Sawgrass Marsh (6411)	66.19	0.53	0.77	1.34	0.18	11.91
Periphyton Mat (655)	Periphyton Mat (655)	7.23	0.60	0.80	1.29	0.16	1.16
Mangrove (612)	Mangrove (612)	42.20	0.67	0.83	1.29	0.12	5.06
TOTAL		**238**					**37.6**

For areas of sawgrass marsh, freshwater marsh, and periphyton mat, utilizing the difference between pre- and post-mitigation UMAM functional scores (0.20) divided by the time lag (TL) and risk (R) factors (TL of 3 years = 1.0341, R factor of 1.25, TL×R = 1.29), the resulting functional lift per acre is 0.16. Following restoration, the functional value of mixed wetland hardwood communities would increase from 0.60 to 0.83. Utilizing the difference between pre- and post-mitigation UMAM functional scores (0.23) divided by the time lag (TL) and risk (R) factors (TL of 5 years = 1.0696, R factor of 1.25, TL×R = 1.34), which results in a lift per acre of 0.17. In the case of ditches, the difference between pre- and post-mitigation UMAM functional scores (0.23) divided by the time lag (TL) and risk (R) factors (TL of 5 years = 1.0696, R factor of 1.5, TL×R = 1.60), the resulting functional lift per acre is 0.14. The difference between pre- and post-mitigation UMAM functional scores for exotic wetland hardwoods (0.24) divided by the time lag (TL) and risk (R) factors (TL of 5 years = 1.0696, R factor of 1.25, TL×R = 1.34), results in functional lift per acre of 0.18. The resulting functional lift per acre is 0.12 for mangrove areas, utilizing the difference between pre- and post-mitigation UMAM functional scores (0.16) divided by the time lag (TL) and risk (R) factors (TL of 3 years = 1.0341, R factor of 1.25, TL×R = 1.29). The total functional lift generated by the proposed wetland restoration and preservation within the Northwest Restoration Site is 37.6 credits.

3.2 SW 320th Street Restoration Site

The SW 320th Street Restoration Site is located approximately 4 miles northwest of the Units 6 & 7 Site and encompasses a total of 574 acres, comprised of parcels located on the north and south of the C-103 Canal and extending east toward SFWMD-owned parcels adjacent to the FPL transmission line, L-31E

Canal, and the BNP (Figure 11). Restoration and enhancement of these parcels will be achieved through the removal of exotic species of vegetation, removal of ditches to restore natural topography and enhance hydrology, supplemental planting of desirable native wetland vegetation, and preservation through a conservation easement. Following restoration of wetlands within the SW 320th Street Restoration Site, these parcels are proposed to be transferred to the public trust, under the management of the SFWMD, BNP, MDC, FDEP or other qualified entity, to further regional wetland conservation efforts within the BBCW area. The juxtaposition of the SW 320th Street Restoration Site adjacent to lands previously conveyed from FPL to SFWMD adjacent to the L-31E Canal and BNP (Appendix C, Photographs 5 and 6) will result in a significant increase in the overall acreage of conservation lands within the BBCW area. These lands will be restored, preserved, and protected from future development in the area.

3.2.1 Existing Condition

Current land use/land cover within the SW 320th Street Restoration Site is illustrated in Figure 12. The southwestern, central, and northwestern portions of the site are classified as exotic wetland hardwoods (FLUCFCS 619) infested by the nuisance/exotic species Brazilian pepper and Australian pine. A parcel of planted palm tree nursery (FLUCFCS 241) is located within the western portion of the site, with associated perimeter drainage ditches. Forested wetlands within the eastern portion of the site are classified as mixed wetland hardwoods/exotic wetland hardwoods (FLUCFCS 617/619), vegetated with a variety of native species but extensively colonized by the exotic species Australian pine and Brazilian pepper. The central portion of the SW 320th Street Restoration Site includes an approximately 219-acre parcel of former palm tree nurseries that have been restored to freshwater marsh (FLUCFCS 641) and native buttonwood. Representative photographs are included in Appendix C; the existing vegetative community composition within each of these habitats is described below.

Palm Tree Nursery (FLUCFCS 241)

Approximately 42 acres of the site is comprised of palm tree nurseries. Native vegetative communities occurring upon hydric soils were historically cleared and the area was graded for production of palms. Elevated rows of trees are separated by irrigation furrows, with perimeter drainage ditches.

Freshwater Marsh (FLUCFCS 641)

The northern and central portion of the Site is comprised of approximately 219 acres of former palm tree nurseries that have been restored to freshwater marsh and buttonwood. A variety of herbaceous species occur within the marsh (Appendix C, Photograph 7), including several species of spikerush (*Eleocharis cellulosa; E. geniculata; E. interstincta*), arrowhead (*Sagittaria lancifolia*), giant leather fern (*Acrostichum danaefolium*), southern amaranth (*Amaranthus australis*), bushy bluestem (*Andropogon glomeratus*), spangletop (*Leptochloa nealleyi; L. fusca fascicularis*), Mexican primrose willow (*Ludwigia*

octovalvis), whorled marsh pennywort (*Hydrocotyle verticillata*), water hyssop (*Bacopa monnieri*), camphorweed, widespread maiden fern (*Thelypteris kuntii*), and the nuisance species cattail (*Typha domingensis*) and torpedo grass (*Panicum repens*). Nuisance vegetation, specifically cattail and torpedo grass, are controlled through targeted herbicide application. Sparsely vegetated mudflat areas with exposed substrate and/or open water provide habitat suitable for shorebird and wading bird foraging (Appendix C, Photographs 8 and 9). A variety of avifauna have been observed within the restored marsh, including wood storks (*Mycteria americana*), great blue heron (*Ardea herodias*), tricolored heron (*Egretta tricolor*), white ibis (*Eudocimus albus*), glossy ibis (*Plegadis falcinellus*), little blue heron (*Egretta caerulea*), snowy egret (*Egretta thula*), least tern (*Sterna antillarum*), pied-billed grebe (*Podilymbus podiceps*), blue-winged teal (*Anas discors*), mottled duck (*Anas fulvigula*), cattle egret (*Bubulcus ibis*), great egret (*Casmerodius albus*), black-necked stilt (*Himantopus mexicanus*), and red shouldered hawk (*Buteo jamaicense*).

Mixed Wetland Hardwood/Exotic Wetland Hardwoods (FLUCFCS 617/619)

The eastern portion of the SW 320th Street Restoration Site supports native mixed wetland hardwoods interspersed with exotics, including Australian pine, Brazilian pepper, and shoebutton ardisia. The canopy is comprised of buttonwood, white mangrove, dahoon holly, cocoplum, Australian pine, wax myrtle, myrsine, and poisonwood, with understory vegetation including sawgrass, camphorweed, arrowhead, leather fern, mangrove vine, nettletree, spikerush, and cattail. The eastern edge of the SW 320th Street Restoration Site abuts SFWMD parcels of mixed wetland hardwoods currently being treated for Australian pine and Brazilian pepper (Appendix C, Photograph 10).

Exotic Wetland Hardwoods (FLUCFCS 619)

Areas dominated by the nuisance exotic species Australian pine and Brazilian pepper occur in the southwestern portion of the site, both north and south of the C-103 canal. In addition to dense coverage of Australian pine and Brazilian pepper, a variety of both native and nuisance exotic species are present, including shoebutton ardisia, groundsel tree (*Bachharis halimifolia*), willow, elderberry (*Sambucus canadensis*), buttonbush (*Cephalnathus occidentalis*), strangler fig, primrose willow (*Ludwigia* sp.), dogfennel (*Eupatorium capillifolium*), spikerush, nettletree, climbing hempvine (*Mikania scandens*), and cattail.

3.2.2 Target Community

The target communities for the SW 320th Street Restoration Site are freshwater marsh and mixed wetland hardwood wetlands dominated by native species typical of the historical condition (Figure 13). Areas of exotic wetland hardwoods and palm tree nurseries will be restored to freshwater marsh, while the exotic wetland hardwood/mixed wetland hardwood forest along the eastern portion of the site will be restored to

a native mixed wetland hardwood community. Control of exotic species of vegetation will facilitate regeneration of desirable wetland vegetation from the seed bank, supplemented by planting as necessary to achieve the target communities. The anticipated vegetative community composition associated with freshwater marsh systems include a variety of herbaceous species such as spikerush, sawgrass, arrowhead, beaksedges (*Rhynchospora* spp.), camphorweed, leather fern, and pickerelweed (*Pontederia cordata*), as well as occasional shrubs and small trees such as buttonwood, willow, coco plum, and buttonbush. Within the restored freshwater marsh, sparsely-vegetated areas of exposed substrate will be created to provide potential shorebird foraging habitat. Mixed wetland hardwood areas will include a variety of native canopy and shrub species, such as buttonwood, myrsine, coco plum, white mangrove, willow, and dahoon holly, with an understory dominated by sawgrass.

3.2.3 Methods

Mitigation activities at the SW 320th Street Restoration Site will involve extensive exotic species eradication efforts to remove Australian pine, Brazilian pepper, and shoebutton ardisia infestation. Mechanical control methods will be used primarily where invasive plant densities are high and standing biomass limits accessibility. Bulldozers, mowers, choppers, feller-bunchers, chippers, chainsaws, and other machinery may be utilized. In areas that are not dominated by invasive vegetation, manual treatment with herbicides will occur. Herbicidal control involves the careful application of chemicals to the targeted plants, while minimizing impact to desirable native species of vegetation.

Herbicide applications will be timed so as to occur during the driest time of the year, prior to the onset of summer rains. Only EPA-approved herbicides will be used (see Section 3.1.3). Following mechanical and herbicide treatment of exotic vegetation, the areas will be topographically graded, including backfilling of agricultural ditches, and planted with native wetland species to encourage vegetative succession within the restored freshwater marsh wetlands. Herbaceous wetland plants will be planted on 3 foot centers to provide for rapid revegetation and effective competition against nuisance invader species. This will result in a density of approximately 4,800 plants per acre. Planting of bare root stock or small containerized stock will be done manually. Mixed wetland hardwood communities will be restored through natural regeneration from the seed bank and supplemental planting of desirable wetland species, as necessary. Subsequent treatments of exotic species of vegetation will be conducted as necessary to discourage regrowth of Brazilian pepper and Australian pine. The 219-acre freshwater marsh portion of the SW 320th Street Restoration Site, currently under restoration but not under a conservation easement, will be preserved and transferred to the public trust as part of the overall SW 320th Street Restoration Site mitigation alternative.

3.2.4 Environmental Lift

Within the SW 320th Street Restoration Site, the current UMAM functional score for Brazilian pepper and Australian pine-dominated wetlands (FLUCFCS 619) is 0.50. The functional score is a reflection of diminished ecological conditions as a result of the widespread proliferation of exotic species and historical hydrologic impacts. Within the eastern portion of the site, as native mixed wetland hardwoods increase in occurrence, the existing UMAM score is 0.57 due to continued prevalence of Australian pine and Brazilian pepper. Upland areas of active palm tree nursery were assigned a UMAM score of 0.27, due to presence of hydric soils but current lack of wetland vegetation and functions. The current UMAM functional score for areas of restored freshwater marsh is 0.57, resulting from the continued presence of exotic species within the restoration area. It can reasonably be expected that after exotic vegetation eradication and maintenance, removal of ditches, establishment of a native marsh and mixed wetland hardwood vegetative community, and preservation of the area, the functional value of the SW 320th Street Restoration Site would improve, with UMAM scores ranging from 0.60 to 0.73 as a result of increased health of the vegetative community, subsequent increase in wildlife utilization, and transfer of restored lands to the public trust. A total of 60.4 credits of functional lift are generated through the restoration and preservation of 574 acres within the SW 320th Street Restoration Site. A summary of the functional assessment is provided in Table 3-2 and discussed below. UMAM spreadsheets are provided in Appendix A.

TABLE 3-2

SW 320th STREET RESTORATION SITE
FUNCTIONAL ASSESSMENT SUMMARY

Wetland Type (FLUCFCS Code)	Target Community (FLUCFCS Code)	Acres	UMAM Score		Time Lag x Risk	Lift per Acre	Functional Lift (Credits)
			Pre	Post			
Wet Palm Tree Nursery (241)	Freshwater Marsh (641)	42	0.27	0.60	1.87	0.18	7.56
Mixed Wetland Hardwoods/Exotic Wetland Hardwoods (617/619)	Mixed Wetland Hardwoods (617)	169	0.57	0.73	1.34	0.12	20.28
Exotic Wetland Hardwoods (619)	Freshwater Marsh (641)	144	0.50	0.70	1.43	0.15	21.60
Freshwater Marsh (641)	Freshwater Marsh (641) - Preservation	219	0.57	0.63	0.9 (pres. adjust factor)	0.05	10.95
TOTAL		**574**					**60.4**

For areas of mixed wetland/exotic hardwoods adjacent to the C-103 Canal, utilizing the difference between pre- and post-mitigation UMAM functional scores (0.16) divided by the time lag (TL) and risk (R) factors (TL of 5 years = 1.0696, R factor of 1.25, TL×R = 1.34), the resulting functional lift per acre is 0.12. For the restoration of wet palm tree nurseries to freshwater marsh, the difference in pre- and post-mitigation scores (0.33) was divided by an increased risk factor and 5-year time lag factor (TL of 5 years = 1.0696, R factor of 1.75, TL×R = 1.87), with a resulting adjusted functional lift of 0.18 per acre. Areas of exotic wetland hardwoods to be restored to freshwater marsh were assigned a difference in pre- and post-mitigation scores of 0.20, which when divided by time lag and risk factors (TL of 5 years = 1.0696, R factor of 1.25, TL×R = 1.34) yields an adjusted functional lift of 0.15 per acre. For the 219-acre parcel of freshwater marsh currently under restoration, the preservation of this area and transfer to the public trust would generate a functional lift of 0.06, which when multiplied by a preservation adjustment factor of 0.9 results in an adjusted lift of 0.05 per acre. For the entire SW 320th Street Restoration Site, the functional lift associated with restoration and preservation of 574 acres is 60.4 credits.

3.3 Mitigation Banks

Wetland mitigation banks are proposed to offset the loss of wetland functions associated with the Units 6 & 7 Site (Plant Area and adjacent laydown area), the nuclear administration, training and parking area located immediately north of the Units 6 & 7 Site, the FPL reclaimed water treatment facility, as well as impacts associated with the Project's transmission line corridors. Impacts to saline wetlands within the Site, FPL reclaimed water treatment facility, nuclear administration, training and parking area, and East Preferred Transmission Corridor will be mitigated through the purchase of coastal mangrove credits from the EMB, while impacts to freshwater wetlands within the West Preferred Transmission Corridor are proposed to be mitigated through the purchase of credits from the HID. As these banks are functioning in advance of Project impacts, they reduce the temporal losses of aquatic functions and values and reduce uncertainty or risk over the ecological success of the mitigation.

3.3.1 Everglades Mitigation Bank

Wetland impacts associated with the Units 6 & 7 Site, the FPL reclaimed water treatment facility, the nuclear administration, training and parking area, and the East Preferred Transmission Corridor will be mitigated through the purchase of 201 mitigation credits from the EMB, calculated in accordance with the W.A.T.E.R. functional assessment methodology. A mosaic of saline mangrove and freshwater marsh habitats have been enhanced within the EMB, including reconnection of tidal creeks' freshwater headwaters to benefit hypersaline mangrove parcels and removal of berms and roads that created isolated parcels of historically continuous mangrove wetlands. The Units 6 & 7 Site is located within the same watershed and service area of the EMB (Figure 14). Providing mitigation to offset impacts within the

same watershed to retain lost function within the same basin is a concept that eliminates cumulative impacts. The restoration work of the EMB will be protected from future development pressure by a conservation easement and a perpetual maintenance fund ensures oversight. Enhancement and restoration associated with 201 credits of mitigation corresponds to approximately 1,400 acres of improved wetlands within the EMB.

3.3.2 Hole in the Donut Mitigation Bank

The HID is a regional mitigation bank located within the ENP and operated by the National Park Service (NPS) (Figure 15). The HID contains over 6,000 acres of agriculturally-impacted lands historically infested with the nuisance exotic species Brazilian pepper. Historic farming activities utilized rock-plowing to break up the original limestone surface and mix it with the surficial marl soil, which increased ground surface elevations and in turn decreased the hydroperiod such that 1985 National Wetland Inventory surveys mapped the area as uplands. The return of wetland functions within the HID involves the complete removal of all existing exotic vegetation and complete removal of historical rock-plowed agricultural soils. Early attempts at restoration of native vegetation through seeding, planting, mechanical removal of exotics, herbicide application, fire, and mowing or discing of farmed areas proved unsuccessful for exotic vegetation control. In order to prevent re-establishment of Brazilian pepper, complete removal of anthropogenic soils was required. The removal of rock-plowed material reduced the land elevation, allowing restoration of a more typical wetland hydroperiod to support the target marl prairie wetland community.

According to FDEP permit # 132416479, issued 2/15/1995, "mitigation for wetland impacts within the Mitigation Service Area will consist of a set dollar amount per acre of impact." Conservative assumptions regarding transmission access road length, height and width, as well as placement of structure pads, were incorporated into the assessment to derive a "not to exceed" maximum scenario of wetland impact acreage. Wetland impacts within the West Preferred Transmission Corridor are proposed to be mitigated through purchase of up to 308 mitigation credits from the HID, reflecting the "not to exceed" maximum scenario of wetland impact acreage. The HID permit is scheduled for renewal in 2015; if the renewal includes revision of the HID credit ledger to utilize the UMAM functional assessment protocol, the appropriate number of UMAM credits will be purchased to offset the loss of wetland functions associated with construction of transmission facilities within the West Preferred Transmission Corridor. The exact acreage of wetland impact and resulting functional loss will be calculated following completion of detailed transmission engineering design and are expected to be reduced. Purchase of mitigation credits from the HID will provide significant benefit to regional wetland

restoration and conservation efforts, and directly benefit vegetative communities and wildlife habitat within the ENP.

3.4 Pipeline Restoration

A total of up to approximately 46.3 acres of temporary wetland impacts are associated with the installation of the radial collector well delivery pipelines and the reclaimed water pipelines between the Miami-Dade South District Wastewater Treatment Plant and the FPL reclaimed water treatment facility (Figure 16). These areas are proposed to be mitigated through in-situ restoration of wetlands temporarily disturbed during excavation of pipeline trenches.

All areas of temporary wetland impact associated with pipeline installation will be restored, thereby avoiding any permanent reduction in wetland acreage. Mitigation will be provided to offset the temporary loss of wetland functional values. The potable water pipelines will be installed within existing upland road medians and within the temporary access roadway improvements corridor, therefore no additional wetland impacts will occur in association with the potable water pipelines.

3.4.1 Methods

Within wetland areas traversed during pipeline installation, the upper layer of the soil horizon associated with the pipeline trench will be scraped and placed in a spoil bank located on adjacent uplands, segregated from the spoil resulting from the further excavation of the trench. Following installation of the pipeline segment, the upper layer of the soil horizon will be replaced and graded to restore wetland elevations allowing natural revegetation of the temporarily impacted work area from the native seed bank. FPL will control exotic species of vegetation within the restored areas through manual removal and/or herbicide application, in consultation with FDEP, USACE, and PERA. If natural recruitment from the seed bank does not comply with success criteria regarding vegetative community composition and coverage, supplemental planting of native wetland species will be conducted.

3.4.2 Environmental Lift

The in-situ restoration of temporary wetland impacts associated with pipeline installation will generate a total of up to 33.1 credits of mitigation, as calculated in accordance with the UMAM, depending upon the location of the FPL reclaimed water treatment facility and associated pipeline routes. However, due to the time lag required to restore temporarily disturbed areas to their pre-construction condition, in-situ restoration of pipeline areas does not fully replace the loss of wetland functions. A time lag of 10 years was applied to areas of forested wetland impact (mangroves and mixed wetland hardwoods), while a 2 year time lag was applied to herbaceous marsh wetlands as well as canals and ditches. Significantly disturbed or agriculturally altered areas classified as exotic wetland hardwoods and wet palm tree

nurseries were not assigned restoration time lag factors. A total of approximately 3.8 additional credits of mitigation are required following in-situ restoration when time lag factors are applied. These additional credits of mitigation required are included in the overall Project wetland impact summary (Table 1-1), as well as detailed in Tables 2-2 and 2-4.

The evaluation of functional lift associated with in-situ restoration of temporary impacts is summarized in Table 3-3 below.

TABLE 3-3

PIPELINE RESTORATION AREAS
FUNCTIONAL ASSESSMENT SUMMARY

Wetland Type (FLUCFCS Code)	Acres	Restoration Time Lag	UMAM Score		Functional Lift (Credits)		
			Target	Actual	Target	Actual	Deficit
Reclaimed Water Pipelines (Potential Alternative Location)							
Wet Palm Tree Nurseries (241-W)	0.16	1 year = 1.0	0.27	0.27	0.04	0.04	0
Canals/Ditches (510/511)	1.7	2 years = 1.0170	0.50	0.49	0.85	0.83	0.02
Mangroves (612)	19.51	10 years = 1.1614	0.77	0.66	15.02	12.88	2.14
Mangrove/Exotic Wetland Hardwoods (612/619)	4.47	10 years = 1.1614	0.60	0.52	2.68	2.32	0.36
Mixed Wetland Hardwoods (617)	8.34	10 years = 1.1614	0.70	0.60	5.84	5.00	0.84
Exotic Wetland Hardwoods (619)	2.31	1 year = 1.0	0.50	0.50	1.16	1.16	0
Freshwater Marshes (641)	7.09	2 years = 1.0170	0.70	0.69	4.96	4.89	0.07
SUBTOTAL	**43.6**				30.55	27.12	**3.4**
Reclaimed Water Pipelines (Originally Proposed Location)							
Wet Palm Tree Nurseries (241-W)	0.16	1 year = 1.0	0.27	0.27	0.04	0.04	0
Canals/Ditches (510/511)	1.7	2 years = 1.0170	0.50	0.49	0.85	0.83	0.02
Mangroves (612)	17.17	10 years = 1.1614	0.77	0.66	13.22	11.33	1.89
Mangrove/Exotic Wetland Hardwoods (612/619)	4.47	10 years = 1.1614	0.60	0.52	2.68	2.32	0.36
Mixed Wetland Hardwoods (617)	8.46	10 years = 1.1614	0.70	0.60	5.92	5.08	0.84
Exotic Wetland Hardwoods (619)	2.31	1 year = 1.0	0.50	0.50	1.16	1.16	0
Freshwater Marshes (641)	4.07	2 years = 1.0170	0.70	0.69	2.85	2.81	0.04
SUBTOTAL	**38.3**				26.72	23.57	**3.2**
Treated Reclaimed Water Pipeline (Originally Proposed Location)							
Sawgrass Marsh/Dwarf Mangroves (6411/612-B)	3.1	10 years = 1.1614	0.77	0.66	2.39	2.05	0.34
Mixed Wetland Hardwoods (617)	0.3	10 years = 1.1614	0.70	0.60	0.21	0.18	0.03
SUBTOTAL	**3.4**				2.60	2.23	**0.4**
Radial Collector Well Delivery Pipelines							
Mangroves (612)	**3**	10 years = 1.1614	0.87	0.75	2.61	2.25	**0.4**
TOTAL	**46.6[a]**				**33.16[a]**	**29.37[a]**	**3.8[a]**

[a] Total calculated utilizing reclaimed water pipeline corridor to FPL Reclaimed Water Treatment Facility potential alternative location. Total utilizing originally proposed location = 44.7 acres, 4.0 UMAM credits

3.5 Sea Dade Canal Crocodile Sanctuary

As part of the Project's additional mitigation activities, the Sea Dade Canal Crocodile Sanctuary involves creation of wetlands impacted by historical dredging and filling, topographic grading and planting, creation of low-salinity ponds for juvenile crocodile refugia, and creation of habitat conditions with suitable nesting substrate specifically benefitting the federally threatened American crocodile (*Crocodylus acutus*). The approximately 6.4-acre area is located southwest of the industrial wastewater treatment facility, adjacent to the Sea Dade Canal and an existing meteorological tower (Figure 17).

3.5.1 Existing Condition

The proposed Sea Dade Canal Crocodile Sanctuary is currently comprised of previously filled uplands, open water borrow ponds, mixed hardwood wetlands, dwarf red mangrove marsh, and sawgrass marsh (Figure 18) adjacent to the Sea Dade Canal. An access road leads to a meterological tower on the eastern edge of the site. Areas of forested wetland are vegetated with a mixture of red mangrove, white mangrove, buttonwood, poisonwood, and the threatened species locust berry (*Byrsonima lucida*).

3.5.2 Target Community

The target community is modeled after the successful crocodile sanctuary created upon previously filled land within the EMB in 2008. A post-enhancement conceptual design is presented in Figure 19. Upland areas will be topographically graded to restore wetland hydrology and planted with a variety of native species such as buttonwood, bay cedar (*Suriana maritima*), Florida silver palm (*Coccothrinax argentata*), willow bustic (*Sideroxylon salicifolium*), muhly grass (*Muhlenbergia capillaries*), and railroad vine (*Ipomea pes-capri*) to create a mosaic of habitats, including saline lagoon areas connecting to the Sea Dade Canal, isolated low-salinity ponds, and crocodile nesting areas utilizing a proven mixture of peat, marl, and sand. In addition to providing a nesting sanctuary for crocodiles, the area will provide potential foraging habitat for wading birds, including wood storks, through the creation of shallow freshwater ponds suitable for tactile feeding.

3.5.3 Methods

The Sea Dade Canal Crocodile Sanctuary will be created in accordance with the methodology used to create the EMB crocodile sanctuary in 2008. Photographs of the crocodile sanctuary prior to enhancement and immediately following creation are presented in Appendix C (Photographs 11 and 12). This approximately 5-acre area was cleared of exotic vegetation, topographically graded to create freshwater ponds and nesting areas with a specific mixture of peat, marl, and sand to create ideal nesting substrate, and planted with native species of vegetation. The success of the design is evidenced through documented utilization of the area by a nesting female crocodile within the first year after construction.

Similar to the design utilized at the EMB crocodile sanctuary, areas of previously filled uplands within the Sea Dade Canal Crocodile Sanctuary will be graded and connected to existing borrow pond areas to create an open water lagoon habitat. The proven mixture of peat, marl, and sand will be used along the slopes and banks to create ideal crocodile nesting substrate. The lagoon will be connected to the Sea Dade Canal on the eastern edge near the existing access road. It will be connected to the western borrow pond and a second connection to the Sea Dade Canal will also be constructed within the western borrow pond to facilitate wildlife access to the sanctuary. Perched ponds designed to collect rainwater and provide low-salinity juvenile crocodile refugia will be created surrounding the primary lagoon.. Nesting mounds of peat, marl, and sand will be constructed adjacent to and surrounding the low-salinity ponds. Areas of forested wetland surrounding the lagoon and ponds will be maintained to include 5% or less cover by exotic species of vegetation through mechanical and herbicide treatment.

3.5.4 Environmental Lift

The Sea Dade Canal Crocodile Sanctuary is being proposed as additional mitigation, although the resulting functional lift is not included in the overall mitigation credit ledger. However, the W.A.T.E.R. functional assessment was utilized to quantify the benefit generated and is provided below for informational purposes. Utilizing the W.A.T.E.R. functional assessment protocol, a total of approximately 1.5 credits of functional lift are generated through the proposed 6.4 acres of wetland restoration and habitat creation associated with Sea Dade Canal Crocodile Sanctuary. A summary of the functional assessment is provided in Table 3-4 and discussed below; W.A.T.E.R. spreadsheets are provided in Appendix B.

TABLE 3-4

SEA DADE CANAL CROCODILE SANCTUARY
FUNCTIONAL ASSESSMENT SUMMARY

Existing Land Use (FLUCFCS Code)	Acres	Post-Restoration Land Use (FLUCFCS Code)	Acres	W.A.T.E.R. Score		Site Suitability Multiplier	Lift per Acre	Functional Lift (Credits)
				Pre	Post			
Borrow Pond (534)	0.77	Saline Lagoon (542)	0.77	0.49	0.77	1.08	0.30	0.23
Dwarf Mangroves (612-B)	0.75	Saline Lagoon (542)	0.04	0.75	0.77	1.08	0.02	<0.01
		Dwarf Mangroves (612-B)	0.71	0.75	0.82	1.08	0.08	0.06
Mixed Wetland Hardwoods (617)	3.08	Mixed Wetland Hardwoods (617)	2.75	0.69	0.77	1.08	0.09	0.25
		Saline Lagoon (542) and Low-Salinity Ponds (534)	0.31	0.69	0.77	1.08	0.09	0.03
		Dwarf Mangroves (612-B)	0.02	0.69	0.82	1.08	0.14	<0.01
Sawgrass Marsh (6411)	0.28	Sawgrass Marsh (6411)	0.28	0.75	0.82	1.08	0.08	0.02
Disturbed Open Land (744)	1.32	Saline Lagoon (542) and Low-Salinity Ponds (534)	0.82	0.13	0.77	1.08	0.69	0.57
		Mixed Wetland Hardwoods (617)	0.03	0.13	0.77	1.08	0.69	0.02
		Sawgrass Marsh (6411)	0.47	0.13	0.82	1.08	0.75	0.35
Roads (814)	0.19	Roads (814)	0.19	-	-	-	-	N/A
Electric Power Facilities (831)	0.04	Electric Power Facilities (831)	0.04	-	-	-	-	N/A
TOTAL	**6.4**		**6.4**					**1.5**

The current W.A.T.E.R. functional scores for disturbed open land and borrow pond areas within the proposed Sea Dade Canal Crocodile Sanctuary Site are 0.13 and 0.49, respectively. It can reasonably be expected that after creation of saline lagoon and low-salinity juvenile crocodile pond refugia, the functional value of these areas will improve to 0.77 as a result of increased health of the aquatic and vegetative community and subsequent increase in wildlife utilization. Utilizing the difference between pre- and post-mitigation W.A.T.E.R. functional scores for disturbed open lands (0.64) and borrow pond (0.28) multiplied by the site suitability multiplier (1.08), the resulting functional lift per acre is 0.69 and 0.30, respectively. In the case of disturbed open land conversion to sawgrass marsh, the difference between pre and post-mitigation W.A.T.E.R. functional scores (0.69) multiplied by the site suitability multiplier (1.08) yields 0.75 units of functional lift per acre. The current W.A.T.E.R. functional score for

mixed wetland hardwood wetlands within the proposed Sea Dade Canal Crocodile Sanctuary Site is 0.69. The functional score reflects slightly diminished ecological conditions resulting from the disturbed nature of the adjacent previously filled areas. It can reasonably be expected that after restoration, the functional value of the forested wetland areas would improve to 0.77 as a result of increased health of the vegetative community and subsequent increase in wildlife utilization. Utilizing the difference between pre- and post-mitigation W.A.T.E.R. functional scores for mixed wetland hardwood wetlands (0.08) multiplied by the site suitability multiplier (1.08), the resulting functional lift per acre is 0.09. Restoration of historically disturbed areas and increase in the quality of wildlife habitat will slightly increase the functional value of adjacent sawgrass marsh and dwarf mangrove areas within the Sea Dade Canal Crocodile Sanctuary. Using the difference between pre- and post-mitigation W.A.T.E.R. functional scores for sawgrass and dwarf mangrove wetlands (0.07) multiplied by the site suitability multiplier (1.08), the resulting functional lift per acre is 0.08. Therefore, the functional lift associated with enhancement and preservation of 6.4 acres of wetlands within the Sea Dade Canal Crocodile Sanctuary Site is 1.5 credits.

3.6 Temporary Construction Access Road Restoration

The restoration of temporary construction access roads is proposed as part of the Project's additional mitigation activities, conducted without the resulting functional lift included in the overall mitigation credit ledger. Temporary construction access road improvements are necessary to facilitate transportation of employees, construction workers, and materials and supplies to and from the Turkey Point Plant during the construction phase. The roadway improvements are uniquely required for safe and efficient construction of the facility, but not all are necessary post-construction. FPL is providing compensatory mitigation for all wetland impacts associated with the temporary construction access roads as if they are permanent. FPL proposes to remove lanes required for temporary construction access following construction and restore the temporarily-impacted wetlands. Following removal of temporary lanes, the area will be topographically graded to pre-construction elevation and planted with native species of vegetation, principally sawgrass, similar to the surrounding landscape. Permanent access road facilities on SW 359th Street will be limited to a transmission access road, with a typical 18' wide surface at a height of at least one foot above seasonal high water. The acreage of temporary construction access road restoration will be determined following detailed road design. It is anticipated that over 50% of the temporarily impacted area will be restored.

4.0 MONITORING AND SUCCESS CRITERIA

Mitigation monitoring methodology, frequency, and success criteria for each mitigation area will be developed in consultation with the FDEP, USACE and RER. FPL will document implementation of the proposed mitigation projects and provide monitoring of mitigation success in accordance with the requirements of the FDEP, USACE and RER. Monitoring reports will be provided to the FDEP, USACE and RER detailing the condition of each mitigation project relative to the prescribed success criteria as required and proposed corrective actions to be implemented to achieve success criteria, as necessary.

Typical success criteria used to demonstrate achievement of required mitigation include:

- Nuisance/Exotic species occupy less than 5% of the total vegetative cover of the parcel;
- Percent cover by desirable wetland species, as listed in F.A.C. Rule 62-340, shall be 95% or greater;
- Wetland species shall be reproducing naturally in the ground, shrub, and canopy stratum; and
- Final success determination shall not be made less than two years from the completion of implementation of the initial mitigation measures and when the above-mentioned criteria have been continuously met for a period of a least one growing season without intervention in the of removal of undesirable vegetation.

The specific information to be included within the mitigation monitoring reports will be determined in consultation with the FDEP, USACE and RER; typical requirements are as follows:

- Status of construction, with a description of the extent of work completed since previous report;
- Problems encountered and solutions undertaken;
- Anticipated work for the following year;
- Panoramic photographs taken from at least four permanent stations;
- Status of nuisance/exotic vegetation eradication on the parcel;
- Status of enhancement on the parcel;
- Herbicide listing and date of application; and
- Percentage survival, density, and cover of trees and herbaceous species.

5.0 COMPLIANCE WITH 33 CFR 332.4(c)(2-13)

In accordance with the USACE Compensatory Mitigation for Losses of Aquatic Resources, Final Rule (Federal Register Vol. 73, No. 70, April 10, 2008), mitigation plans must incorporate the 12 components presented in 33 CFR 332.4(c)(2-13). The following describes each of the 12 components and documents the Turkey Point Units 6 & 7 Mitigation Plan's compliance:

332.4(c)(2): Objectives. A description of the resource type(s) and amount(s) that will be provided, the method of compensation (i.e., restoration, establishment, enhancement, and/or preservation), and the manner in which the resource functions of the compensatory mitigation project will address the needs of the watershed, ecoregion, physiographic province, or other geographic area of interest.

Project Compliance: The mitigation plan proposes over 800 acres of wetland restoration and preservation within the BBCW area contiguous to SFWMD-owned parcels and Biscayne Bay; in-situ restoration of temporarily impacted wetlands associated with pipeline installation; creation and preservation of wetland wildlife habitat designed to benefit the American crocodile, wading birds, and shorebirds; and purchase of mitigation credits from the EMB and HID. The resource types and amounts associated with each mitigation area are provided in Section 3.

332.4(c)(3): Site selection. A description of the factors considered during the site selection process. This should include consideration of watershed needs, onsite alternatives where applicable, and the practicability of accomplishing ecologically self-sustaining aquatic resource restoration, establishment, enhancement, and/or preservation at the compensatory mitigation project site.

Project Compliance: Following avoidance and minimization of impacts associated with the Project through utilization of previously-impacted areas and uplands to the greatest extent practicable, the mitigation site selection process used the following factors:

a. Preference for on-site mitigation, within the same drainage basin, to ensure replacement of aquatic resource functions within the immediate vicinity of Project impacts;

b. Preference for mitigation parcels that provide suitable habitat for threatened and endangered species, to support regional conservation efforts;

c. Selection of sites with conditions conducive to rehabilitation and re-establishment efforts focused upon successful restoration of native wetland communities; and

d. Sites of sufficient size to allow for mitigation of the aquatic resource functions lost as a result of the Project.

332.4(c)(4): Site protection instrument. A description of the legal arrangements and instrument, including site ownership, that will be used to ensure the long-term protection of the compensatory mitigation project site.

Project Compliance: It is FPL's intention to place the NW Restoration Site under a conservation easement and manage the site in perpetuity upon fulfilling the proposed restoration activities and demonstrating compliance with success criteria. Following restoration of wetlands within the SW 320th Street Restoration Site, these parcels are proposed to be transferred to the public trust, under the management of the SFWMD, BNP, MDC, FDEP or other qualified entity, to further regional wetland conservation efforts within the BBCW area.

332.4(c)(5): Baseline information. A description of the ecological characteristics of the proposed compensatory mitigation project site and, in the case of an application for a DA permit, the impact site. This may include descriptions of historic and existing plant communities, historic and existing hydrology, soil conditions, a map showing the locations of the impact and mitigation site(s) or the geographic coordinates for those site(s), and other site characteristics appropriate to the type of resource proposed as compensation. The baseline information should also include a delineation of waters of the United States on the proposed compensatory mitigation project site. A prospective permittee planning to secure credits from an approved mitigation bank or in-lieu fee program only needs to provide baseline information about the impact site, not the mitigation bank or in-lieu fee project site.

Project Compliance: Please see the ERP application for a description of the Project impact sites and signed/sealed wetland surveys. Description of the mitigation sites is included in Section 3 of this Mitigation Plan. The delineation of waters of the United States on the proposed compensatory mitigation sites is based upon field review, soil surveys, and aerial imagery.

332.4(c)(6): Determination of credits. A description of the number of credits to be provided, including a brief explanation of the rationale for this determination.

(i) For permittee-responsible mitigation, this should include an explanation of how the compensatory mitigation project will provide the required compensation for unavoidable impacts to aquatic resources resulting from the permitted activity.

(ii) For permittees intending to secure credits from an approved mitigation bank or in-lieu fee program, it should include the number and resource type of credits to be secured and how these were determined.

Project Compliance: A Uniform Mitigation Assessment Method (UMAM) functional assessment of each proposed mitigation site is included in Appendix A and summarized in Section 3. The functional assessment includes an evaluation of the functional value of each mitigation site in its existing condition and the expected functional value of each site following completion of mitigation activities. The number of mitigation credits generated includes USACE time lag and risk factors. The proposed mitigation activities will provide type-for-type enhancement, restoration, and preservation of wetlands to replace the loss of wetland functions.

332.4(c)(7): Mitigation work plan. Detailed written specifications and work descriptions for the compensatory mitigation project, including, but not limited to, the geographic boundaries of the project; construction methods, timing, and sequence; source(s) of water, including connections to existing waters and uplands; methods for establishing the desired plant community; plans to control invasive plant species; the proposed grading plan, including elevations and slopes of the substrate; soil management; and erosion control measures. For stream compensatory mitigation projects, the mitigation work plan may also include other relevant information, such as planform geometry, channel form (e.g., typical channel cross-sections), watershed size, design discharge, and riparian area plantings.

Project Compliance: Please see Section 3 for a discussion of proposed work at each mitigation site. In accordance with 33 CFR 332.4(c)(1), FPL would request that the district engineer address any of the specific work plan requirements as permit conditions.

332.4(c)(8): Maintenance plan. A description and schedule of maintenance requirements to ensure the continued viability of the resource once initial construction is completed.

Project Compliance: Please see Sections 3.1.3, 3.2.3, 3.4.1, and 3.5.3 for discussion of proposed methods and maintenance requirements to ensure the continued viability of the mitigation sites.

332.4(c)(9): Performance standards. Ecologically-based standards that will be used to determine whether the compensatory mitigation project is achieving its objectives.

Project Compliance: The mitigation activities will be measured against performance standards to assess whether the project is achieving its objectives. Specifically, the re-establishment of natural vegetative communities will be measured through annual monitoring of the vegetative community structure. As described in Section 4, the performance standards, to be finalized in consultation with the USACE, FDEP, and RER, will likely include the following typical criteria:

- Nuisance/exotic species of vegetation occupy >5 percent of the total cover on the parcel
- Percent cover by native vegetation is 95 percent or greater within the wetlands on the parcel
- Wetland species will be reproducing naturally in each stratum

The final success determination shall not be made less than two years from the completion of implementation of the initial enhancement measures and when the above mentioned criteria have been continuously met for a period of at least one growing season, without intervention in the form of removal of undesirable vegetation.

332.4(c)(10): Monitoring requirements. A description of parameters to be monitored in order to determine if the compensatory mitigation project is on track to meet performance standards and if adaptive management is needed. A schedule for monitoring and reporting on monitoring results to the district engineer must be included.

Project Compliance: Monitoring events are expected to occur annually towards the end of the growing season (September-October), with reports delivered to the USACE, FDEP, and RER by the end of the calendar year. During each monitoring event, data will be collected at permanent monitoring stations to document the vegetative community condition.

Monitoring activities at each mitigation site include identification and percent cover of herbaceous and canopy species, water depths, panoramic photographs of the mitigation site as well as photographs of each individual herbaceous and/or canopy plot, wildlife observations, and status of exotic/nuisance species eradication.

Transects will be established through the each mitigation site, with monitoring stations established at equal intervals along each transect. The locations of monitoring stations will be permanently established with rebar and PVC pipes.

At each monitoring station, a 1-meter square quadrat will be placed to determine composition of the herbaceous strata. All plant species within each 1-meter square quadrat will be identified and their corresponding percent cover recorded, including coverage of bare ground and open water.

Within forested wetland communities, 20' x 30' canopy plots will be established to measure canopy and sub-canopy vegetation. Within the canopy plots, all trees and shrubs will be identified; percent cover

recorded by species, and individual diameters measured. In addition, the herbaceous community within the canopy plots will be generally described to further illustrate the overall vegetative community species composition.

Water depth will be recorded to the nearest inch at four locations within each canopy plot and at one location within each 1-meter square quadrat. Panoramic photographs will be taken from fixed permanent stations, to document conditions through views of each mitigation site from the north, south, east, and west boundaries.

Annual monitoring reports will be furnished to the USACE, FDEP, and RER to include, at a minimum:

- Status of construction
- Problems encountered and solutions
- Anticipated work within the next 12 months
- Panoramic photographs taken from permanent stations
- Status of nuisance eradication, if required
- Status of enhancement
- Herbicide listing and date of application, if any, and
- Percent cover of all herbaceous and canopy species

332.4(c)(11): Long-term management plan. A description of how the compensatory mitigation project will be managed after performance standards have been achieved to ensure the long-term sustainability of the resource, including long-term financing mechanisms and the party responsible for long-term management.

Project Compliance: It is FPL's intention to place the NW Restoration Site and Sea Dade Canal Crocodile Sanctuary mitigation sites under a conservation easement and manage the sites in perpetuity upon fulfilling the proposed restoration activities and demonstrating compliance with success criteria. Following restoration of wetlands within the SW 320th Street Restoration Site, these parcels are proposed to be transferred to the public trust, under the management of the SFWMD, BNP, MDC, FDEP or other qualified entity, to further regional wetland conservation efforts within the BBCW area.

As a public utility, FPL has sufficient financial assurances to successfully complete the proposed mitigation activities and provide long-term management. FPL has a proven track record of large, successful mitigation and conservation projects, such as the Northwest Mitigation Parcel associated with

the FPL Martin Plant (Martin County), the Everglades Mitigation Bank (Miami-Dade County), the Barley Barber Swamp (Martin County), the Scout Lagoon on the Turkey Point Plant property, and mangrove restoration areas on the Turkey Point Plant property associated with Turkey Point Unit 5 and stack laydown projects.

332.4(c)(12): Adaptive management plan. A management strategy to address unforeseen changes in site conditions or other components of the compensatory mitigation project, including the party or parties responsible for implementing adaptive management measures. The adaptive management plan will guide decisions for revising compensatory mitigation plans and implementing measures to address both foreseeable and unforeseen circumstances that adversely affect compensatory mitigation success.

Project Compliance: Results of the annual monitoring will be used to identify those mitigation activities that are to be adapted to address any unforeseen changes in site conditions. In the case of nuisance/exotic species of vegetation, the adaptive management plan will focus eradication efforts upon those areas of extensive infestation with nuisance/exotic species; altering treatment locations depending upon the reduction in extent or encroachment into additional areas of the mitigation sites. A similar facet of the adaptive management plan may arise in the unforeseen instance of failure of natural recruitment of native species to occur within areas of exotic species eradication. In this case, FPL would evaluate the installation of native species of vegetation to supplement natural recruitment, with the goal of achieving the performance standard.

332.4(c)(13): Financial assurances. A description of financial assurances that will be provided and how they are sufficient to ensure a high level of confidence that the compensatory mitigation project will be successfully completed, in accordance with its performance standards.

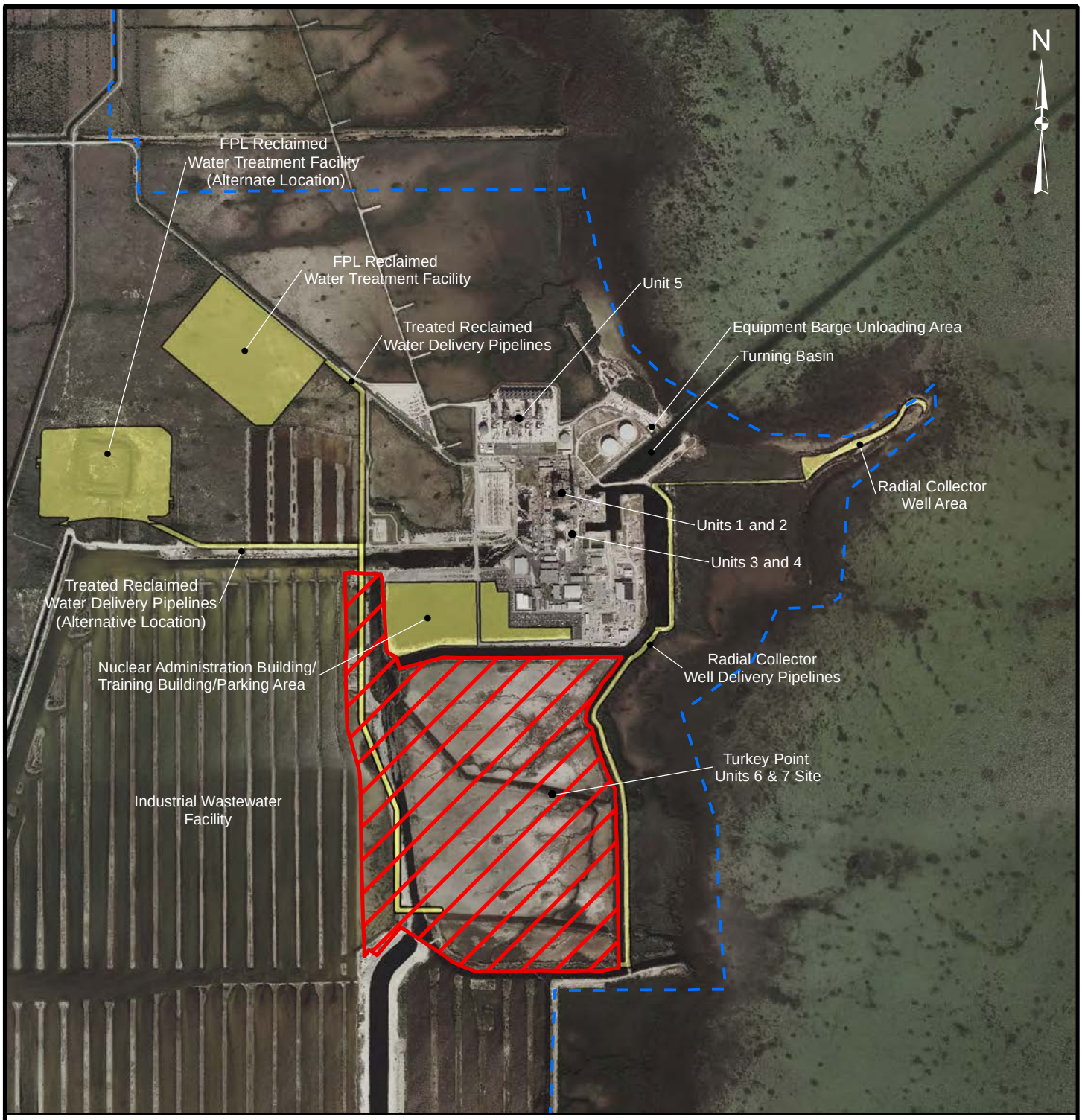
Project Compliance: The mitigation project's financial assurance will be provided by FPL, who has a track record of successful mitigation projects that fulfill performance standards.

6.0 CONCLUSION

Wetland impacts associated with the Turkey Point Units 6 & 7 Project will be mitigated through a combination of wetland restoration, enhancement, and preservation consistent with the regional restoration goals of the CERP within the Biscayne Bay Coastal Wetlands study area and Model Lands Basin, as well as purchase of mitigation credits from the EMB and HID. FPL has proposed a suite of mitigation opportunities to compensate for wetland impacts involving over 800 acres of applicant-sponsored wetland restoration and preservation over wetlands located within the BBCW area contiguous to SFWMD-owned parcels and Biscayne Bay; in-situ restoration of temporarily impacted wetlands associated with pipeline installation; creation and preservation of wildlife habitat designed to benefit the American crocodile, wading birds, and shorebirds; and purchase of mitigation credits from the EMB and HID. The mitigation alternatives not only offset the Project's wetland impacts, but also benefit BNP and CERP restoration projects, support regional conservation efforts through enhancement and preservation of significant acreage of wetland habitat, and provide opportunities for public recreation and environmental education.

This mitigation plan provides the functional lift required to offset the Project's wetland impacts. Detailed planting plans, topographic grading designs, and site-specific mitigation success criteria will be developed in consultation with the appropriate regulatory agencies during further refinement and finalization of the mitigation plan.

FIGURES



LEGEND

- Turkey Point Plant Property
- Turkey Point Units 6 & 7 Site
- Associated Non-Linear Facilities

1,800 0 Feet

REFERENCES

1. Imagery, Miami-Dade County, 2007.

PROJECT

TURKEY POINT UNITS 6 & 7
PROJECT

TITLE

PROPOSED FACILITIES
SITE AND ASSOCIATED NON-LINEAR FACILITIES

FPL

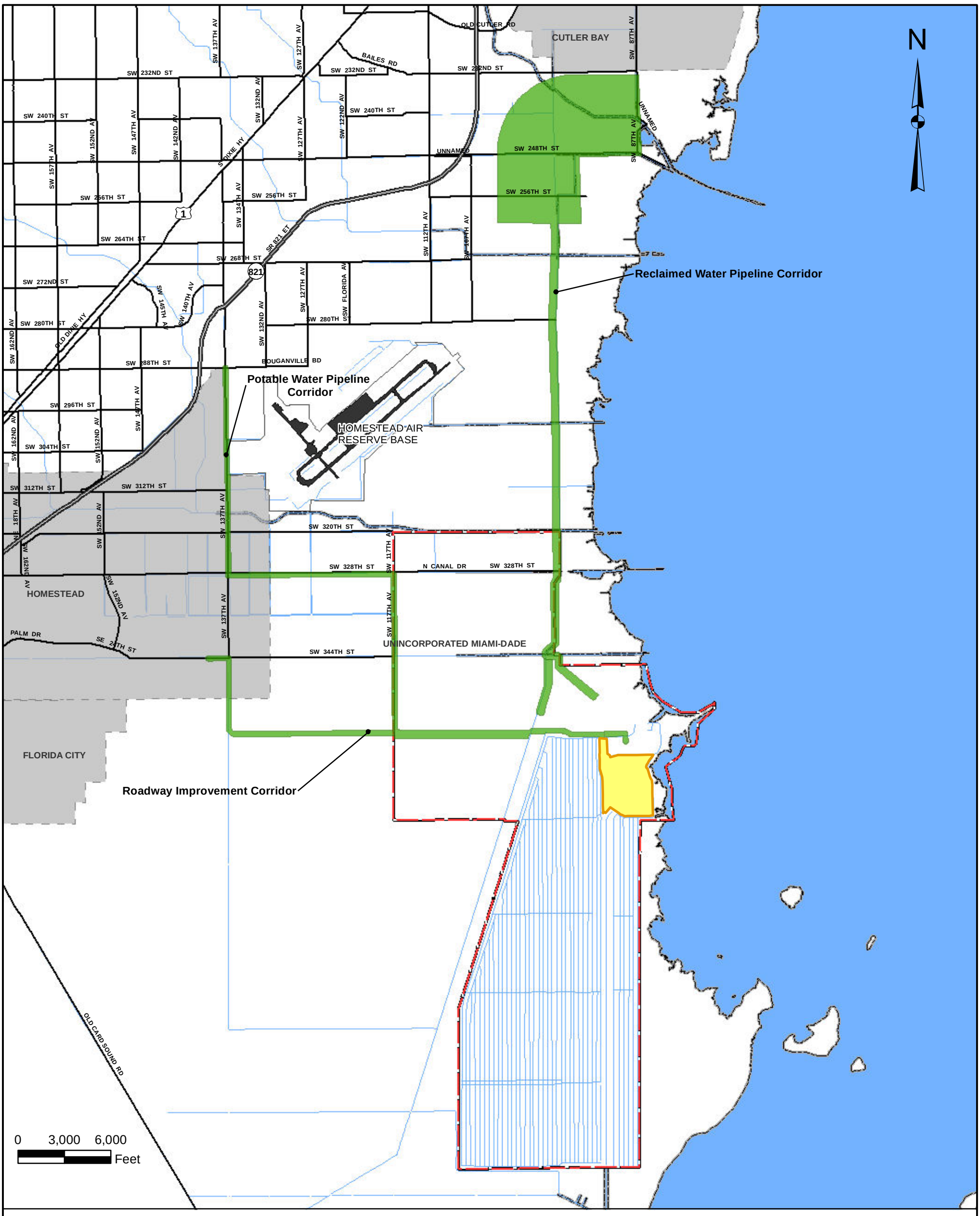
FILE No. 08387584_K025

REV. 0

PLOT DATE 6/22/2011

FIGURE

1

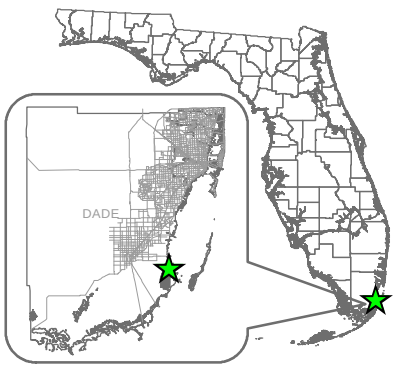


LEGEND

- Turkey Point Units 6 & 7 Site
- Associated Linear Facilities - Corridors
- Generalized Boundary of Turkey Point Plant Property

REFERENCES

1. Municipal Boundaries, Canals, Highways, Major Roads, Miami-Dade County GIS, 2006.



NOTES

Parcels not owned by FPL are included within the Generalized Boundary of Turkey Point Plant Property.

FIGURE 2

PLOT DATE 8/22/2012

REV. 0

FILE No. 08387584_K026

TITLE

PROPOSED FACILITIES NON-TRANSMISSION LINEAR FACILITIES

PROJECT

TURKEY POINT UNITS 6 & 7 PROJECT

FPL

N

KROME AVE

NORTH MIAMI BEACH
MIAMI GARDENS
MIAMI LAKES
BAL HARBOUR
OPA-LOCKA
NORTH MIAMI
BISCAYNE PARK
HIALEAH GARDENS
HIALEAH
MIAMI SHORES
EL PORTAL
SURFSIDE
MEDLEY
DORAL
MIAMI BEACH
NORTH BAY VILLAGE
MIAMI SPRINGS
VIRGINIA GARDENS
MIAMI
SWEETWATER
WEST MIAMI
CORAL GABLES
SOUTH MIAMI
KEY BISCAYNE
UNINCORPORATED MIAMI-DADE
PINECREST
PALMETTO BAY
Biscayne Bay
CUTLER BAY
HOMESTEAD
FLORIDA CITY
ISLANDIA

Pennsuco
Levee
Miami
Davis
Turkey Point
Clear Sky

826
874
821
1

TOWER RD
INGRAHAM HWY
S. DIXIE HWY
OLD CARD SOUND RD

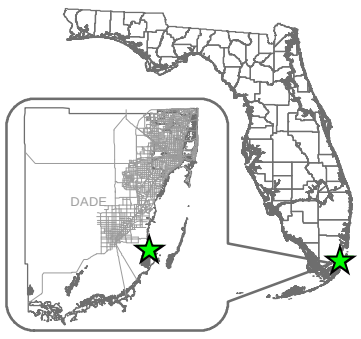
0 9,000 18,000
Feet

LEGEND

- FPL Substations
- Associated Linear Facilities - Transmission Lines and Corridors
- Secondary Corridor
- Generalized Boundary of Turkey Point Plant Property

REFERENCES

1. Municipal Boundaries, Canals, Highways, Miami-Dade County GIS, 2006.



NOTES

Parcels not owned by FPL are included within the Generalized Boundary of Turkey Point Plant Property.

FIGURE 3

PLOT DATE 8/22/2012

REV. 0

FILE No. 08387584_K027

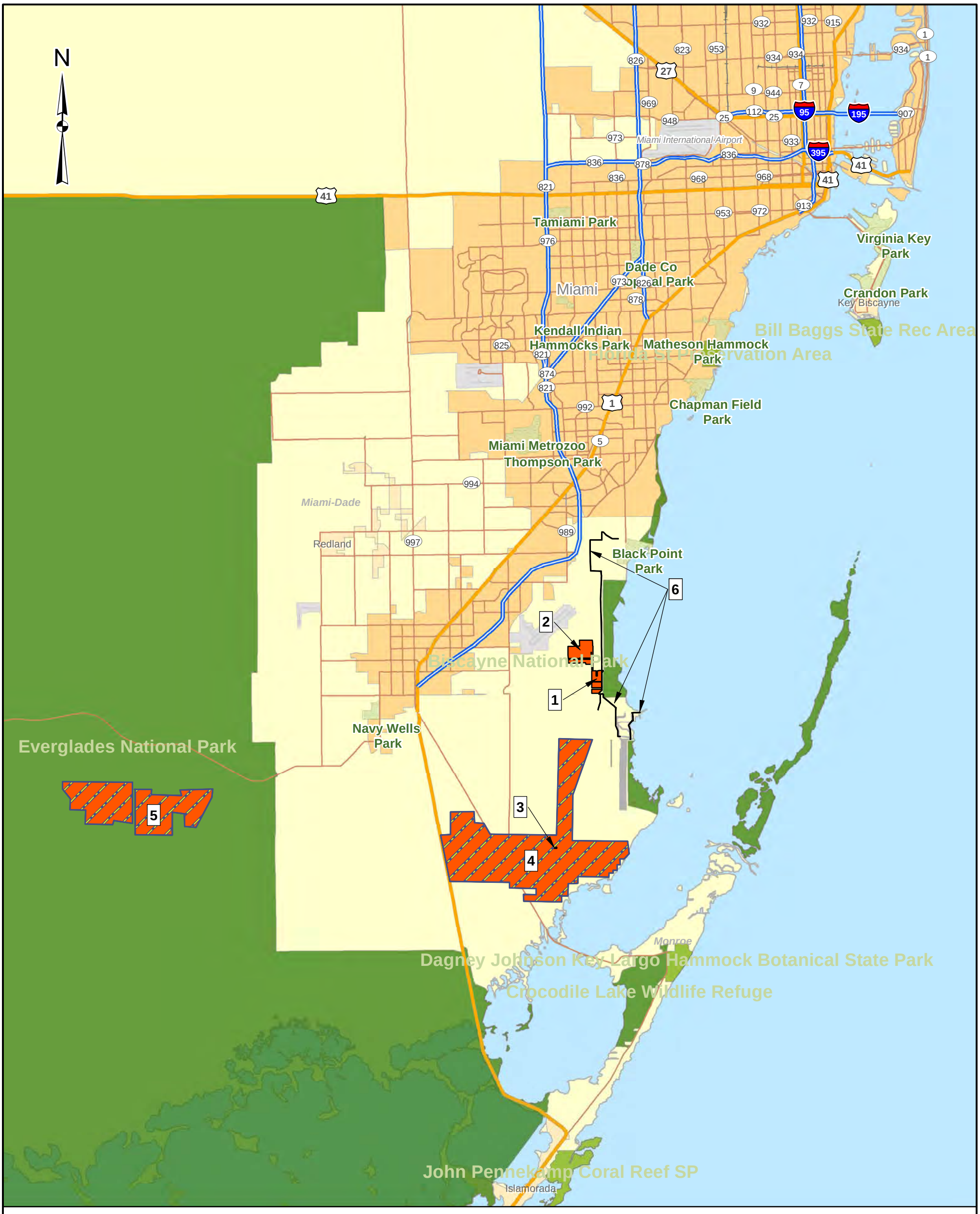
TITLE

PROPOSED FACILITIES TRANSMISSION

PROJECT

TURKEY POINT UNITS 6 & 7 PROJECT

FPL



LEGEND

- Mitigation Banks
- Mitigation Alternatives
  - 1 - Northwest Restoration Site
  - 2 - SW 320th Street Restoration Site
  - 3 - Sea Dade Canal Crocodile Sanctuary
  - 4 - Everglades Mitigation Bank
  - 5 - Hole in the Donut Mitigation Bank
  - 6 - Pipeline Restoration Areas

REFERENCES

1. Water Control Structures, SFWMD, 2003.
2. Mitigation Banks, FDEP, 2006.

0 2 4 Miles

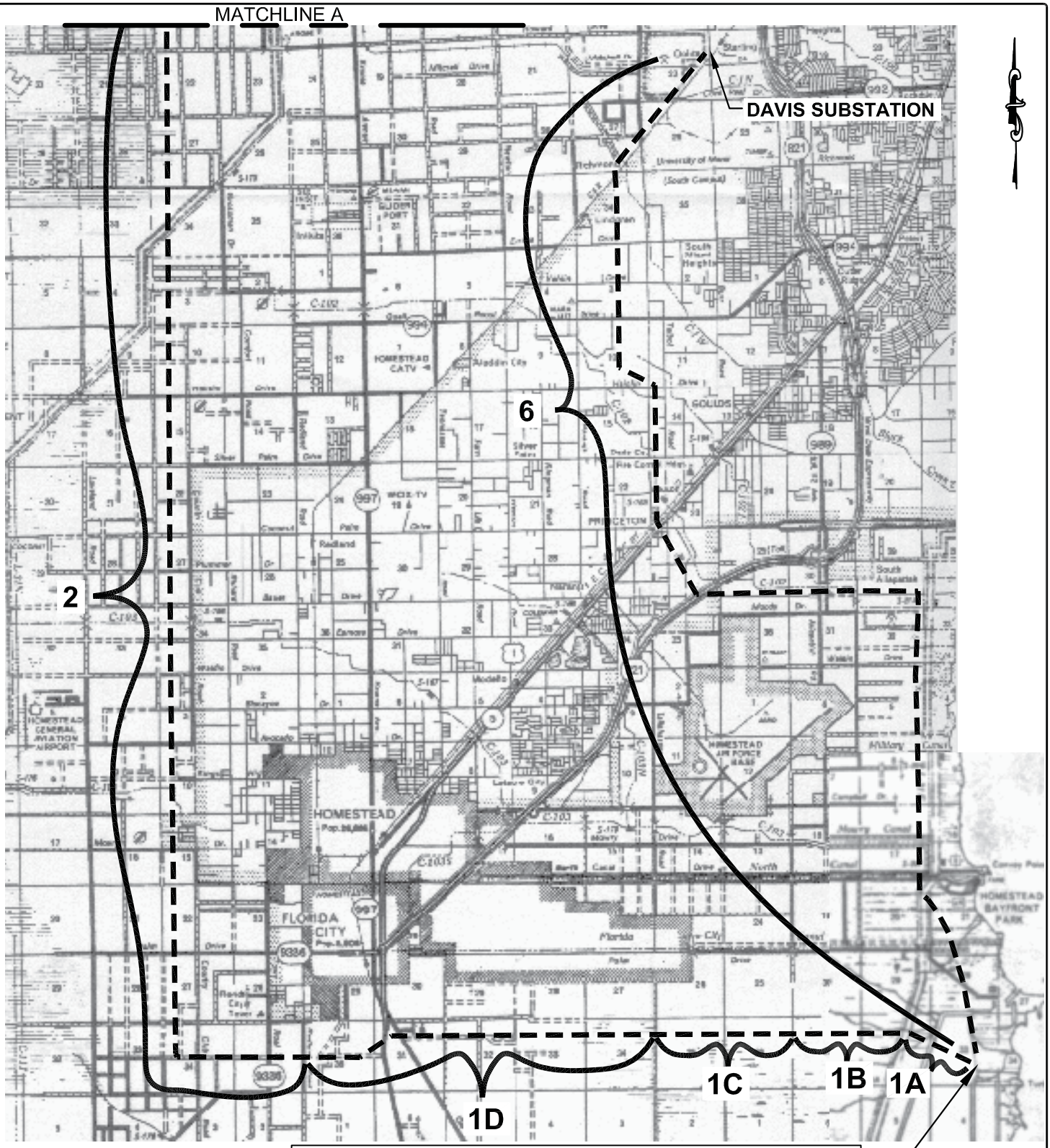
FIGURE 4

PLOT DATE 6/23/2011 | REV. 3 | FILE No. 08387584K001

TITLE: MITIGATION ALTERNATIVES LOCATION MAP

PROJECT: TURKEY POINT UNITS 6 & 7 PROJECT

FPL



0 1 2
SCALE: 1" ≈ 2 Miles

LEGEND
PROPOSED CORRIDORS FOR TRANSMISSION LINES
1B SEGMENT NUMBER

TURKEY POINT TRANSMISSION LINES

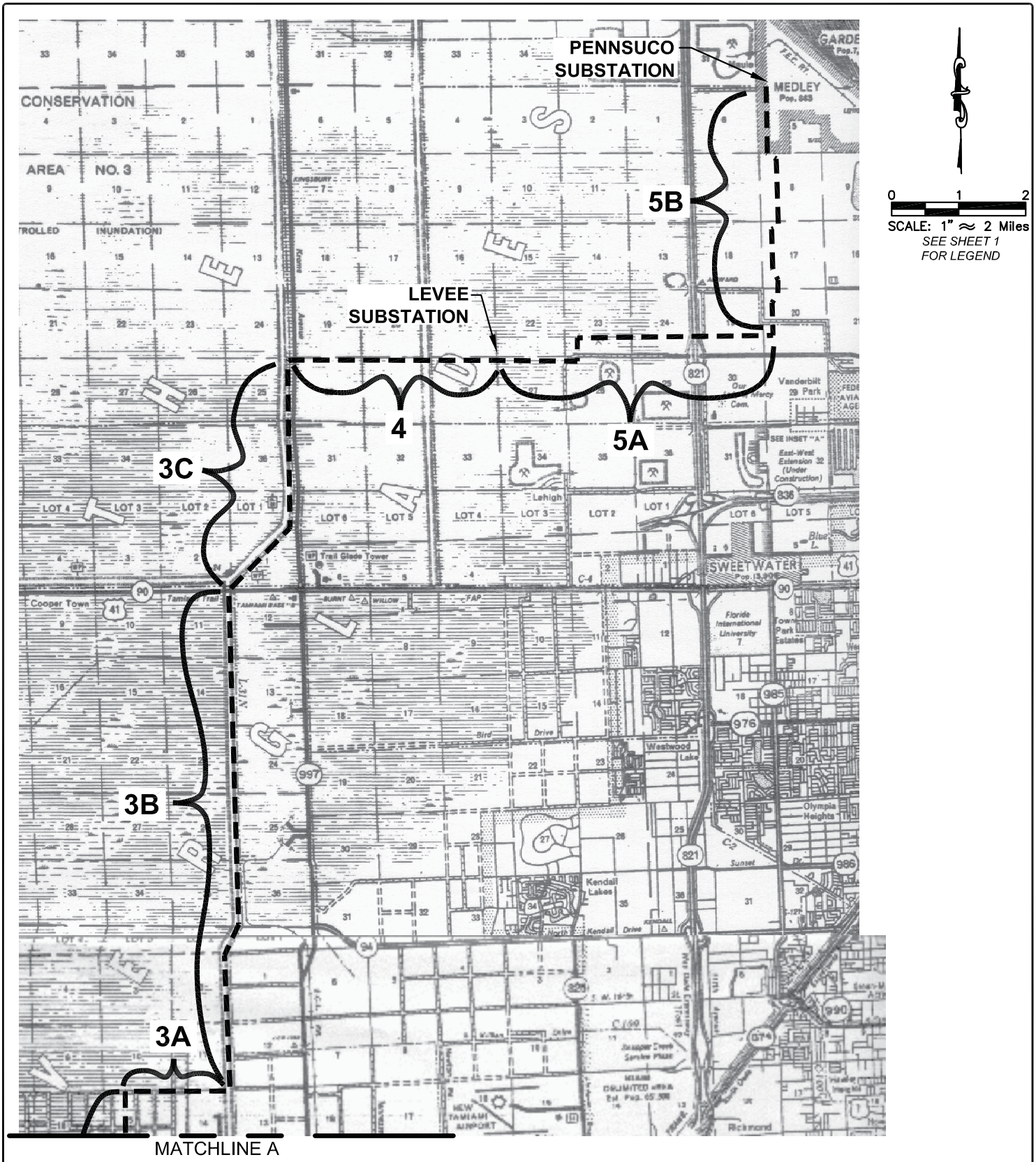
Figure 5 Sheet 1 of 2

Location of Transmission Line Corridors Showing Segments

Source: FDOT Highway Map, 1972.

FPL

Drawing file: TP FIGURE 1.dwg May 21, 2009 – 11:34am



Drawing file: TP FIGURE 1.dwg May 21, 2009 – 11:34am

TURKEY POINT
TRANSMISSION LINES

Figure 5

Sheet 2 of 2

Location of Transmission Line Corridors
Showing Segments

Source: FDOT Highway Map, 1972.

FPL

LEGEND

Northwest Restoration Site

REFERENCES

1. Imagery, Miami-Dade County 2007.

0 250 500 Feet

FIGURE 6

PLOT DATE 6/23/2011

REV. 3

FILE No. 08387584_K002

TITLE

NORTHWEST RESTORATION SITE AERIAL MAP

PROJECT

TURKEY POINT UNITS 6 & 7 PROJECT

FPL

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LEGEND

- Northwest Restoration Site
- Habitat Classification
- 511 - Ditches
- 612 - Mangrove Swamps
- 617 - Mixed Wetland Hardwoods
- 619-AP - Exotic Wetland Hardwoods-Australian Pine
- 641 - Freshwater Marshes
- 6411 - Sawgrass Marsh
- 655 - Periphyton Mat

REFERENCES

1. Imagery, Miami-Dade County 2007.
2. Habitat Classification, Golder Associates Inc., 2010.

0 250 500 Feet

FIGURE 7

PLOT DATE 6/23/2011 | REV. 3 | FILE No. 08387584_K003

TITLE

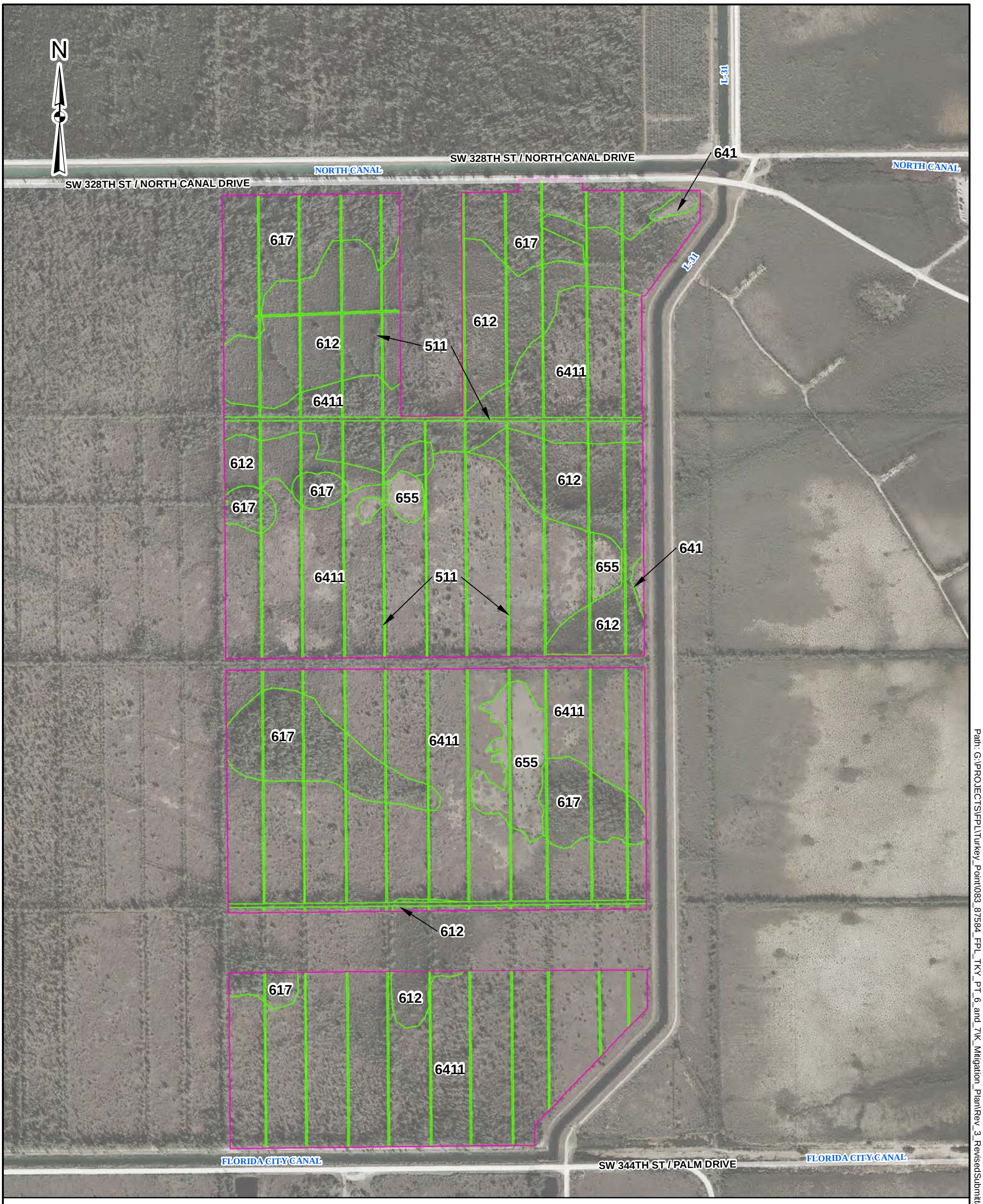
NORTHWEST RESTORATION SITE EXISTING LAND USE / LAND COVER

PROJECT

TURKEY POINT UNITS 6 & 7 PROJECT

FPL

Path: G:\PROJECTS\FPL\Turkey_Point\083_87584_FPL_TKY_PT_6_and_7\K_Mitigation_Plan\Rev_3_RevisedSubmittal_2011\MapDocuments\08387584_K003_Rev3NWRestSite_LU.mxd



LEGEND

- Northwest Restoration Site
- Habitat Classification
  - 511 - Ditches
  - 612 - Mangrove Swamps
  - 617 - Mixed Wetland Hardwoods
  - 641 - Freshwater Marshes
  - 655 - Periphyton Mat
  - 6411 - Sawgrass Marsh

REFERENCES

1. Imagery, Miami-Dade County 2007.
2. Habitat Classification, Golder Associates Inc., 2010.

0 250 500 Feet

FIGURE 8

PLOT DATE 6/23/2011

REV. 3

FILE No. 08387584_K004

TITLE

NORTHWEST RESTORATION SITE PROPOSED LAND USE / LAND COVER

PROJECT

TURKEY POINT UNITS 6 & 7 PROJECT

FPL

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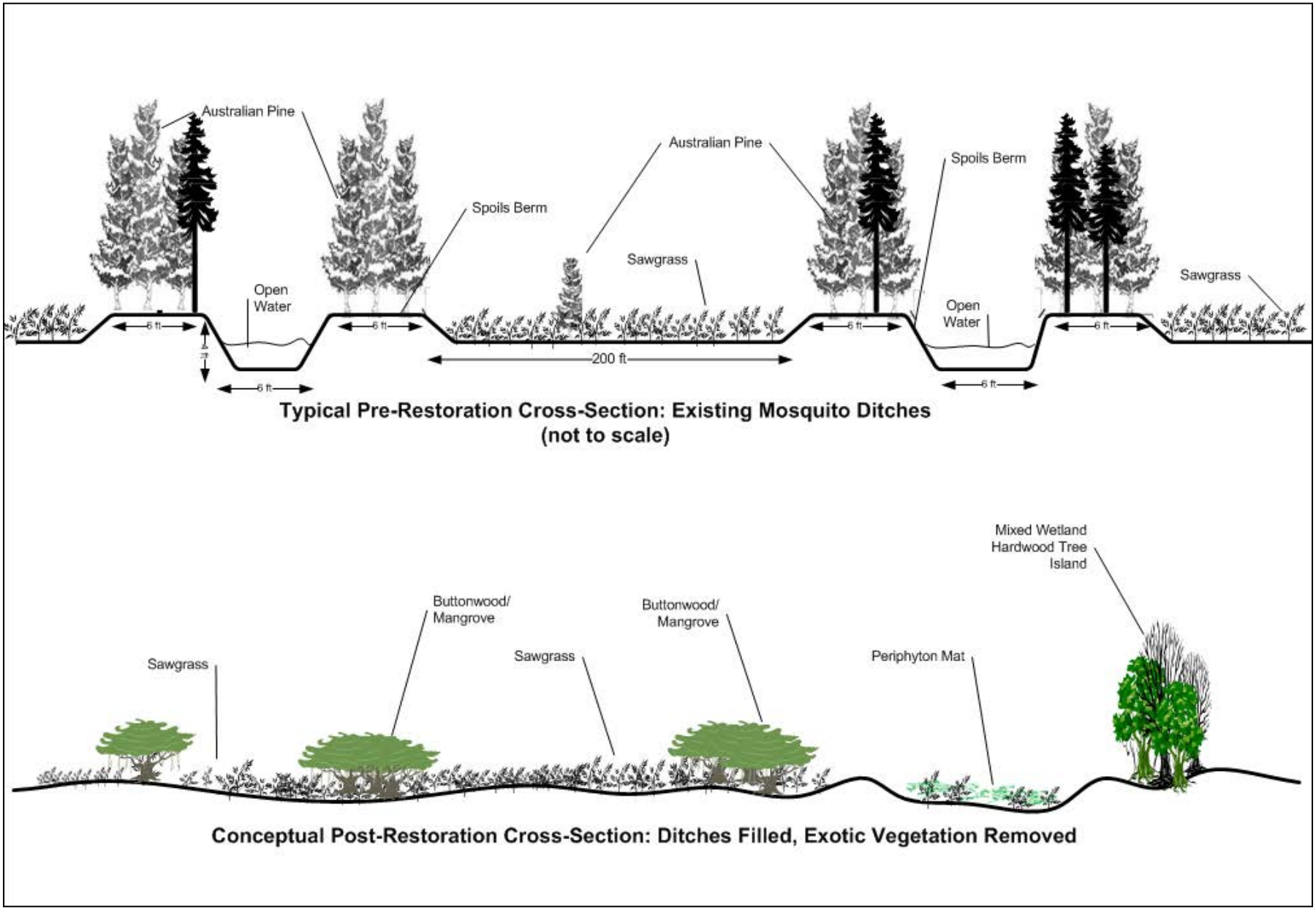


Figure 9.

Northwest Restoration Site Conceptual Cross Sections

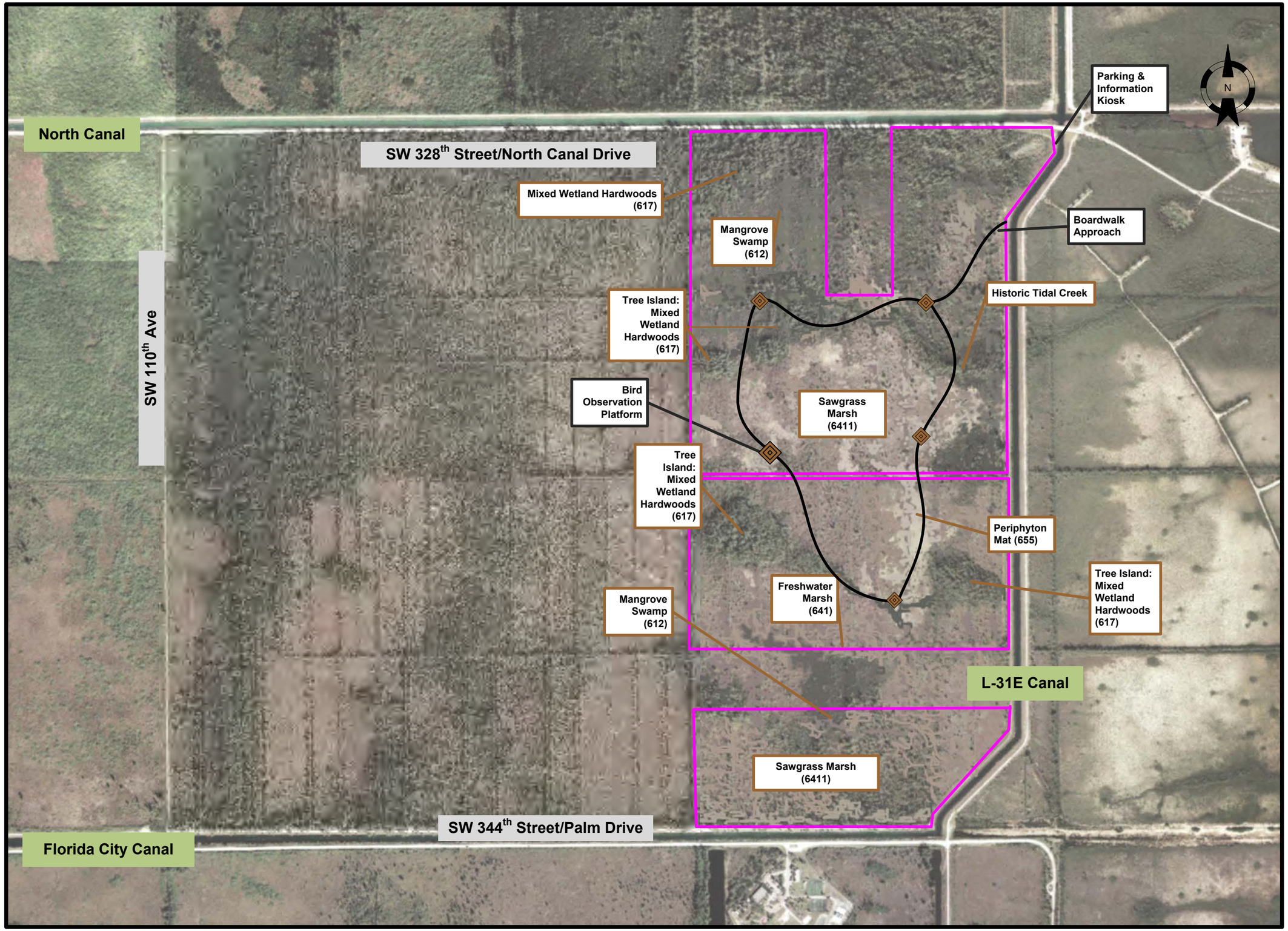
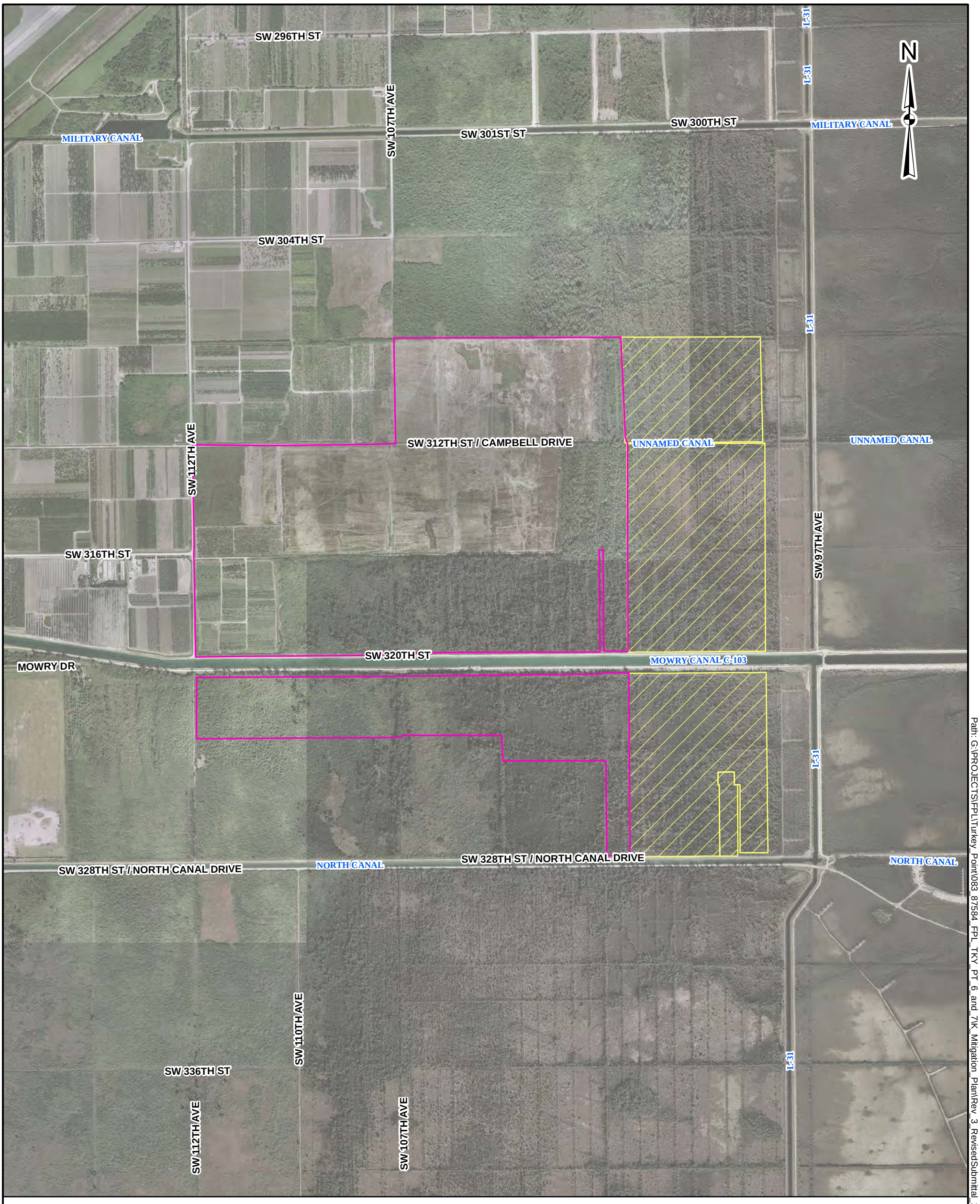


Figure 10. Northwest Restoration Site Conceptual Illustration (not to scale)

Y:\Projects\2009\093-87652 FPL TP 6 & 7\Northwest Mitigation Site\Figure 6 Rev. 2

Site Boundary

FPL



LEGEND

- SW 320th Street Restoration Site
- Lands Previously Transferred to the State by FPL

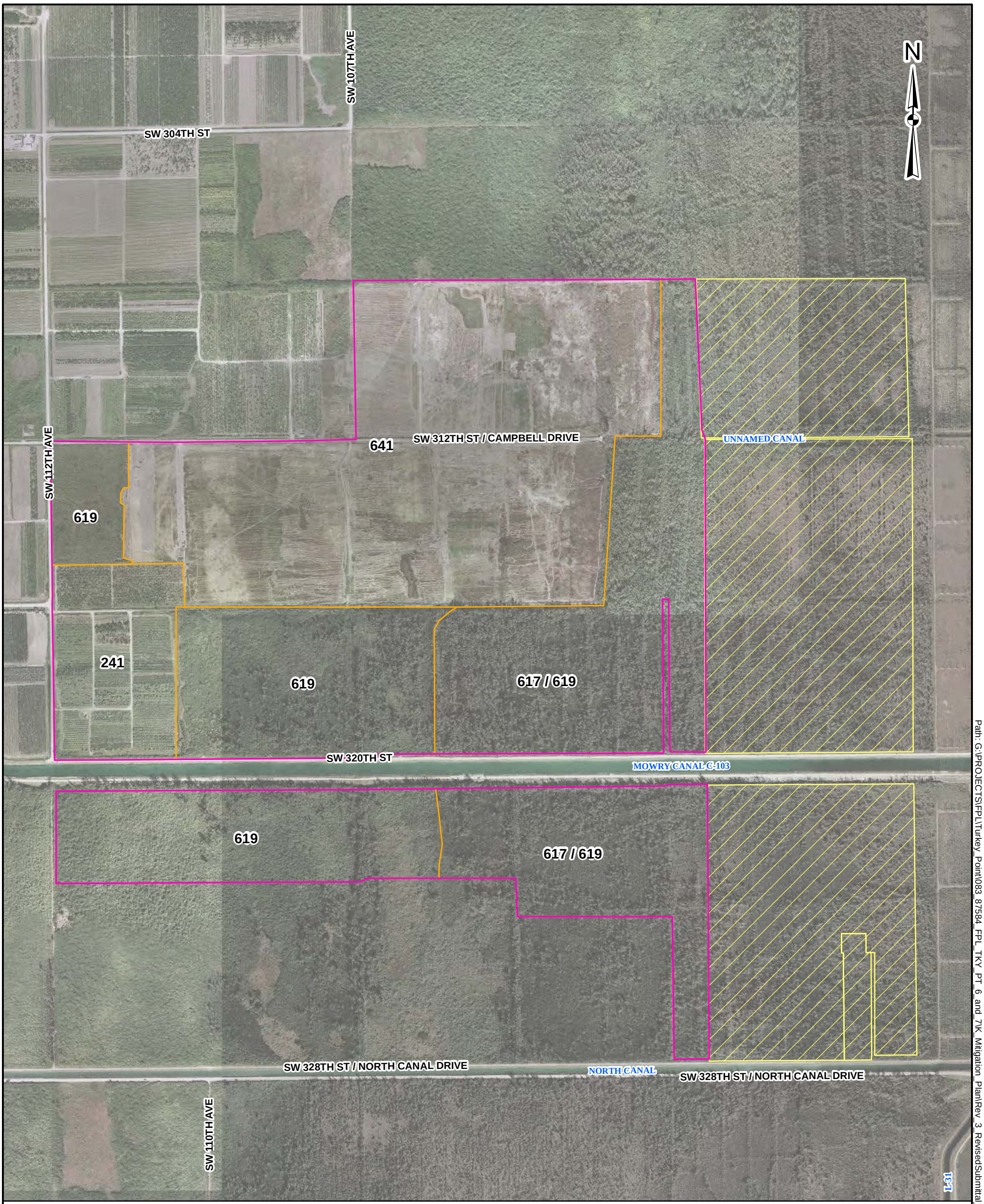
REFERENCES

1. Imagery, Miami-Dade County 2007.
2. SW 320th Restoration Site, Golder Associates Inc., 2010,

0 600 1,200 Feet

Path: G:\PROJECTS\FPL\Turkey_Point\083_87584_FPL_TKY_PT_6_and_7\K_Mitigation_Plan\Rev_3_RevisedSubmittal_2011\MapDocuments\08387584_K005_Rev3320RestSite_Aerial.mxd

FIGURE 11	PLOT DATE 6/23/2011	REV. 3	FILE No. 08387584_K005	TITLE: SW 320TH STREET RESTORATION SITE AERIAL MAP	PROJECT: TURKEY POINT UNITS 6 & 7 PROJECT	FPL



LEGEND

- SW 320th Street Restoration Site
- Habitat Classification
  - 241 - Tree Nurseries
  - 617 / 619 - Mixed Wetland Hardwoods / Exotic Wetland Hardwoods
  - 619 - Exotic Wetland Hardwoods
  - 641 - Freshwater Marshes
- Lands Previously Transferred to the State by FPL

REFERENCES

1. Imagery, Miami-Dade County 2007.
2. SW 320th Restoration Site, Habitat Classification, Golder Associates Inc., 2010,

0 400 800 Feet

FIGURE 12

PLOT DATE 6/23/2011

REV. 3

FILE No. 08387584_K006

TITLE

SW 320TH STREET RESTORATION SITE EXISTING LAND USE / LAND COVER

PROJECT

TURKEY POINT UNITS 6 & 7 PROJECT

FPL

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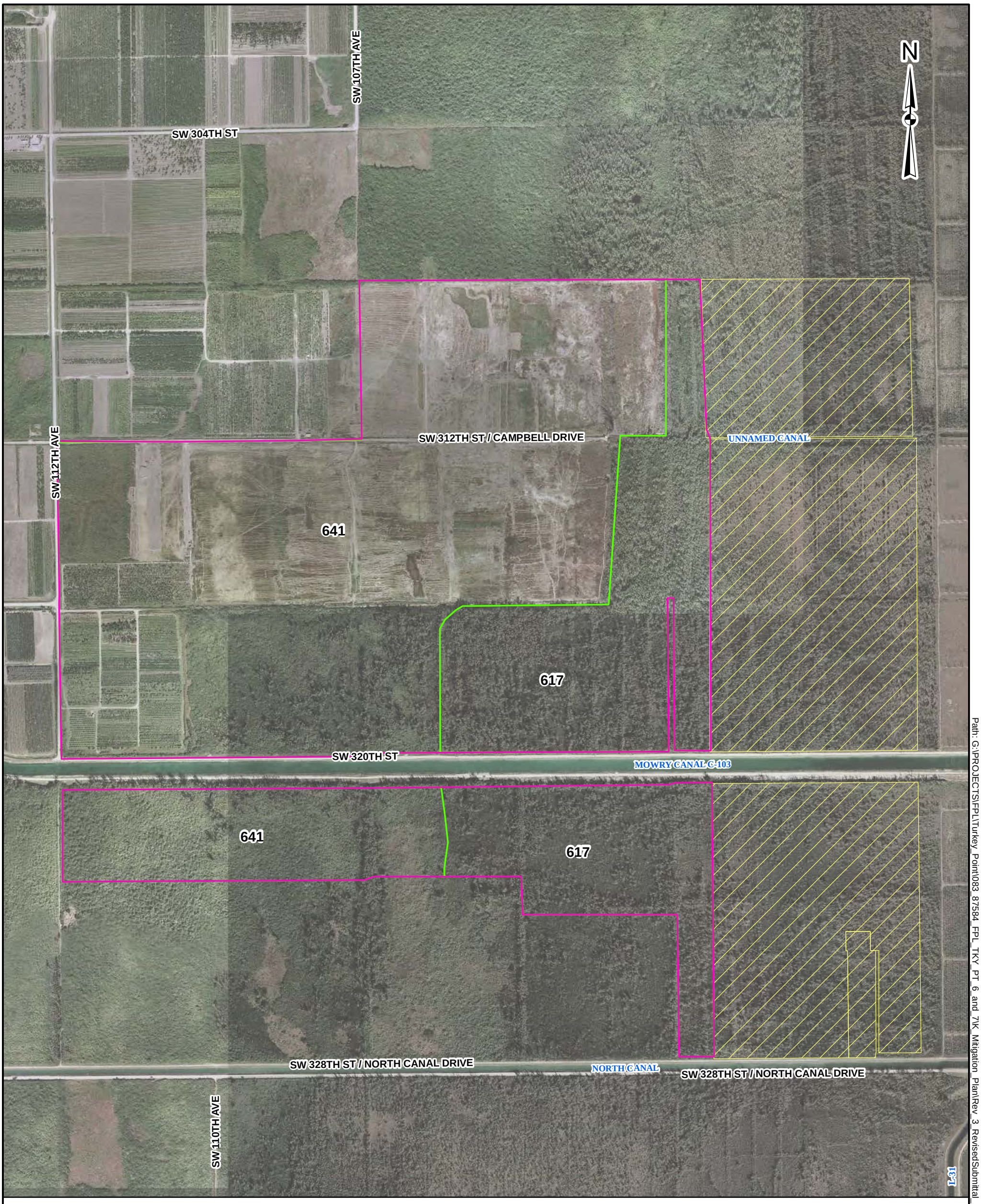

LEGEND

- SW 320th Street Restoration Site
- Habitat Classification
  - 617 - Mixed Wetland Hardwoods
  - 641 - Freshwater Marshes
- Lands Previously Transferred to the State by FPL

REFERENCES

1. Imagery, Miami-Dade County 2007.
2. SW 320th Restoration Site, Habitat Classification, Golder Associates Inc., 2010,

0 400 800 Feet

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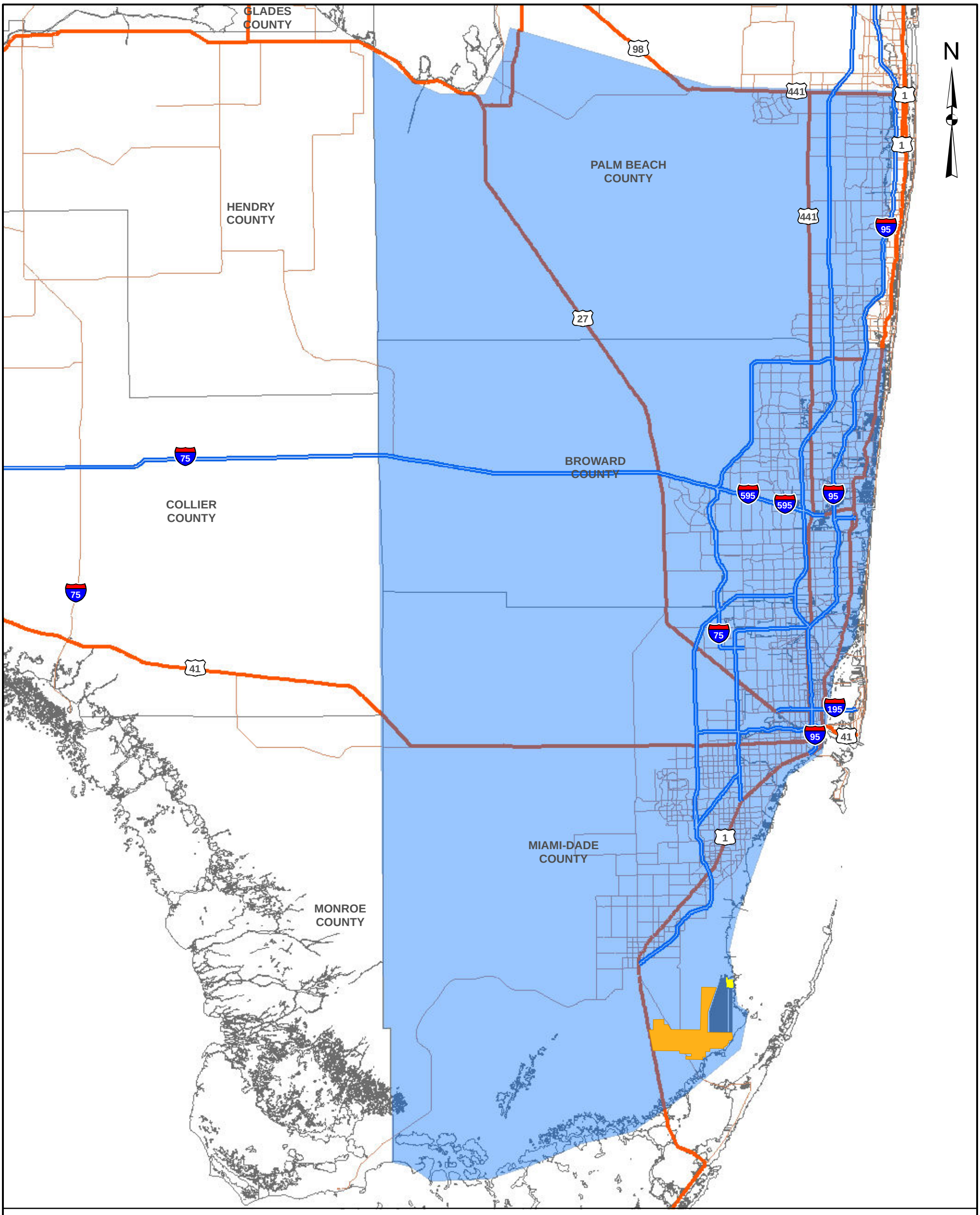
FIGURE 13	PLOT DATE 6/23/2011	REV. 3	FILE No. 08387584_K007	TITLE: SW 320TH STREET RESTORATION SITE PROPOSED LAND USE / LAND COVER	PROJECT: TURKEY POINT UNITS 6 & 7 PROJECT	FPL



LEGEND

- Turkey Point Units 6 & 7 Site
- Everglades Mitigation Bank
- Everglades Mitigation Bank Service Area

REFERENCES

1. Everglades Mitigation Bank Service Area, FDEP, 2006.
2. Everglades Mitigation Bank, FDEP, 2006.

0 4.5 9 Miles

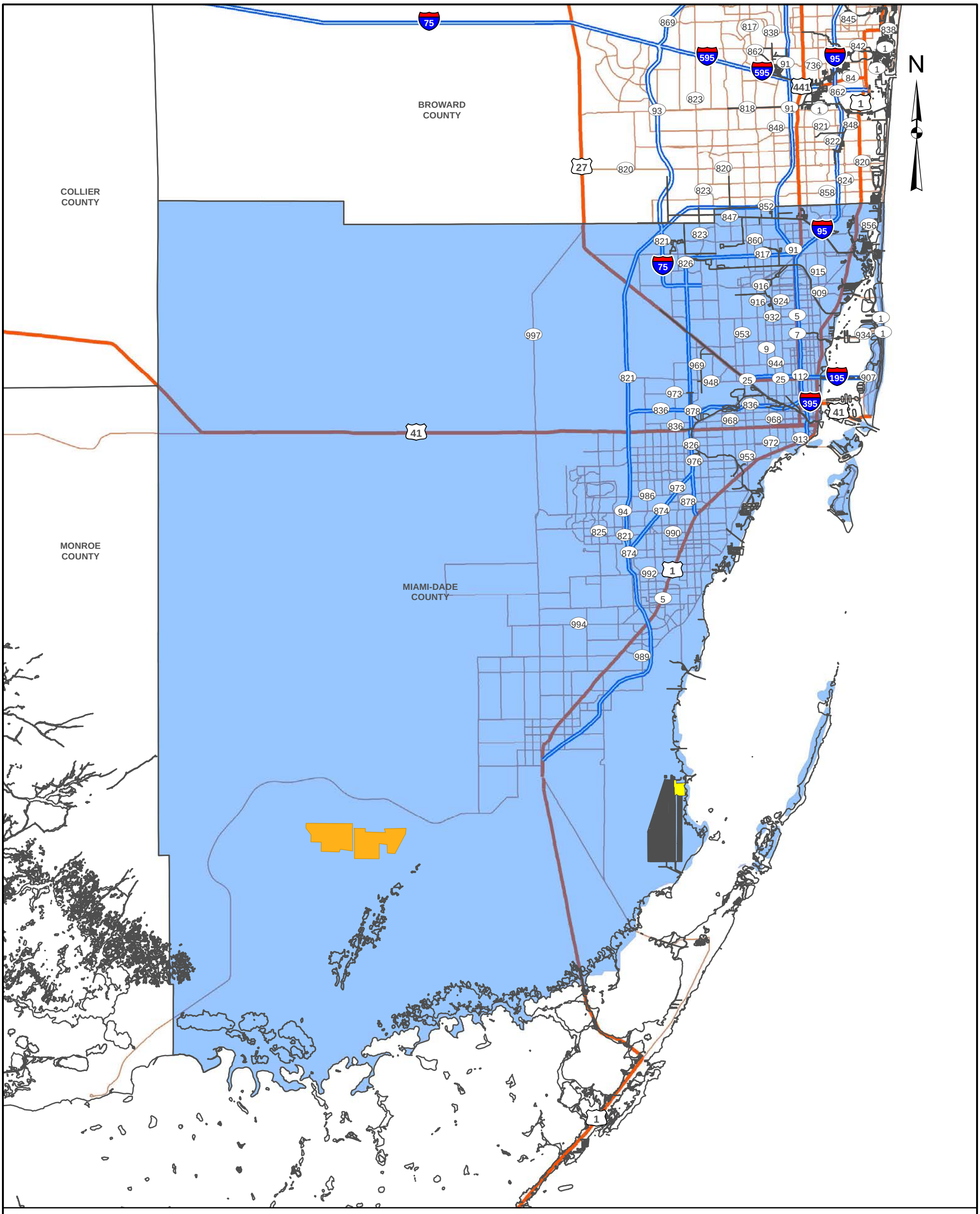
FIGURE 14

PLOT DATE 8/23/2012
REV. 3
FILE No. 08387584K014

TITLE
EVERGLADES MITIGATION BANK SERVICE AREA

PROJECT
TURKEY POINT UNITS 6 & 7 PROJECT

FPL



LEGEND

- Turkey Point Units 6 & 7 Site
- Hole in the Donut Mitigation Bank
- Hole in the Donut Mitigation Bank Service Area

REFERENCES

1. Hole in the Donut Mitigation Bank Service Area, Hole in the Donut Mitigation Bank, FDEP, 2006.

0 3 6 Miles

FIGURE 15

PLOT DATE 8/21/2012

REV. 3

FILE No. 083875B4K015

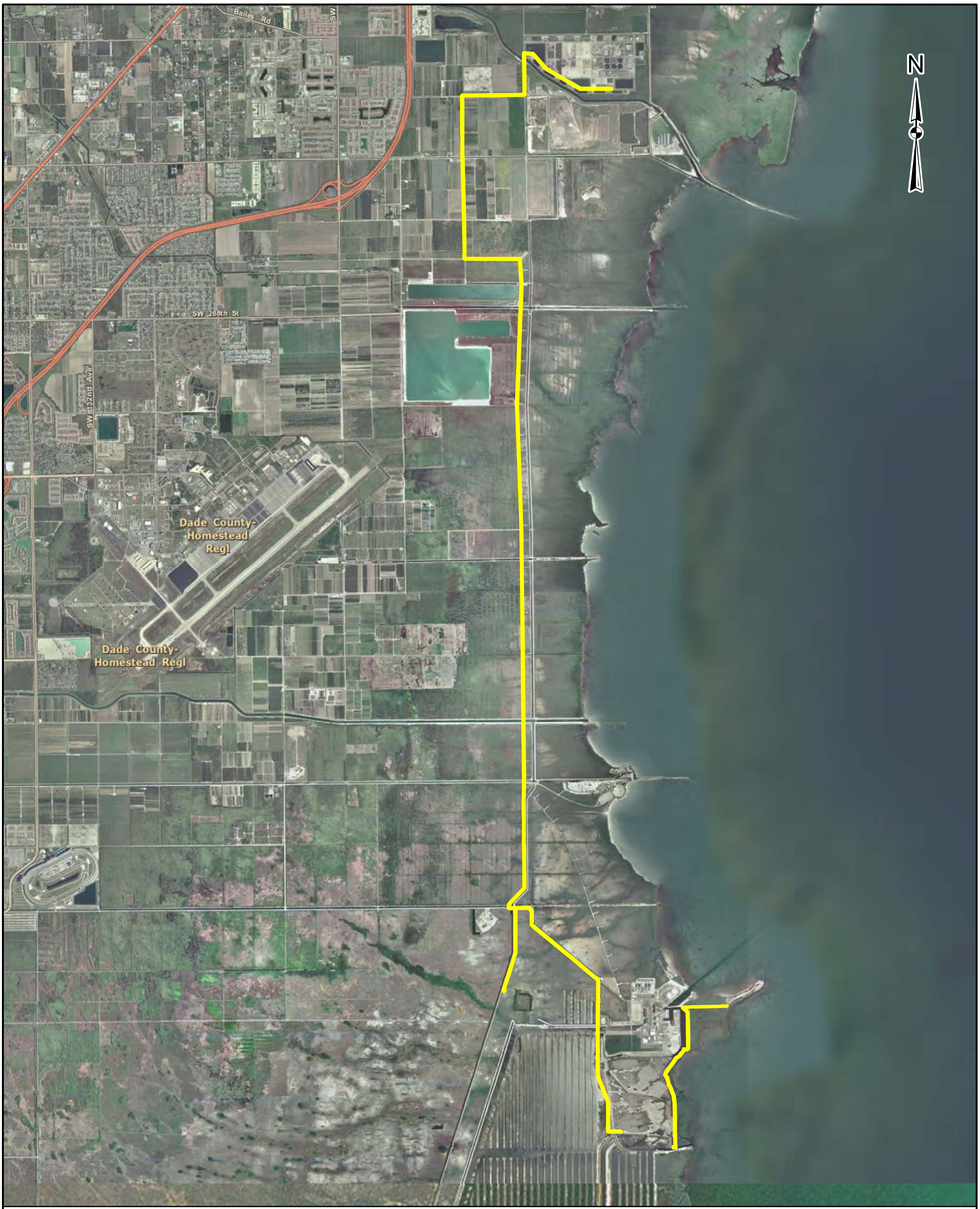
TITLE

HOLE IN THE DONUT MITIGATION BANK SERVICE AREA

PROJECT

TURKEY POINT UNITS 6 & 7 PROJECT

FPL



LEGEND

Pipeline Restoration Areas

REFERENCES

1. Imagery, Miami-Dade County, 2007.

0 2,000 4,000
Feet

FIGURE 16	PLOT DATE 6/23/2011	REV. 3	FILE No. 08387584K016	TITLE PIPELINE RESTORATION AERIAL MAP	PROJECT TURKEY POINT UNITS 6 & 7 PROJECT	FPL

LEGEND

Sea Dade Canal Crocodile Sanctuary

REFERENCES

1. Imagery, Miami-Dade County, 2007.

0 1,000 2,000 Feet

FIGURE 17	PLOT DATE 6/23/2011	REV. 3	FILE No. 08387584K018	TITLE: SEA DADE CANAL CROCODILE SANCTUARY AERIAL MAP	PROJECT: TURKEY POINT UNITS 6 & 7 PROJECT	FPL

LEGEND

- Sea Dade Canal Crocodile Sanctuary
- Habitat Classification
  - 534 - Reservoirs less than 10 acres
  - 612-B - Dwarf Mangroves
  - 617 - Mixed Wetland Hardwoods
  - 6411 - Sawgrass
  - 744 - Fill Areas
  - 814 - Roads and Highways
  - 831 - Electrical Power Facilities

REFERENCES

1. Sea Dade Canal Crocodile Snctuary, FPL, 2010
2. Land Use / Land Cover, Golder Asscociates Inc., 2011.
3. Imagery, ESRI Online Imagery Accessed 2011.

0 125 Feet

FIGURE 18

PLOT DATE 6/23/2011
REV. 3
FILE No. 08387584K023

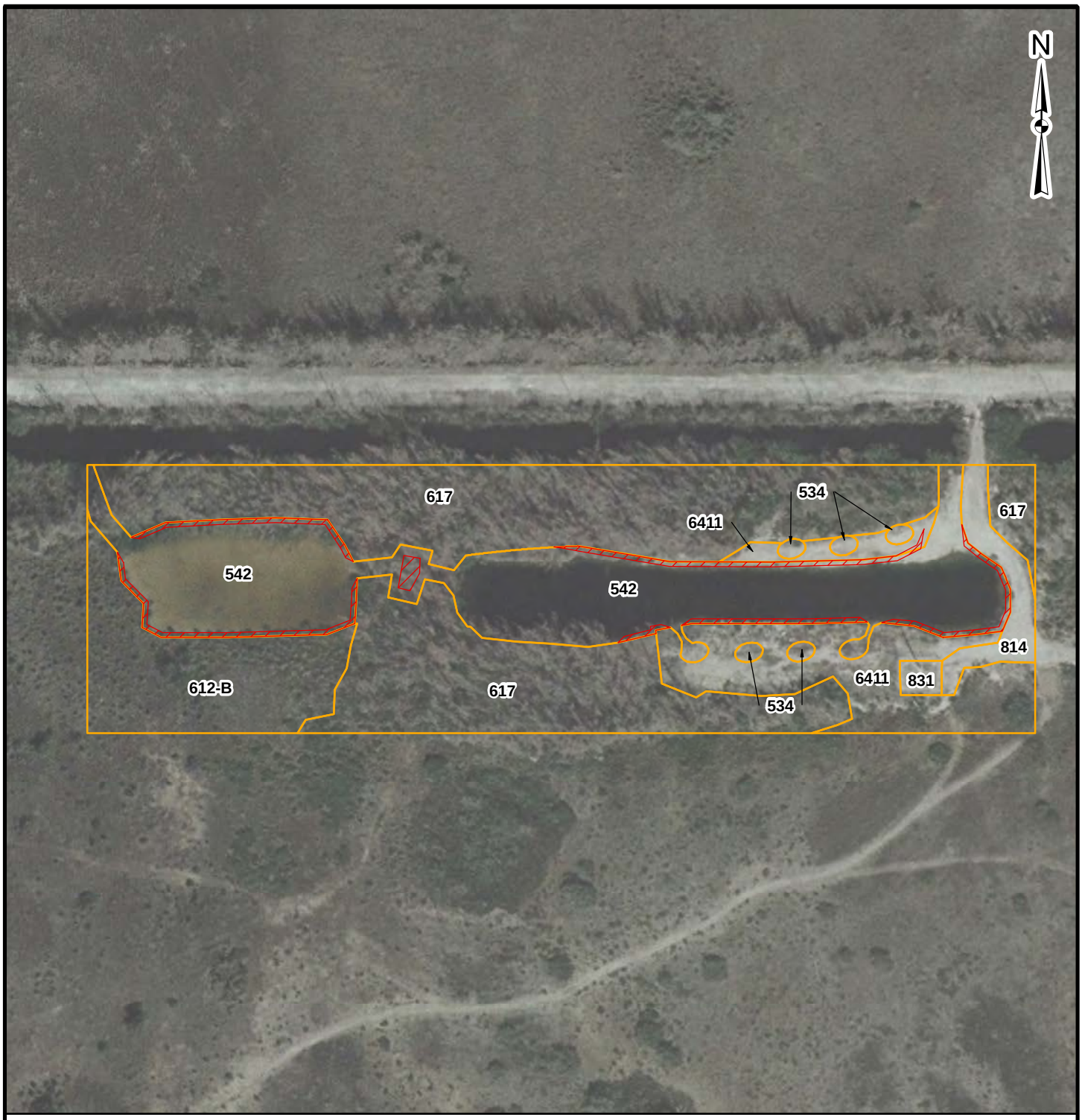
TITLE

SEA DADE CANAL CROCODILE SANCTUARY EXISTING LAND USE / LAND COVER

PROJECT

TURKEY POINT UNITS 6 & 7 PROJECT

FPL



LEGEND

- Nesting Substrate
- Post Restoration Land Use
  - 534 - Low Salinity Ponds
  - 542 - Saline Lagoon
  - 612-B - Dwarf Mangroves
  - 617 - Mixed Wetland Hardwoods
  - 6411 - Sawgrass
  - 814 - Roads and Highways
  - 831 - Electrical Power Facilities

150 0 Feet

REFERENCES

1. Aerial Imagery, FDOT, 2007.
2. Sea Dade Canal Crocodile Sanctuary, Nesting Substrate, Golder Associates Inc., 2011.

PROJECT

TURKEY POINT UNITS 6 & 7 PROJECT

TITLE

SEA DADE CANAL CROCODILE SANCTUARY CONCEPTUAL DESIGN

FPL

FILE No. 08387584_K028

REV. 0

PLOT DATE 6/16/2011

FIGURE

19

APPENDIX A

UMAM FUNCTIONAL ASSESSMENT

IMPACT SITES

PART I – Qualitative Description
(See Section 62-345.400, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
FPL Turkey Point Units 6 & 7/Site		Remnant Canals

FLUCCs code	Further classification (optional)	Impact or Mitigation Site?	Assessment Area Size
511		Impact	8.4 acres

Basin/Watershed Name/Number	Affected Waterbody (Class)	Special Classification (i.e.OFW, AP, other local/state/federal designation of importance)
DA-4/03090202		

Geographic relationship to and hydrologic connection with wetlands, other surface water, uplands

Part of a closed loop industrial cooling water system.

Assessment area description

Remnant intake/discharge canals within surrounding mud flats.

Significant nearby features	Uniqueness (considering the relative rarity in relation to the regional landscape.)
FPL Turkey Point power generation facilities, Biscayne Bay	Artificial system, not unique.

Functions	Mitigation for previous permit/other historic use
Industrial cooling water management	

Anticipated Wildlife Utilization Based on Literature Review (List of species that are representative of the assessment area and reasonably expected to be found)	Anticipated Utilization by Listed Species (List species, their legal classification (E, T, SSC), type of use, and intensity of use of the assessment area)
Wading birds, shorebirds, forage fishes	Occasional use by wading birds such as roseate spoonbill (SSC), white ibis (SSC), wood stork (E), reddish egret (SSC), snowy egret (SSC) and tricolored heron (SSC) as well as white-crowned pigeon (T).

Observed Evidence of Wildlife Utilization (List species directly observed, or other signs such as tracks, droppings, casings, nests, etc.):

Reddish egret, snowy egret, tricolored heron, roseate spoonbill, white pelican, white ibis, killdeer, great egret, great horned owl, sandpipers, lesser yellowlegs, greater yellowlegs, least tern, and plovers.

Additional relevant factors:

Assessment conducted by:	Assessment date(s):
K. Bullock, C. Cunningham	11/29/2007

Form 62-345.900(1), F.A.C. [effective date]

PART II – Quantification of Assessment Area (impact or mitigation)
(See Sections 62-345.500 and .600, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
FPL Turkey Point Units 6 & 7/Site		Remnant Canals
Impact or Mitigation	Assessment conducted by:	Assessment date:
Impact	K. Bullock, C. Cunningham	11/29/2007

Scoring Guidance	Optimal (10)	Moderate(7)	Minimal (4)	Not Present (0)
The scoring of each indicator is based on what would be suitable for the type of wetland or surface water assessed	Condition is optimal and fully supports wetland/surface water functions	Condition is less than optimal, but sufficient to maintain most wetland/surface waterfunctions	Minimal level of support of wetland/surface water functions	Condition is insufficient to provide wetland/surface water functions

.500(6)(a) Location and Landscape Support	w/o pres or current	with	Location and landscape support variable is reduced due to proximity of existing Turkey Point facility, disturbance of habitat associated with cooling canal system, and isolated hydrology. Individual parameter scores: a) Support to wildlife listed in Part 1 by outside habitats = 8 due to proximity of Biscayne Bay despite artificial nature of surrounding habitat at FPL facility; b) Invasive exotic species = 9, minimal coverage; c) Wildlife access to and from outside = 7, decreased slightly due to limitations imposed by the water level control system; d) functions that benefit fish & wildlife downstream-distance or barriers = 4 because this is a closed system; e) Impacts to wildlife listed in Part 1 by outside land uses = 8, slightly reduced due to surrounding habitat loss; f) Hydrologically connected areas downstream of assessment area = 2 due to closed system; g) Dependency of downstream areas on assessment area = 4, little benefit to downstream areas
	6	0	
.500(6)(b)Water Environment (n/a for uplands)	w/o pres or current	with	The water environment score is reduced due to the artificial hydrology of the assessment site and use for industrial cooling water. Individual parameter scores: a) water levels and flows = 4, drastic alterations in water level due to artificial nature of the system; b) water level indicators = 4, not consistent with expected; c) soil moisture = 7, slightly drier than expected; d) soil erosion or depostion = 4, atypical patterns indicative of altered flows; e) evidence of fire history = N/A; f) vegetation community zonation = 8, appropriate for community type; g) hydrologic stress on vegetation = 7, slightly greater mortality; h) use by animal species with specific hydrological requirements = 7, due to lack of tidal connection and resultant reduction in number of fish species; i) vegetative species tolerant of and associated with water quality degradation = 8, community not characterized by species tolerant of water degradation; j) direct observation of water quality = 8, very slight discoloration, turbidity, or sheen; k) existing water quality data = 5, due to high temperature and salinity; l) water depth wave, wave energy, currents and light penetration = 5, due to drastic changes in water levels.
	6	0	
.500(6)(c)Community structure 1. Vegetation and/or 2. Benthic Community	w/o pres or current	with	The community structure variable is reduced due to artificial nature of excavated canals, high salinity, elevated temperature, and hydrologic isolation. Individual parameter scores: a) plant community species in the canopy, shrub, or ground stratum = 8, dominated by native species; b) invasive exotics or other invasive plant species = 7, minimal coverage; c) regeneration and recruitment = 7, near normal recruitment; d) age & size distribution = 7, slightly atypical; e) density and quality of coarse woody debris, snag, den, and cavity = 5, due to excavated canal banks; f) plant condition = 7, generally good plant condition; g) land management practices = 5, due to alteration of community structure and hydroperiod; h) topographic features = 5, less than optimal; i) siltation or algal growth in submerged aquatic plant communities = 7, minor algal growth
	7	0	

Score = sum of above scores/30 (if uplands, divide by 20)	
current or w/o pres	with
0.63	0

Delta = [with-current]
-0.63

If preservation as mitigation,
Preservation adjustment factor =
Adjusted mitigation delta =

If mitigation
Time lag (t-factor) =
Risk factor =

For impact assessment areas
FL = delta x acres = -0.63 x 8.4 = **5.29**

For mitigation assessment areas
RFG = delta/(t-factor x risk) =

Form 62-345.900(2), F.A.C. [effective date]

PART I – Qualitative Description
(See Section 62-345.400, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
FPL Turkey Point Units 6 & 7/Site		Open Water and Active Canals

FLUCCs code	Further classification (optional)	Impact or Mitigation Site?	Assessment Area Size
531 and 510		Impact	12 acres (FLUCCS 531); 4.1 acres (FLUCCS 510) = 16.1 acres

Basin/Watershed Name/Number	Affected Waterbody (Class)	Special Classification (i.e.OFW, AP, other local/state/federal designation of importance)
DA-4/03090202		

Geographic relationship to and hydrologic connection with wetlands, other surface water, uplands

Part of Turkey Point facility's existing industrial cooling water system.

Assessment area description

Open water area associated with industrial cooling water system.

Significant nearby features	Uniqueness (considering the relative rarity in relation to the regional landscape.)
FPL Turkey Point power generation facilities, Biscayne Bay	Artificial system, not unique.

Functions	Mitigation for previous permit/other historic use
Industrial cooling water management	

Anticipated Wildlife Utilization Based on Literature Review (List of species that are representative of the assessment area and reasonably expected to be found)	Anticipated Utilization by Listed Species (List species, their legal classification (E, T, SSC), type of use, and intensity of use of the assessment area)
Wading birds, shorebirds, forage fishes	Occasional use by wading birds such as roseate spoonbill (SSC), white ibis (SSC), little blue heron (SSC), wood stork (E), reddish egret (SSC), snowy egret (SSC) and tricolored heron (SSC).

Observed Evidence of Wildlife Utilization (List species directly observed, or other signs such as tracks, droppings, casings, nests, etc.):

Snowy egret, tricolored heron, wood stork, white ibis, killdeer, great egret.

Additional relevant factors:

Assessment conducted by:	Assessment date(s):
K. Bullock, C. Cunningham	11/29/2007

Form 62-345.900(1), F.A.C. [effective date]

PART II – Quantification of Assessment Area (impact or mitigation)
(See Sections 62-345.500 and .600, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
FPL Turkey Point Units 6 & 7/Site		Open Water and Active Canals
Impact or Mitigation	Assessment conducted by:	Assessment date:
Impact	K. Bullock, C. Cunningham	11/29/2007

Scoring Guidance	Optimal (10)	Moderate(7)	Minimal (4)	Not Present (0)
The scoring of each indicator is based on what would be suitable for the type of wetland or surface water assessed	Condition is optimal and fully supports wetland/surface water functions	Condition is less than optimal, but sufficient to maintain most wetland/surface waterfunctions	Minimal level of support of wetland/surface water functions	Condition is insufficient to provide wetland/surface water functions

.500(6)(a) Location and Landscape Support	w/o pres or current: 6	with: 0

Location and landscape support variable is reduced due to proximity of existing Turkey Point facility, disturbance of habitat associated with cooling canal system, and isolated hydrology. Individual parameter scores: a) Support to wildlife listed in Part 1 by outside habitats = 8 due to proximity of Biscayne Bay despite artificial nature of surrounding habitat at FPL facility; b) Invasive exotic species = 9, minimal coverage; c) Wildlife access to and from outside = 7, decreased slightly due to limitations imposed by the water level control system; d) functions that benefit fish & wildlife downstream-distance or barriers = 4 because this is a closed system; e) Impacts to wildlife listed in Part 1 by outside land uses = 8, slightly reduced due to surrounding habitat loss; f) Hydrologically connected areas downstream of assessment area = 2 due to closed system; g) Dependency of downstream areas on assessment area = 4, little benefit to downstream areas

.500(6)(b)Water Environment (n/a for uplands)	w/o pres or current: 5	with: 0

The water environment score is reduced due to the artificial hydrology of the assessment site and use for industrial cooling water.

Individual parameter scores: a) water levels and flows = 3, drastic alterations in water level due to artificial nature of the system; b) water level indicators = 3, not consistent with expected; c) soil moisture = 7, slightly drier than expected; d) soil erosion or depostion = 3, atypical patterns indicative of altered flows; e) evidence of fire history = N/A; f) vegetation community zonation = 6, due to very sparse cover; g) hydrologic stress on vegetation = 3, due to high mortality; h) use by animal species with specific hydrological requirements = 6, due to lack of tidal connection and resultant reduction in number of fish species; i) vegetative species tolerant of and associated with water quality degradation = 7, community consists of species tolerant of high salinities; j) direct observation of water quality = 8, very slight discoloration, turbidity, or sheen; k) existing water quality data = 3, due to high temperature and salinity; l) water depth wave, wave energy, currents and light penetration = 5, due to drastic changes in water levels.

.500(6)(c)Community structure 1. Vegetation and/or 2. Benthic Community	w/o pres or current: 4	with: 0

The community structure variable is reduced due to low species diversity resulting from high salinity, elevated temperature, and hydrologic isolation. Individual parameter scores: a) plant community species in the canopy, shrub, or ground stratum = 4, expected composition absent; b) invasive exotics or other invasive plant species = 7, minimal coverage; c) regeneration and recruitment = 4, minimal evidence of recruitment; d) age & size distribution = 4, due to high mortality and lack of seedling success; e) density and quality of coarse woody debris, snag, den, and cavity = 3, greater than normal due to poor community health; f) plant condition = 5, generally poor condition and low recruitment; g) land management practices = 4, due to high temperature and altered hydroperiod; h) topographic features = 3, less than optimal; i) siltation or algal growth in submerged aquatic plant communities = 5, minor algal growth

Score = sum of above scores/30 (if uplands, divide by 20)	
current or w/o pres: 0.50	with: 0

Delta = [with-current]
-0.50

If preservation as mitigation,
Preservation adjustment factor =
Adjusted mitigation delta =

If mitigation
Time lag (t-factor) =
Risk factor =

For impact assessment areas
FL = delta x acres = -0.50 x 16.1 = **8.05**

For mitigation assessment areas
RFG = delta/(t-factor x risk) =

Form 62-345.900(2), F.A.C. [effective date]

PART I – Qualitative Description
(See Section 62-345.400, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
FPL Turkey Point Units 6 & 7/Site		Mangrove Heads

FLUCCs code	Further classification (optional)	Impact or Mitigation Site?	Assessment Area Size
612-A		Impact	12.2 acres

Basin/Watershed Name/Number	Affected Waterbody (Class)	Special Classification (i.e.OFW, AP, other local/state/federal designation of importance)
DA-4/03090202		

Geographic relationship to and hydrologic connection with wetlands, other surface water, uplands

Part of Turkey Point facility's existing industrial cooling water system.

Assessment area description

Remnant mangrove heads associated with remnant tidal creeks within an industrial cooling water system.

Significant nearby features	Uniqueness (considering the relative rarity in relation to the regional landscape.)
FPL Turkey Point power generation facilities, Biscayne Bay	Artificial system, not unique.

Functions	Mitigation for previous permit/other historic use
Industrial cooling water management	

Anticipated Wildlife Utilization Based on Literature Review (List of species that are representative of the assessment area and reasonably expected to be found)	Anticipated Utilization by Listed Species (List species, their legal classification (E, T, SSC), type of use, and intensity of use of the assessment area)
Wading birds, shorebirds, forage fishes	Occasional use by wading birds such as roseate spoonbill (SSC), white ibis (SSC), little blue heron (SSC), wood stork (E), reddish egret (SSC), snowy egret (SSC) and tricolored heron (SSC) as well as white-crowned pigeon (T).

Observed Evidence of Wildlife Utilization (List species directly observed, or other signs such as tracks, droppings, casings, nests, etc.):

Reddish egret, snowy egret, tricolored heron, roseate spoonbill, white pelican, white ibis, killdeer, great egret, great horned owl, sandpipers, lesser yellowlegs, greater yellowlegs, least tern, and plovers.

Additional relevant factors:

Assessment conducted by:	Assessment date(s):
K. Bullock, C. Cunningham	11/29/2007

PART II – Quantification of Assessment Area (impact or mitigation)
(See Sections 62-345.500 and .600, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
FPL Turkey Point Units 6 & 7/Site		Mangrove Heads
Impact or Mitigation	Assessment conducted by:	Assessment date:
Impact	K. Bullock, C. Cunningham	11/29/2007

Scoring Guidance	Optimal (10)	Moderate(7)	Minimal (4)	Not Present (0)
The scoring of each indicator is based on what would be suitable for the type of wetland or surface water assessed	Condition is optimal and fully supports wetland/surface water functions	Condition is less than optimal, but sufficient to maintain most wetland/surface waterfunctions	Minimal level of support of wetland/surface water functions	Condition is insufficient to provide wetland/surface water functions

.500(6)(a) Location and Landscape Support	w/o pres or current: 6	with: 0	Location and landscape support variable is reduced due to proximity of existing Turkey Point facility, disturbance of habitat associated with cooling canal system, and isolated hydrology. Individual parameter scores: a) Support to wildlife listed in Part 1 by outside habitats = 8, due to proximity of Biscayne Bay despite artificial nature of surrounding habitat at FPL facility; b) Invasive exotic species = 9, minimal coverage; c) Wildlife access to and from outside = 7, decreased slightly due to limitations imposed by the water level control system; d) functions that benefit fish & wildlife downstream-distance or barriers = 4, because this is a closed system; e) Impacts to wildlife listed in Part 1 by outside land uses = 8, slightly reduced due to surrounding habitat loss; f) Hydrologically connected areas downstream of assessment area = 2, due to closed system; g) Dependency of downstream areas on assessment area = 4, little benefit to downstream areas
.500(6)(b)Water Environment (n/a for uplands)	w/o pres or current: 6	with: 0	The water environment score is reduced due to the artificial hydrology of the assessment site and use for industrial cooling water. Individual parameter scores: a) water levels and flows = 4, drastic alterations in water level due to artificial nature of the system; b) water level indicators = 4, not consistent with expected; c) soil moisture = 8, slightly drier than expected; d) soil erosion or depostion = 5, atypical patterns due to altered flows; e) evidence of fire history = N/A; f) vegetation community zonation = 7, due to sparse cover; g) hydrologic stress on vegetation = 4, due to altered hydrologic regime; h) use by animal species with specific hydrological requirements = 7, due to lack of tidal connection and resultant reduction in number of fish species; i) vegetative species tolerant of and associated with water quality degradation = 7, community consists of species tolerant of high salinities; j) direct observation of water quality = 8, very slight discoloration, turbidity, or sheen; k) existing water quality data = 5, due to high temperature and salinity; l) water depth wave, wave energy, currents and light penetration = 5, due to drastic changes in water levels.
.500(6)(c)Community structure 1. Vegetation and/or 2. Benthic Community	w/o pres or current: 7	with: 0	The community structure variable is reduced due to low species diversity resulting from high salinity, elevated temperature, and hydrologic isolation. Individual parameter scores: a) plant community species in the canopy, shrub, or ground stratum = 9, dominated by native species; b) invasive exotics or other invasive plant species = 9, very minimal coverage; c) regeneration and recruitment = 6, less than expected; d) age & size distribution = 6, due to lack of seedling success; e) density and quality of coarse woody debris, snag, den, and cavity = 7, adequate for system type; f) plant condition = 7, due to dead stems and low productivity; g) land management practices = 5, due to alteration of community structure; h) topographic features = 7, slightly less than optimal; i) siltation or algal growth in submerged aquatic plant communities = 8, minor algal growth

Score = sum of above scores/30 (if uplands, divide by 20)	
current or w/o pres	with
0.63	0

Delta = [with-current]
-0.63

If preservation as mitigation,
Preservation adjustment factor =
Adjusted mitigation delta =

If mitigation
Time lag (t-factor) =
Risk factor =

For impact assessment areas
FL = delta x acres = -0.63 x 12.2 = **7.69**

For mitigation assessment areas
RFG = delta/(t-factor x risk) =

Form 62-345.900(2), F.A.C. [effective date]

PART I – Qualitative Description
(See Section 62-345.400, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
FPL Turkey Point Units 6 & 7/Site		Dwarf Mangroves

FLUCCs code	Further classification (optional)	Impact or Mitigation Site?	Assessment Area Size
612-B		Impact	16.9 acres

Basin/Watershed Name/Number	Affected Waterbody (Class)	Special Classification (i.e.OFW, AP, other local/state/federal designation of importance)
DA-4/03090202		

Geographic relationship to and hydrologic connection with wetlands, other surface water, uplands

Part of Turkey Point facility's existing industrial cooling water system.

Assessment area description

Hypersaline dwarf mangroves within industrial cooling water system.

Significant nearby features	Uniqueness (considering the relative rarity in relation to the regional landscape.)
FPL Turkey Point power generation facilities, Biscayne Bay	Artificial system, not unique.

Functions	Mitigation for previous permit/other historic use
Industrial cooling water management	

Anticipated Wildlife Utilization Based on Literature Review (List of species that are representative of the assessment area and reasonably expected to be found)	Anticipated Utilization by Listed Species (List species, their legal classification (E, T, SSC), type of use, and intensity of use of the assessment area)
Wading birds, shorebirds, forage fishes	Occasional use by wading birds such as roseate spoonbill (SSC), white ibis (SSC), little blue heron (SSC), wood stork (E), reddish egret (SSC), snowy egret (SSC) and tricolored heron (SSC).

Observed Evidence of Wildlife Utilization (List species directly observed, or other signs such as tracks, droppings, casings, nests, etc.):

Reddish egret, snowy egret, tricolored heron, roseate spoonbill, white pelican, white ibis, great egret, and wood stork.

Additional relevant factors:

Assessment conducted by:	Assessment date(s):
K. Bullock, C. Cunningham	11/29/2007

Form 62-345.900(1), F.A.C. [effective date]

PART II – Quantification of Assessment Area (impact or mitigation)
(See Sections 62-345.500 and .600, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
FPL Turkey Point Units 6 & 7/Site		Dwarf Mangroves
Impact or Mitigation	Assessment conducted by:	Assessment date:
Impact	K. Bullock, C. Cunningham	11/29/2007

Scoring Guidance	Optimal (10)	Moderate(7)	Minimal (4)	Not Present (0)
The scoring of each indicator is based on what would be suitable for the type of wetland or surface water assessed	Condition is optimal and fully supports wetland/surface water functions	Condition is less than optimal, but sufficient to maintain most wetland/surface waterfunctions	Minimal level of support of wetland/surface water functions	Condition is insufficient to provide wetland/surface water functions

.500(6)(a) Location and Landscape Support	w/o pres or current: 6	with: 0	Location and landscape support variable is reduced due to proximity of existing Turkey Point facility, disturbance of habitat associated with cooling canal system, and isolated hydrology. Individual parameter scores: a) Support to wildlife listed in Part 1 by outside habitats = 8 due to proximity of Biscayne Bay despite artificial nature of surrounding habitat at FPL facility; b) Invasive exotic species = 9, minimal coverage; c) Wildlife access to and from outside = 7, decreased slightly due to limitations imposed by the water level control system; d) functions that benefit fish & wildlife downstream-distance or barriers = 4 because this is a closed system; e) Impacts to wildlife listed in Part 1 by outside land uses = 8, slightly reduced due to surrounding habitat loss; f) Hydrologically connected areas downstream of assessment area = 2 due to closed system; g) Dependency of downstream areas on assessment area = 4, little benefit to downstream areas
.500(6)(b)Water Environment (n/a for uplands)	w/o pres or current: 5	with: 0	The water environment score is reduced due to the artificial hydrology of the assessment site and use for industrial cooling water. Individual parameter scores: a) water levels and flows = 4, drastic alterations in water level due to artificial nature of the system; b) water level indicators = 4, not consistent with expected; c) soil moisture = 7, slightly drier than expected; d) soil erosion or depostion = 4, atypical patterns indicative of altered flows; e) evidence of fire history = N/A; f) vegetation community zonation = 6, due to very sparse cover; g) hydrologic stress on vegetation = 3, due to high mortality; h) use by animal species with specific hydrological requirements = 7, due to lack of tidal connection and resultant reduction in number of fish species; i) vegetative species tolerant of and associated with water quality degradation = 7, community consists of species tolerant of high salinities; j) direct observation of water quality = 8, very slight discoloration, turbidity, or sheen; k) existing water quality data = 3, due to high temperature and salinity; l) water depth wave, wave energy, currents and light penetration = 5, due to drastic changes in water levels.
.500(6)(c)Community structure 1. Vegetation and/or 2. Benthic Community	w/o pres or current: 5	with: 0	The community structure variable is reduced due to low species diversity resulting from high salinity, elevated temperature, and hydrologic isolation. Individual parameter scores: a) plant community species in the canopy, shrub, or ground stratum = 8, dominated by native species; b) invasive exotics or other invasive plant species = 8, minimal coverage; c) regeneration and recruitment = 4, minimal evidence of recruitment; d) age & size distribution = 4, due to high mortality and lack of seedling success; e) density and quality of coarse woody debris, snag, den, and cavity = 4, greater than normal due to poor community health; f) plant condition = 4, dead stems and low recruitment; g) land management practices = 5, due to alteration of community structure; h) topographic features = 4, less than optimal; i) siltation or algal growth in submerged aquatic plant communities = 7, minor algal growth

Score = sum of above scores/30 (if uplands, divide by 20)	
current or w/o pres: 0.53	with: 0

Delta = [with-current]
-0.53

If preservation as mitigation,
Preservation adjustment factor =
Adjusted mitigation delta =

If mitigation
Time lag (t-factor) =
Risk factor =

For impact assessment areas
FL = delta x acres = -0.53 x 16.9 = **8.96**

For mitigation assessment areas
RFG = delta/(t-factor x risk) =

Form 62-345.900(2), F.A.C. [effective date]

PART I – Qualitative Description
(See Section 62-345.400, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
FPL Turkey Point Units 6 & 7/Site		Mud Flats

FLUCCs code	Further classification (optional)	Impact or Mitigation Site?	Assessment Area Size
650		Impact	187.5 acres

Basin/Watershed Name/Number	Affected Waterbody (Class)	Special Classification (i.e.OFW, AP, other local/state/federal designation of importance)
DA-4/03090202		

Geographic relationship to and hydrologic connection with wetlands, other surface water, uplands

Part of Turkey Point facility's existing industrial cooling water system.

Assessment area description

Hypersaline mud flats within an industrial cooling water system.

Significant nearby features	Uniqueness (considering the relative rarity in relation to the regional landscape.)
FPL Turkey Point power generation facilities, Biscayne Bay	Artificial system, not unique.

Functions	Mitigation for previous permit/other historic use
Industrial cooling water management	

Anticipated Wildlife Utilization Based on Literature Review (List of species that are representative of the assessment area and reasonably expected to be found)	Anticipated Utilization by Listed Species (List species, their legal classification (E, T, SSC), type of use, and intensity of use of the assessment area)
Wading birds, shorebirds	Occasional use for foraging by wading birds such as roseate spoonbill (SSC), little blue heron (SSC), white ibis (SSC), wood stork (E), reddish egret (SSC), snowy egret (SSC) and tricolored heron (SSC) as well as white-crowned pigeon (T).

Observed Evidence of Wildlife Utilization (List species directly observed, or other signs such as tracks, droppings, casings, nests, etc.):

Reddish egret, snowy egret, tricolored heron, roseate spoonbill, white pelican, white ibis, killdeer, great egret, great horned owl, sandpipers, lesser yellowlegs, greater yellowlegs, least tern, and plovers.

Additional relevant factors:

Assessment conducted by:	Assessment date(s):
K. Bullock, C. Cunningham	11/29/2007

Form 62-345.900(1), F.A.C. [effective date]

PART II – Quantification of Assessment Area (impact or mitigation)
(See Sections 62-345.500 and .600, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
FPL Turkey Point Units 6 & 7/Site		Mud Flats
Impact or Mitigation	Assessment conducted by:	Assessment date:
Impact	K. Bullock, C. Cunningham	11/29/2007

Scoring Guidance	Optimal (10)	Moderate(7)	Minimal (4)	Not Present (0)
The scoring of each indicator is based on what would be suitable for the type of wetland or surface water assessed	Condition is optimal and fully supports wetland/surface water functions	Condition is less than optimal, but sufficient to maintain most wetland/surface waterfunctions	Minimal level of support of wetland/surface water functions	Condition is insufficient to provide wetland/surface water functions

.500(6)(a) Location and Landscape Support	w/o pres or current: 6	with: 0	Location and landscape support variable is reduced due to proximity of existing Turkey Point facility, disturbance of habitat associated with cooling canal system, and isolated hydrology. Individual parameter scores: a) Support to wildlife listed in Part 1 by outside habitats = 8 due to proximity of Biscayne Bay despite artificial nature of surrounding habitat at FPL facility; b) Invasive exotic species = 9, minimal coverage; c) Wildlife access to and from outside = 7, decreased slightly due to limitations imposed by the water level control system; d) functions that benefit fish & wildlife downstream-distance or barriers = 4 because this is a closed system; e) Impacts to wildlife listed in Part 1 by outside land uses = 8, slightly reduced due to surrounding habitat loss; f) Hydrologically connected areas downstream of assessment area = 2 due to closed system; g) Dependency of downstream areas on assessment area = 4, little benefit to downstream areas
.500(6)(b)Water Environment (n/a for uplands)	w/o pres or current: 5	with: 0	The water environment score is reduced due to the artificial hydrology of the assessment site and use for industrial cooling water. Individual parameter scores: a) water levels and flows = 2, extreme deviation from natural flows; b) water level indicators = 4, not consistent with expected; c) soil moisture = 7, slightly drier than expected; d) soil erosion or depostion = 4, atypical patterns indicative of altered flows; e) evidence of fire history = N/A; f) vegetation community zonation = 4, zonation inappropriate due to unnatural hydroperiod; g) hydrologic stress on vegetation = 3, due to high mortality; h) use by animal species with specific hydrological requirements = 7, due to lack of tidal connection and resultant reduction in number of fish species; i) vegetative species tolerant of and associated with water quality degradation = 5, sparse community consists of species tolerant of high salinities; j) direct observation of water quality = N/A; k) existing water quality data = 5, due to altered temperature and salinity; l) water depth wave, wave energy, currents and light penetration = N/A.
.500(6)(c)Community structure 1. Vegetation and/or 2. Benthic Community	w/o pres or current: 4	with: 0	The community structure variable is reduced due to low species diversity resulting from high salinity, elevated temperature, and highly altered hydroperiod. Individual parameter scores: a) plant community species in the canopy, shrub, or ground stratum = 5, majority of plant cover is inappropriate for hydrologic conditions, evidenced by lack of coverage and high mortality; b) invasive exotics or other invasive plant species = 7, minimal coverage; c) regeneration and recruitment = 4, minimal evidence of recruitment; d) age & size distribution = 4, due to high mortality and lack of seedling success; e) density and quality of coarse woody debris, snag, den, and cavity = 3, not present; f) plant condition = 3, dead stems and low recruitment; g) land management practices = 4, due to alteration of community structure and hydroperiod; h) topographic features = 4, less than optimal; i) siltation or algal growth in submerged aquatic plants = N/A

Score = sum of above scores/30 (if uplands, divide by 20)	
current or w/o pres	with
0.50	0

Delta = [with-current]
-0.50

If preservation as mitigation,
Preservation adjustment factor =
Adjusted mitigation delta =

If mitigation
Time lag (t-factor) =
Risk factor =

For impact assessment areas
FL = delta x acres = -0.50 x 187.5 = **93.75**

For mitigation assessment areas
RFG = delta/(t-factor x risk) =

Form 62-345.900(2), F.A.C. [effective date]

PART I – Qualitative Description
(See Section 62-345.400, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
FPL Turkey Point Units 6 & 7/Site		Wetland Spoil Piles

FLUCCs code	Further classification (optional)	Impact or Mitigation Site?	Assessment Area Size
743-Wet	Mangrove, Australian Pine, Brazilian Pepper	Impact	9.1 acres

Basin/Watershed Name/Number	Affected Waterbody (Class)	Special Classification (i.e.OFW, AP, other local/state/federal designation of importance)
DA-4/03090202		

Geographic relationship to and hydrologic connection with wetlands, other surface water, uplands

Part of Turkey Point facility's existing industrial cooling water system.

Assessment area description

Historic spoil piles adjacent to remnant intake/discharge canals.

Significant nearby features	Uniqueness (considering the relative rarity in relation to the regional landscape.)
FPL Turkey Point power generation facilities, Biscayne Bay	Artificial system, not unique.

Functions	Mitigation for previous permit/other historic use
Industrial cooling water management	

Anticipated Wildlife Utilization Based on Literature Review (List of species that are representative of the assessment area and reasonably expected to be found)	Anticipated Utilization by Listed Species (List species, their legal classification (E, T, SSC), type of use, and intensity of use of the assessment area)
Wading birds, raccoon	Occasional use for resting/cover by wading birds such as roseate spoonbill (SSC), white ibis (SSC), wood stork (E), little blue heron (SSC), reddish egret (SSC), snowy egret (SSC) and tricolored heron (SSC).

Observed Evidence of Wildlife Utilization (List species directly observed, or other signs such as tracks, droppings, casings, nests, etc.):

Snowy egret, tricolored heron, great egret, great horned owl.

Additional relevant factors:

Assessment conducted by:	Assessment date(s):
K. Bullock, C. Cunningham	11/29/2007

Form 62-345.900(1), F.A.C. [effective date]

PART II – Quantification of Assessment Area (impact or mitigation)
(See Sections 62-345.500 and .600, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
FPL Turkey Point Units 6 & 7/Site		Wetland Spoil Piles
Impact or Mitigation	Assessment conducted by:	Assessment date:
Impact	K. Bullock, C. Cunningham	11/29/2007

Scoring Guidance	Optimal (10)	Moderate(7)	Minimal (4)	Not Present (0)
The scoring of each indicator is based on what would be suitable for the type of wetland or surface water assessed	Condition is optimal and fully supports wetland/surface water functions	Condition is less than optimal, but sufficient to maintain most wetland/surface waterfunctions	Minimal level of support of wetland/surface water functions	Condition is insufficient to provide wetland/surface water functions

.500(6)(a) Location and Landscape Support	w/o pres or current: 6	with: 0	Location and landscape support variable is reduced due to proximity of existing Turkey Point facility, disturbance of habitat associated with cooling canal system, and isolated hydrology. Individual parameter scores: a) Support to wildlife listed in Part 1 by outside habitats = 8 due to proximity of Biscayne Bay despite artificial nature of surrounding habitat at FPL facility; b) Invasive exotic species = 9, minimal coverage; c) Wildlife access to and from outside = 7, decreased slightly due to limitations imposed by the water level control system; d) functions that benefit fish & wildlife downstream-distance or barriers = 4 because this is a closed system; e) Impacts to wildlife listed in Part 1 by outside land uses = 8, slightly reduced due to surrounding habitat loss; f) Hydrologically connected areas downstream of assessment area = 2 due to closed system; g) Dependency of downstream areas on assessment area = 4, little benefit to downstream areas
.500(6)(b)Water Environment (n/a for uplands)	w/o pres or current: 4	with: 0	The water environment score is reduced due to the artificial hydrology of the assessment site and use for industrial cooling water. Individual parameter scores: a) water levels and flows = 2, extreme deviation from natural flows; b) water level indicators = 4, not consistent with expected; c) soil moisture = 5, drier than expected; d) soil erosion or depostion = 4, atypical patterns indicative of altered flows; e) evidence of fire history = N/A; f) vegetation community zonation = 4, zonation inappropriate due to unnatural hydroperiod; g) hydrologic stress on vegetation = 5, due to artificial and highly variable hydroperiod; h) use by animal species with specific hydrological requirements = 5, due to lack of tidal connection, exotic vegetation, poor habitat quality; i) vegetative species tolerant of and associated with water quality degradation = 5, sparse community consists of species tolerant of high salinities; j) direct observation of water quality = N/A; k) existing water quality data = 5, due to altered temperature and salinity; l) water depth wave, wave energy, currents and light penetration = N/A.
.500(6)(c)Community structure 1. Vegetation and/or 2. Benthic Community	w/o pres or current: 5	with: 0	The community structure variable is reduced due to low species diversity resulting from high salinity, elevated temperature, and highly altered hydroperiod. Individual parameter scores: a) plant community species in the canopy, shrub, or ground stratum = 5, majority of plant cover is inappropriate for hydrologic conditions, evidenced by lack of coverage and high mortality; b) invasive exotics or other invasive plant species = 5, moderate coverage - Australian pine and Brazilian pepper; c) regeneration and recruitment = 4, minimal evidence of recruitment; d) age & size distribution = 5, due to lack of seedling success; e) density and quality of coarse woody debris, snag, den, and cavity = 5, less than expected; f) plant condition = 5, some dead stems and low recruitment; g) land management practices = 5, due to alteration of community structure and hydroperiod; h) topographic features = 4, spoil pile topography is less than optimal; i) siltation or algal growth in submerged aquatic plants = N/A

Score = sum of above scores/30 (if uplands, divide by 20)	
current or w/o pres	with
0.50	0

Delta = [with-current]
-0.50

If preservation as mitigation,
Preservation adjustment factor =
Adjusted mitigation delta =

If mitigation
Time lag (t-factor) =
Risk factor =

For impact assessment areas
FL = delta x acres = -0.50 x 9.1 = **4.55**

For mitigation assessment areas
RFG = delta/(t-factor x risk) =

Form 62-345.900(2), F.A.C. [effective date]

PART I – Qualitative Description
(See Section 62-345.400, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
FPL Turkey Point Units 6 & 7/Associated Facilities/Nuclear Administration Building, Training Building and Parking Area		Mangrove Swamps

FLUCCs code	Further classification (optional)	Impact or Mitigation Site?	Assessment Area Size
612		Impact	18.5 acres

Basin/Watershed Name/Number	Affected Waterbody (Class)	Special Classification (i.e.OFW, AP, other local/state/federal designation of importance)
DA-4/03090202		None

Geographic relationship to and hydrologic connection with wetlands, other surface water, uplands

Surrounded by paved parking lots and access roads to the north, west, and east, and the Units 6 & 7 Site to the south. Hydrologically connected to adjacent canals and Biscayne Bay through culverts.

Assessment area description

Mangrove swamp area located north of the Units 6 & 7 Site and southwest of the existing plant facility, surrounded by parking lots and roadways. Receives runoff from the surrounding parking lots, and contains areas of open water, which likely flows in through culverts from adjacent canals and Biscayne Bay. Dominant species present include red mangrove, white mangrove, and black mangrove, buttonwood, Brazilian pepper, sea grape, Australian pine, poisonwood, leather fern, cankerberry, rubber vine, and cocoplum.

Significant nearby features	Uniqueness (considering the relative rarity in relation to the regional landscape.)
FPL Turkey Point Plant, Biscayne Bay	Not unique

Functions	Mitigation for previous permit/other historic use
Water storage	N/A

Anticipated Wildlife Utilization Based on Literature Review (List of species that are representative of the assessment area and reasonably expected to be found)	Anticipated Utilization by Listed Species (List species, their legal classification (E, T, SSC), type of use, and intensity of use of the assessment area)
Wading birds, shorebirds, forage fishes	Occasional use by wading birds such as roseate spoonbill (SSC), white ibis (SSC), little blue heron (SSC), wood stork (E), reddish egret (SSC), snowy egret (SSC) and tricolored heron (SSC)

Observed Evidence of Wildlife Utilization (List species directly observed, or other signs such as tracks, droppings, casings, nests, etc.):

None

Additional relevant factors:

Assessment conducted by:	Assessment date(s):
K. Bullock, S. Rizzo	6/4/2008

PART II A – Quantification of Assessment Area (impact or mitigation)
(See Sections 62-345.500 and .600, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
FPL Turkey Point Units 6 & 7/Associated Facilities/Nuclear Administration Building, Training Building and Parking Area		Mangrove Swamps
Impact or Mitigation	Assessment conducted by:	Assessment date:
Impact	K. Bullock, S. Rizzo	6/4/2008

Scoring Guidance	Optimal (10)	Moderate(7)	Minimal (4)	Not Present (0)
The scoring of each indicator is based on what would be suitable for the type of wetland or surface water assessed	Condition is optimal and fully supports wetland/surface water functions	Condition is less than optimal, but sufficient to maintain most wetland/surface waterfunctions	Minimal level of support of wetland/surface water functions	Condition is insufficient to provide wetland/surface water functions

	w/o pres or current	with	
.500(6)(a) Location and Landscape Support	6	0	Location and landscape support variable is reduced due to proximity of existing Turkey Point facility, and disturbance of habitat associated with initial facility construction. Individual parameter scores: a) Support to wildlife listed in Part 1 by outside habitats = 7, due to proximity of Biscayne Bay despite artificial nature of surrounding habitat at FPL facility; b) Invasive exotic species = 6, moderate coverage; c) Wildlife access to and from outside = 6, decreased due to limitations imposed by surrounding roadways and lack of open water connection; d) functions that benefit fish & wildlife downstream-distance or barriers = 4, area locationally isolated from other habitats; e) Impacts to wildlife listed in Part 1 by outside land uses = 4, slightly reduced due to surrounding habitat loss; f) Hydrologically connected areas downstream of assessment area = 4, apparently connected through culverts, no natural connection; g) Dependency of downstream areas on assessment area = 4, little benefit to downstream areas.
.500(6)(b)Water Environment (n/a for uplands)	7	0	The water environment score is reduced due to the artificial hydrology of the surrounding area. Individual parameter scores: a) water levels and flows = 4, drastic alterations in water level due to artificial nature of the surrounding areas; b) water level indicators = 4, not consistent with expected; c) soil moisture = 8, slightly drier than expected; d) soil erosion or deposition = 5, atypical patterns due to altered flows; e) evidence of fire history = N/A; f) vegetation community zonation = 7, slightly altered; g) hydrologic stress on vegetation = 4, due to altered hydrologic regime; h) use by animal species with specific hydrological requirements = 7, due to lack of open water connection and resultant reduction in number of fish species; i) vegetative species tolerant of and associated with water quality degradation = 7, community consists of species tolerant of high salinities; j) direct observation of water quality = 8, very slight discoloration, turbidity, or sheen; k) existing water quality data = N/A; l) water depth wave, wave energy, currents and light penetration = N/A.
.500(6)(c)Community structure 1. Vegetation and/or 2. Benthic Community	7	0	The community structure variable is reduced due to presence of exotics and hydrologic isolation. Individual parameter scores: a) plant community species in the canopy, shrub, or ground stratum = 8, mostly dominated by native species; b) invasive exotics or other invasive plant species = 7, minimal coverage; c) regeneration and recruitment = 7, slightly less than expected; d) age & size distribution = 7, slightly less than expected; e) density and quality of coarse woody debris, snag, den, and cavity = 7, adequate for system type; f) plant condition = 7, due to dead stems and low productivity; g) land management practices = 5, due to alteration of community structure; h) topographic features = 7, slightly less than optimal; i) siltation or algal growth in submerged aquatic plant communities = N/A.

Score = sum of above scores/30 (if uplands, divide by 20)	
current or w/o pres	with
0.67	0

Delta = [with-current]
-0.67

If preservation as mitigation,
Preservation adjustment factor =
Adjusted mitigation delta =

If mitigation
Time lag (t-factor) =
Risk factor =

For impact assessment areas
FL = delta x acres = -0.67 x 18.5 = **12.39**

For mitigation assessment areas
RFG = delta/(t-factor x risk) =

PART I – Qualitative Description
(See Section 62-345.400, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
FPL Turkey Point Units 6 & 7/Associated Facilities/Nuclear Administration Building, Training Building and Parking Area		Mangrove/Willow

FLUCCs code	Further classification (optional)	Impact or Mitigation Site?	Assessment Area Size
612/618		Impact	7.6 acres

Basin/Watershed Name/Number	Affected Waterbody (Class)	Special Classification (i.e.OFW, AP, other local/state/federal designation of importance)
DA-4/03090202		None

Geographic relationship to and hydrologic connection with wetlands, other surface water, uplands

Surrounded by paved parking lots and access roads to the north, west, and east, and the Units 6 & 7 Site to the south. Hydrologically connected to adjacent canals and Biscayne Bay through culverts.

Assessment area description

Mangrove swamp area located north of the Units 6 & 7 Site and southwest of the existing plant facility, surrounded by parking lots and roadways. Receives runoff from the surrounding parking lots, and contains areas of open water, which likely flows in through culverts from adjacent canals and Biscayne Bay. Dominant species present include Carolina willow, red mangrove, white mangrove, and black mangrove, cattail, Brazilian pepper, and Peruvian primrose willow.

Significant nearby features	Uniqueness (considering the relative rarity in relation to the regional landscape.)
FPL Turkey Point Plant, Biscayne Bay	Not unique

Functions	Mitigation for previous permit/other historic use
Water storage	N/A

Anticipated Wildlife Utilization Based on Literature Review (List of species that are representative of the assessment area and reasonably expected to be found)	Anticipated Utilization by Listed Species (List species, their legal classification (E, T, SSC), type of use, and intensity of use of the assessment area)
Wading birds, shorebirds, forage fishes	Occasional use by wading birds such as roseate spoonbill (SSC), white ibis (SSC), little blue heron (SSC), wood stork (E), reddish egret (SSC), snowy egret (SSC) and tricolored heron (SSC)

Observed Evidence of Wildlife Utilization (List species directly observed, or other signs such as tracks, droppings, casings, nests, etc.):

None

Additional relevant factors:

Assessment conducted by:	Assessment date(s):
K. Bullock, S. Rizzo	6/4/2008

PART II A – Quantification of Assessment Area (impact or mitigation)
(See Sections 62-345.500 and .600, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
FPL Turkey Point Units 6 & 7/Associated Facilities/Nuclear Administration Building, Training Building and Parking Area		Mangrove/Willow
Impact or Mitigation	Assessment conducted by:	Assessment date:
Impact	K. Bullock, S. Rizzo	6/4/2008

Scoring Guidance	Optimal (10)	Moderate(7)	Minimal (4)	Not Present (0)
The scoring of each indicator is based on what would be suitable for the type of wetland or surface water assessed	Condition is optimal and fully supports wetland/surface water functions	Condition is less than optimal, but sufficient to maintain most wetland/surface waterfunctions	Minimal level of support of wetland/surface water functions	Condition is insufficient to provide wetland/surface water functions

	w/o pres or current	with	
.500(6)(a) Location and Landscape Support	6	0	Location and landscape support variable is reduced due to proximity of existing Turkey Point facility, and disturbance of habitat associated with initial facility construction. Individual parameter scores: a) Support to wildlife listed in Part 1 by outside habitats = 7, due to proximity of Biscayne Bay despite artificial nature of surrounding habitat at FPL facility; b) Invasive exotic species = 6, moderate coverage; c) Wildlife access to and from outside = 6, decreased due to limitations imposed by surrounding roadways and lack of open water connection; d) functions that benefit fish & wildlife downstream-distance or barriers = 4, area locationally isolated from other habitats; e) Impacts to wildlife listed in Part 1 by outside land uses = 4, slightly reduced due to surrounding habitat loss; f) Hydrologically connected areas downstream of assessment area = 4, apparently connected through culverts, no natural connection; g) Dependency of downstream areas on assessment area = 4, little benefit to downstream areas.
.500(6)(b)Water Environment (n/a for uplands)	7	0	The water environment score is reduced due to the artificial hydrology of the surrounding area. Individual parameter scores: a) water levels and flows = 4, drastic alterations in water level due to artificial nature of the surrounding areas; b) water level indicators = 4, not consistent with expected; c) soil moisture = 8, slightly drier than expected; d) soil erosion or deposition = 5, atypical patterns due to altered flows; e) evidence of fire history = N/A; f) vegetation community zonation = 7, slightly altered; g) hydrologic stress on vegetation = 4, due to altered hydrologic regime; h) use by animal species with specific hydrological requirements = 7, due to lack of open water connection and resultant reduction in number of fish species; i) vegetative species tolerant of and associated with water quality degradation = 7, community consists of species tolerant of high salinities; j) direct observation of water quality = 8, very slight discoloration, turbidity, or sheen; K) existing water quality data = N/A; l) water depth wave, wave energy, currents and light penetration = N/A.
.500(6)(c)Community structure 1. Vegetation and/or 2. Benthic Community	6	0	The community structure variable is reduced due to presence of exotics and hydrologic isolation. Individual parameter scores: a) plant community species in the canopy, shrub, or ground stratum = 8, mostly dominated by native species; b) invasive exotics or other invasive plant species = 7, minimal coverage; c) regeneration and recruitment = 7, slightly less than expected; d) age & size distribution = 7, slightly less than expected; e) density and quality of coarse woody debris, snag, den, and cavity = 7, adequate for system type; f) plant condition = 7, due to dead stems and low productivity; g) land management practices = 5, due to alteration of community structure; h) topographic features = 7, slightly less than optimal; i) siltation or algal growth in submerged aquatic plant communities = N/A.

Score = sum of above scores/30 (if uplands, divide by 20)	
current or w/o pres	with
0.63	0

Delta = [with-current]
-0.63

If preservation as mitigation,
Preservation adjustment factor =
Adjusted mitigation delta =

If mitigation
Time lag (t-factor) =
Risk factor =

For impact assessment areas
FL = delta x acres = -0.63 x 7.6 = **4.79**

For mitigation assessment areas
RFG = delta/(t-factor x risk) =

PART I – Qualitative Description
(See Section 62-345.400, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
FPL Turkey Point Units 6 & 7/Associated Facilities/Radial Collector Well Delivery Pipelines		Mangrove Swamps

FLUCCs code	Further classification (optional)	Impact or Mitigation Site?	Assessment Area Size
612		Impact	3 acres

Basin/Watershed Name/Number	Affected Waterbody (Class)	Special Classification (i.e.OFW, AP, other local/state/federal designation of importance)
DA-4/03090202		OFW (Biscayne Bay)

Geographic relationship to and hydrologic connection with wetlands, other surface water, uplands

Located along shoreline of Biscayne Bay.

Assessment area description

Mangrove shoreline of Turkey Point peninsula. This area is dominated by red and black mangroves, with subdominant species including white mangrove and buttonwood, as well as occasional Brazilian pepper, Australian pine, and sea grape.

Significant nearby features	Uniqueness (considering the relative rarity in relation to the regional landscape.)
FPL Turkey Point Plant, Biscayne Bay	Not unique

Functions	Mitigation for previous permit/other historic use
Water storage, drainage	N/A

Anticipated Wildlife Utilization Based on Literature Review (List of species that are representative of the assessment area and reasonably expected to be found)	Anticipated Utilization by Listed Species (List species, their legal classification (E, T, SSC), type of use, and intensity of use of the assessment area)
Wading birds, forage fishes	Occasional use by wading birds such as roseate spoonbill (SSC), white ibis (SSC), little blue heron (SSC), wood stork (E), reddish egret (SSC), snowy egret (SSC) and tricolored heron (SSC) as well as white-crowned pigeon (T).

Observed Evidence of Wildlife Utilization (List species directly observed, or other signs such as tracks, droppings, casings, nests, etc.):

None

Additional relevant factors:

Assessment conducted by:	Assessment date(s):
S. Rizzo	2/1/2009

Form 62-345.900(1), F.A.C. [effective date]

PART II – Quantification of Assessment Area (impact or mitigation)
(See Sections 62-345.500 and .600, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
FPL Turkey Point Units 6 & 7/Associated Facilities/Radial Collector Well Delivery Pipelines		Mangrove Swamps
Impact or Mitigation	Assessment conducted by:	Assessment date:
Impact	S. Rizzo	2/1/2009

Scoring Guidance	Optimal (10)	Moderate(7)	Minimal (4)	Not Present (0)
The scoring of each indicator is based on what would be suitable for the type of wetland or surface water assessed	Condition is optimal and fully supports wetland/surface water functions	Condition is less than optimal, but sufficient to maintain most wetland/surface waterfunctions	Minimal level of support of wetland/surface water functions	Condition is insufficient to provide wetland/surface water functions

.500(6)(a) Location and Landscape Support	w/o pres or current: 8	with: 0
Location and landscape support is high due to location within Biscayne Bay. Individual parameter scores: a) Support to wildlife listed in Part 1 by outside habitats = 9, due to location within Biscayne Bay; b) Invasive exotic species = 7, some present within assessment area; c) Wildlife access to and from outside = 9, open to Biscayne Bay; d) functions that benefit fish & wildlife downstream-distance or barriers = 9, open system; e) Impacts to wildlife listed in Part 1 by outside land uses = 9, surrounding habitats undisturbed with exception of Turkey Point Power Plant; f) Hydrologically connected areas downstream of assessment area = 9, open to Biscayne Bay; g) Dependency of downstream areas on assessment area = 9, benefits downstream areas.		
.500(6)(b)Water Environment (n/a for uplands)	w/o pres or current: 9	with: 0
The water environment score is high due to location within Biscayne Bay. Individual parameter scores: a) water levels and flows = 9, consistent with expected; b) water level indicators = 9, consistent with expected; c) soil moisture = 9, consistent with expected; d) soil erosion or deposition = 9, typical patterns; e) evidence of fire history = N/A; f) vegetation community zonation = 9, appropriate for community type; g) hydrologic stress on vegetation = 9, minimal; h) use by animal species with specific hydrological requirements = 9, consistent with expected; i) vegetative species tolerant of and associated with water quality degradation = 9, none present; j) direct observation of water quality = 9, no sheen or discoloration; k) existing water quality data = N/A; l) water depth wave, wave energy, currents and light penetration = N/A.		
.500(6)(c)Community structure 1. Vegetation and/or 2. Benthic Community	w/o pres or current: 9	with: 0
The community structure variable is slightly reduced due to presence of exotic species. Individual parameter scores: a) plant community species in the canopy, shrub, or ground stratum = 7, some exotic species; b) invasive exotics or other invasive plant species = 7, some coverage; c) regeneration and recruitment = 9, near normal recruitment; d) age & size distribution = 9, typical; e) density and quality of coarse woody debris, snag, den, and cavity = 9, typical; f) plant condition = 9, generally good plant condition; g) land management practices = N/A; h) topographic features = 9, optimal; i) siltation or algal growth in submerged aquatic plant communities = 9, mostly typical.		

Score = sum of above scores/30 (if uplands, divide by 20)	
current or w/o pres	with
0.87	0

Delta = [with-current]
-0.87

If preservation as mitigation,
Preservation adjustment factor =
Adjusted mitigation delta =

If mitigation
Time lag (t-factor) =
Risk factor =

For impact assessment areas
FL = delta x acres = -0.87 x 3 = **2.6 (to be restored *in-situ*)**

For mitigation assessment areas
RFG = delta/(t-factor x risk) =

Form 62-345.900(2), F.A.C. [effective date]

PART I – Qualitative Description
(See Section 62-345.400, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
FPL Turkey Point Units 6 & 7/Associated Facilities/Reclaimed Water Treatment Facility		Dwarf Mangroves/Sawgrass Marsh

FLUCCs code	Further classification (optional)	Impact or Mitigation Site?	Assessment Area Size
612-B/6411		Impact	31.8 acres

Basin/Watershed Name/Number	Affected Waterbody (Class)	Special Classification (i.e.OFW, AP, other local/state/federal designation of importance)
DA-4/03090202		None

Geographic relationship to and hydrologic connection with wetlands, other surface water, uplands

Hydrologically isolated from Biscayne Bay due to roadways.

Assessment area description

The proposed location for the FPL reclaimed water treatment plant is an area historically dredged in association with the test cooling canal evaluations, and currently consists of upland spoil piles dominated by Australian pine, excavated open water canals, an upland access pathway, sawgrass marsh/ dwarf mangroves, and exotic wetland hardwoods. The area is hydrologically isolated due to existing roadways and berms. The dwarf mangrove community contains red mangroves typically less than 24 inches in height, stunted in response to decreased nutrient availability and increased salinity. Other vegetation includes sawgrass, black mangrove, white mangrove, buttonwood, sea grape, Brazilian pepper, wax myrtle, poisonwood, cocoplum, and Australian pine.

Significant nearby features	Uniqueness (considering the relative rarity in relation to the regional landscape.)
FPL Turkey Point Plant, Biscayne Bay, Model Lands Basin	Not unique

Functions	Mitigation for previous permit/other historic use
Water storage, wildlife habitat	N/A

Anticipated Wildlife Utilization Based on Literature Review (List of species that are representative of the assessment area and reasonably expected to be found)	Anticipated Utilization by Listed Species (List species, their legal classification (E, T, SSC), type of use, and intensity of use of the assessment area)
Wading birds, forage fishes	Occasional use by wading birds such as roseate spoonbill (SSC), white ibis (SSC), little blue heron (SSC), wood stork (E), reddish egret (SSC), snowy egret (SSC) and tricolored heron (SSC) as well as white-crowned pigeon (T).

Observed Evidence of Wildlife Utilization (List species directly observed, or other signs such as tracks, droppings, casings, nests, etc.):

None

Additional relevant factors:

Assessment conducted by:	Assessment date(s):
S. Rizzo, K. Bullock	2/24/2011

PART II – Quantification of Assessment Area (impact or mitigation)
(See Sections 62-345.500 and .600, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
FPL Turkey Point Units 6 & 7/Associated Facilities/Reclaimed Water Treatment Facility		Dwarf Mangroves/Sawgrass Marsh
Impact or Mitigation	Assessment conducted by:	Assessment date:
Impact	S. Rizzo/K. Bullock	2/24/2011

Scoring Guidance	Optimal (10)	Moderate(7)	Minimal (4)	Not Present (0)
The scoring of each indicator is based on what would be suitable for the type of wetland or surface water assessed	Condition is optimal and fully supports wetland/surface water functions	Condition is less than optimal, but sufficient to maintain most wetland/surface waterfunctions	Minimal level of support of wetland/surface water functions	Condition is insufficient to provide wetland/surface water functions

.500(6)(a) Location and Landscape Support	w/o pres or current: 7 with: 0	Location and landscape support variable is slightly reduced due to proximity of FPL Turkey Point Plant, roadways, and industrial wastewater treatment facility. Individual parameter scores: a) Support to wildlife listed in Part 1 by outside habitats = 7, due to proximity of nearby roadways; b) Invasive exotic species = 7, some exotics species present; c) Wildlife access to and from outside = 7, decreased due to slight isolation from other habitats due to roadways; d) functions that benefit fish & wildlife downstream-distance or barriers = 7, decreased due to slight isolation from other habitats due to roadways; e) Impacts to wildlife listed in Part 1 by outside land uses = 7, surrounding habitats relatively undisturbed with exception of roadways; f) Hydrologically connected areas downstream of assessment area = 7, hydrologically connected but some impacts due to roadways; g) Dependency of downstream areas on assessment area = 6, some benefit to downstream areas.
.500(6)(b)Water Environment (n/a for uplands)	w/o pres or current: 8 with: 0	The water environment score is somewhat reduced due to hydrological isolation resulting from surrounding roadways, increased salinity due to lack of water flushing, and adjacent spoil piles. Individual parameter scores: a) water levels and flows = 7, slightly less than expected; b) water level indicators = 7, slightly less than expected; c) soil moisture = 9, consistent with expected; d) soil erosion or deposition = 9, typical patterns; e) evidence of fire history = N/A; f) vegetation community zonation = 6, due to sparse cover; g) hydrologic stress on vegetation = 6, stress from high salinity; h) use by animal species with specific hydrological requirements = 7, slighly less than expected; i) vegetative species tolerant of and associated with water quality degradation = 7, species tolerant of high salinities present; j) direct observation of water quality = 8, no sheen or discoloration; K) existing water quality data = 6, due to high salinity; l) water depth wave, wave energy, currents and light penetration = N/A.
.500(6)(c)Community structure 1. Vegetation and/or 2. Benthic Community	w/o pres or current: 8 with: 0	The community structure variable is slightly reduced due to elevated salinity. Individual parameter scores: a) plant community species in the canopy, shrub, or ground stratum = 9, mostly all desirable species; b) invasive exotics or other invasive plant species = 9, very few present; c) regeneration and recruitment = 7, near normal recruitment; d) age & size distribution = 7, atypical due to high salinity; e) density and quality of coarse woody debris, snag, den, and cavity = N/A; f) plant condition = 7, generally good plant condition; g) land management practices = 8, h) topographic features = 9, slightly less than optimal; i) siltation or algal growth in submerged aquatic plant communities = N/A.

Score = sum of above scores/30 (if uplands, divide by 20)	
current or w/o pres	with
0.77	0

Delta = [with-current]
-0.77

If preservation as mitigation,
Preservation adjustment factor =
Adjusted mitigation delta =

If mitigation
Time lag (t-factor) =
Risk factor =

For impact assessment areas
FL = delta x acres = 0.77 x 31.8 = **24.49**

For mitigation assessment areas
RFG = delta/(t-factor x risk) =

Form 62-345.900(2), F.A.C. [effective date]

PART I – Qualitative Description
(See Section 62-345.400, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
FPL Turkey Point Units 6 & 7/Associated Facilities/Reclaimed Water Treatment Facility		Canals and Ditches

FLUCCs code	Further classification (optional)	Impact or Mitigation Site?	Assessment Area Size
510, 511		Impact	3.37 acres

Basin/Watershed Name/Number	Affected Waterbody (Class)	Special Classification (i.e.OFW, AP, other local/state/federal designation of importance)
DA-4/03090202		None

Geographic relationship to and hydrologic connection with wetlands, other surface water, uplands

Excavated canals/ditches within surrounding sawgrass and dwarf mangrove wetlands; hydrologically isolated from Biscayne Bay by roadways

Assessment area description

The proposed location for the FPL reclaimed water treatment plant is an area historically dredged in association with the test cooling canal evaluations, and currently consists of upland spoil piles dominated by Australian pine, excavated open water canals, an upland access pathway, sawgrass marsh/ dwarf mangroves, and exotic wetland hardwoods. The area is hydrologically isolated due to existing roadways and berms. The excavated canals and ditches are relatively steep sloped and sparsely vegetated.

Significant nearby features	Uniqueness (considering the relative rarity in relation to the regional landscape.)
FPL Turkey Point Plant, Biscayne Bay	Not unique

Functions	Mitigation for previous permit/other historic use
Water storage, historical test cooling canal evalution	N/A

Anticipated Wildlife Utilization Based on Literature Review (List of species that are representative of the assessment area and reasonably expected to be found)	Anticipated Utilization by Listed Species (List species, their legal classification (E, T, SSC), type of use, and intensity of use of the assessment area)
Wading birds, forage fishes	Occasional use by wading birds such as roseate spoonbill (SSC), white ibis (SSC), little blue heron (SSC), wood stork (E), reddish egret (SSC), snowy egret (SSC) and tricolored heron (SSC) as well as white-crowned pigeon (T). Reptiles such as American alligator (TSA).

Observed Evidence of Wildlife Utilization (List species directly observed, or other signs such as tracks, droppings, casings, nests, etc.):

None

Additional relevant factors:

Assessment conducted by:	Assessment date(s):
S. Rizzo, K. Bullock	2/24/2011

PART II – Quantification of Assessment Area (impact or mitigation)
(See Sections 62-345.500 and .600, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
FPL Turkey Point Units 6 & 7/Associated Facilities/Reclaimed Water Treatment Facility		Canals and Ditches
Impact or Mitigation	Assessment conducted by:	Assessment date:
Impact	S. Rizzo, K. Bullock	2/24/2011

Scoring Guidance	Optimal (10)	Moderate(7)	Minimal (4)	Not Present (0)
The scoring of each indicator is based on what would be suitable for the type of wetland or surface water assessed	Condition is optimal and fully supports wetland/surface water functions	Condition is less than optimal, but sufficient to maintain most wetland/surface waterfunctions	Minimal level of support of wetland/surface water functions	Condition is insufficient to provide wetland/surface water functions

.500(6)(a) Location and Landscape Support	w/o pres or current: 6	with: 0

Location and landscape support variable is reduced due to proximity of industrial wastewater treatment facility, Turkey Point Plant, surrounding roadways, and spoil piles. Individual parameter scores: a) Support to wildlife listed in Part 1 by outside habitats = 5, due to proximity of nearby roadways; b) Invasive exotic species = 5, common occurrence within assessment area; c) Wildlife access to and from outside = 5, decreased due to roadway barriers; d) functions that benefit fish & wildlife downstream-distance or barriers = 5; e) Impacts to wildlife listed in Part 1 by outside land uses = 5, surrounding habitats disturbed by roadways; f) Hydrologically connected areas downstream of assessment area = 5; g) Dependency of downstream areas on assessment area = 4, little benefit to downstream areas.

.500(6)(b)Water Environment (n/a for uplands)	w/o pres or current: 4	with: 0

The water environment score is somewhat reduced due to the artificial nature of the canal/ditch system. Individual parameter scores: a) water levels and flows = 4, no flow evident; b) water level indicators = 6, consistent with expected; c) soil moisture = 6, consistent with expected; d) soil erosion or deposition = 4, erosion evident; e) evidence of fire history = N/A; f) vegetation community zonation = 6, appropriate for community type; g) hydrologic stress on vegetation = 6, relatively minimal; h) use by animal species with specific hydrological requirements = 6, consistent with expected; i) vegetative species tolerant of and associated with water quality degradation = 6, some pollution tolerant species present; j) direct observation of water quality = 6, no sheen or discoloration; K) existing water quality data = N/A; l) water depth wave, wave energy, currents and light penetration = N/A.

.500(6)(c)Community structure 1. Vegetation and/or 2. Benthic Community	w/o pres or current: 5	with: 0

The community structure variable is reduced due to artificial nature of the canal/ditch system. Individual parameter scores: a) plant community species in the canopy, shrub, or ground stratum = 4, sparsely vegetated due to steep slopes, presence of exotic species on banks; b) invasive exotics or other invasive plant species = 4, compose majority of coverage; c) regeneration and recruitment = 7, near normal recruitment; d) age & size distribution = 7, slightly atypical; e) density and quality of coarse woody debris, snag, den, and cavity = 5, due to excavated canal banks; f) plant condition = 7, generally good plant condition; g) land management practices = 5, due to alteration of community structure and hydroperiod; h) topographic features = 5, less than optimal; i) siltation or algal growth in submerged aquatic plant communities = 7, minor algal growth.

Score = sum of above scores/30 (if uplands, divide by 20)	
current or w/o pres	with
0.50	0

Delta = [with-current]
-0.50

If preservation as mitigation,
Preservation adjustment factor =
Adjusted mitigation delta =

If mitigation
Time lag (t-factor) =
Risk factor =

For impact assessment areas
FL = delta x acres = -0.5 x 3.37 = **1.69**

For mitigation assessment areas
RFG = delta/(t-factor x risk) =

PART I – Qualitative Description
(See Section 62-345.400, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
FPL Turkey Point Units 6 & 7/Associated Facilities/Reclaimed Water Treatment Facility		Exotic Wetland Hardwoods

FLUCCs code	Further classification (optional)	Impact or Mitigation Site?	Assessment Area Size
619		Impact	0.17 acres

Basin/Watershed Name/Number	Affected Waterbody (Class)	Special Classification (i.e.OFW, AP, other local/state/federal designation of importance)
DA-4/03090202		None

Geographic relationship to and hydrologic connection with wetlands, other surface water, uplands

Hydrologically isolated from Biscayne Bay due to roadways; adjacent to sawgrass marsh and dwarf red mangrove wetlands.

Assessment area description

The proposed location for the FPL reclaimed water treatment plant is an area historically dredged in association with the test cooling canal evaluations, and currently consists of upland spoil piles dominated by Australian pine, excavated open water canals, an upland access pathway, sawgrass marsh/ dwarf mangroves, and exotic wetland hardwoods. The area is hydrologically isolated due to existing roadways and berms. Areas classified as exotic wetland hardwoods are dominated by the nuisance exotic species Australian pine, with Brazilian pepper also prevalent.

Significant nearby features	Uniqueness (considering the relative rarity in relation to the regional landscape.)
FPL Turkey Point Plant, Biscayne Bay	Not unique

Functions	Mitigation for previous permit/other historic use
Water storage, wildlife habitat	N/A

Anticipated Wildlife Utilization Based on Literature Review (List of species that are representative of the assessment area and reasonably expected to be found)	Anticipated Utilization by Listed Species (List species, their legal classification (E, T, SSC), type of use, and intensity of use of the assessment area)
Wading birds, shorebirds, forage fishes	Occasional use by wading birds such as roseate spoonbill (SSC), white ibis (SSC), little blue heron (SSC), wood stork (E), reddish egret (SSC), snowy egret (SSC) and tricolor heron (SSC). Also white-crowned pigeon (T).

Observed Evidence of Wildlife Utilization (List species directly observed, or other signs such as tracks, droppings, casings, nests, etc.):

None

Additional relevant factors:

Assessment conducted by:	Assessment date(s):
K. Bullock, S. Rizzo	2/24/2011

PART II – Quantification of Assessment Area (impact or mitigation)
(See Sections 62-345.500 and .600, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
FPL Turkey Point Units 6 & 7/Associated Facilities/Reclaimed Water Treatment Facility		Exotic Wetland Hardwoods
Impact or Mitigation	Assessment conducted by:	Assessment date:
Impact	K. Bullock, S. Rizzo	2/24/2011

Scoring Guidance	Optimal (10)	Moderate (7)	Minimal (4)	Not Present (0)
The scoring of each indicator is based on what would be suitable for the type of wetland or surface water assessed	Condition is optimal and fully supports wetland/surface water functions	Condition is less than optimal, but sufficient to maintain most wetland/surface waterfunctions	Minimal level of support of wetland/surface water functions	Condition is insufficient to provide wetland/surface water functions

.500(6)(a) Location and Landscape Support	w/o pres or current: 6	with: 0	Location and landscape support variable is reduced due to proximity of industrial wastewater treatment facility, Turkey Point Plant, surrounding roadways, and spoil piles. Individual parameter scores: a) Support to wildlife listed in Part 1 by outside habitats = 5, due to proximity of nearby roadways; b) Invasive exotic species = 5, common occurrence within assessment area; c) Wildlife access to and from outside = 5, decreased due to roadway barriers; d) functions that benefit fish & wildlife downstream-distance or barriers = 5; e) Impacts to wildlife listed in Part 1 by outside land uses = 5, surrounding habitats disturbed by roadways; f) Hydrologically connected areas downstream of assessment area = 5; g) Dependency of downstream areas on assessment area = 4, little benefit to downstream areas.
.500(6)(b)Water Environment (n/a for uplands)	w/o pres or current: 5	with: 0	The water environment score is reduced due to ditching, spoil piles, and hydrologic isolation. Individual parameter scores: a) water levels and flows = 4, no flow evident; b) water level indicators = 6, consistent with expected; c) soil moisture = 5, less than expected; d) soil erosion or deposition = 4, erosion evident; e) evidence of fire history = N/A; f) vegetation community zonation = 5, dominance by exotic species; g) hydrologic stress on vegetation = 6, relatively minimal; h) use by animal species with specific hydrological requirements = 5, less than expected; i) vegetative species tolerant of and associated with water quality degradation = 5, dominance by exotic species; j) direct observation of water quality = 6, no sheen or discoloration; K) existing water quality data = N/A; l) water depth wave, wave energy, currents and light penetration = N/A.
.500(6)(c)Community structure 1. Vegetation and/or 2. Benthic Community	w/o pres or current: 3	with: 0	The community structure variable is reduced due to low species diversity and presence of near monoculture of exotic Australian pine. Individual parameter scores: a) plant community species in the canopy, shrub, or ground stratum = 3, dominated by exotic species; b) invasive exotics or other invasive plant species = 3, dominant; c) regeneration and recruitment = 4, some evidence of recruitment; d) age & size distribution = 4, lower water levels possibly affecting age distribution; e) density and quality of coarse woody debris, snag, den, and cavity = 4, Australian pine poor quality woody debris; f) plant condition = 3, low recruitment of other species; g) land management practices = N/A; h) topographic features = 3, spoils and canal/ditch system; i) siltation or algal growth in submerged aquatic plant communities = N/A.

Score = sum of above scores/30 (if uplands, divide by 20)	
current or w/o pres: 0.47	with: 0

If preservation as mitigation,
Preservation adjustment factor =
Adjusted mitigation delta =

For impact assessment areas
FL = delta x acres = 0.47 x 0.17 = **0.08**

Delta = [with-current]
-0.47

If mitigation
Time lag (t-factor) =
Risk factor =

For mitigation assessment areas
RFG = delta/(t-factor x risk) =

Form 62-345.900(2), F.A.C. [effective date]

PART I – Qualitative Description
(See Section 62-345.400, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
FPL Turkey Point Units 6 & 7/Associated Facilities/FPL Reclaimed Water Treatment Facility		Mixed Wetland Hardwoods

FLUCCs code	Further classification (optional)	Impact or Mitigation Site?	Assessment Area Size
617		Impact	0.78 acres

Basin/Watershed Name/Number	Affected Waterbody (Class)	Special Classification (i.e.OFW, AP, other local/state/federal designation of importance)
DA-4/03090202		None

Geographic relationship to and hydrologic connection with wetlands, other surface water, uplands

Hydrologically isolated from Biscayne Bay due to roadways. Connected to adjacent sawgrass marsh, mangrove wetlands, and exotic hardwood wetlands.

Assessment area description

A parcel of mixed wetland hardwoods associated with a historic tidal creek occurs within the originally proposed location for the FPL reclaimed water treatment facility. The area is hydrologically isolated from Biscayne Bay due to existing roadways and berms. The area is vegetated with a mixture of red mangroves, black mangrove, white mangrove, buttonwood, sea grape, and cocoplum.

Significant nearby features	Uniqueness (considering the relative rarity in relation to the regional landscape.)
FPL Turkey Point Plant, Biscayne Bay	Not unique

Functions	Mitigation for previous permit/other historic use
Water storage, wildlife habitat	N/A

Anticipated Wildlife Utilization Based on Literature Review (List of species that are representative of the assessment area and reasonably expected to be found)	Anticipated Utilization by Listed Species (List species, their legal classification (E, T, SSC), type of use, and intensity of use of the assessment area)
Wading birds, shorebirds, forage fishes	Occasional use by wading birds such as roseate spoonbill (SSC), white ibis (SSC), little blue heron (SSC), wood stork (E), reddish egret (SSC), snowy egret (SSC) and tricolored heron (SSC). Also white-crowned pigeon (T).

Observed Evidence of Wildlife Utilization (List species directly observed, or other signs such as tracks, droppings, casings, nests, etc.):

None

Additional relevant factors:

Assessment conducted by:	Assessment date(s):
S. Rizzo	1/9/2009

PART II – Quantification of Assessment Area (impact or mitigation)
(See Sections 62-345.500 and .600, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
FPL Turkey Point Units 6 & 7/Associated Facilities/FPL Reclaimed Water Treatment Facility		Mixed Wetland Hardwoods
Impact or Mitigation	Assessment conducted by:	Assessment date:
Impact	S. Rizzo	1/9/2009

Scoring Guidance	Optimal (10)	Moderate (7)	Minimal (4)	Not Present (0)
The scoring of each indicator is based on what would be suitable for the type of wetland or surface water assessed	Condition is optimal and fully supports wetland/surface water functions	Condition is less than optimal, but sufficient to maintain most wetland/surface waterfunctions	Minimal level of support of wetland/surface water functions	Condition is insufficient to provide wetland/surface water functions

.500(6)(a) Location and Landscape Support	w/o pres or current: 7	with: 0	Location and landscape support variable is slightly reduced due to proximity of existing Turkey Point facility. Individual parameter scores: a) Support to wildlife listed in Part 1 by outside habitats = 7, due to proximity of Biscayne Bay; b) Invasive exotic species = 7, minimal coverage; c) Wildlife access to and from outside = 7, some limitations; d) functions that benefit fish & wildlife downstream-distance or barriers = 7, some barriers; e) Impacts to wildlife listed in Part 1 by outside land uses = 7, slightly reduced due to proximity of Turkey Point facility; f) Hydrologically connected areas downstream of assessment area = 7, some hydrological impairments; g) Dependency of downstream areas on assessment area = 7, some benefits to downstream areas.
.500(6)(b)Water Environment (n/a for uplands)	w/o pres or current: 8	with: 0	The water environment score is slightly reduced due to the slight hydrological isolation from surrounding roadways and increased salinity. Individual parameter scores: a) water levels and flows = 8, slightly less than expected; b) water level indicators = 8, slightly less than expected; c) soil moisture = 9, consistent with expected; d) soil erosion or deposition = 9, typical patterns; e) evidence of fire history = N/A; f) vegetation community zonation = 6, due to sparse cover; g) hydrologic stress on vegetation = 6, stress from increased salinity; h) use by animal species with specific hydrological requirements = 7, slighly less than expected; i) vegetative species tolerant of and associated with water quality degradation = 7, species tolerant of high salinities present; j) direct observation of water quality = 8, no sheen or discoloration; K) existing water quality data = 6, due to high salinity; l) water depth wave, wave energy, currents and light penetration = N/A.
.500(6)(c)Community structure 1. Vegetation and/or 2. Benthic Community	w/o pres or current: 9	with: 0	The community structure variable is high due to species diversity and presence of natural, native vegetation. Individual parameter scores: a) plant community species in the canopy, shrub, or ground stratum = 7, mostly dominated by native species; b) invasive exotics or other invasive plant species = 7, some coverage; c) regeneration and recruitment = 7, some evidence of recruitment; d) age & size distribution = 7, lower water levels possibly affecting age distribution; e) density and quality of coarse woody debris, snag, den, and cavity = 7, slightly consistent with expected; f) plant condition = 7, low recruitment; g) land management practices = 7, some alteration evident; h) topographic features = 7, some present; i) siltation or algal growth in submerged aquatic plant communities = N/A.

Score = sum of above scores/30 (if uplands, divide by 20)	
current or w/o pres: 0.80	with: 0

If preservation as mitigation,
Preservation adjustment factor =
Adjusted mitigation delta =

For impact assessment areas
FL = delta x acres = -0.8 x 0.78 = **0.62**

Delta = [with-current]
-0.80

If mitigation
Time lag (t-factor) =
Risk factor =

For mitigation assessment areas
RFG = delta/(t-factor x risk) =

Form 62-345.900(2), F.A.C. [effective date]

PART I – Qualitative Description
(See Section 62-345.400, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
FPL Turkey Point Units 6 & 7/Associated Facilities/Treated Reclaimed Water Delivery Pipelines		Dwarf Mangroves

FLUCCs code	Further classification (optional)	Impact or Mitigation Site?	Assessment Area Size
612-B		Impact	3.1 acres

Basin/Watershed Name/Number	Affected Waterbody (Class)	Special Classification (i.e.OFW, AP, other local/state/federal designation of importance)
DA-4/03090202		None

Geographic relationship to and hydrologic connection with wetlands, other surface water, uplands

This area currently drains north and east through mangrove swamps toward Biscayne Bay.

Assessment area description

The area consists of dwarf red mangroves and sawgrass. The majority of the mangrove community in this area experiences sheet flow-type flushing of tidal waters, and exhibits increased salinity with decreased nitrogen and phosphorus available for plant uptake. The dwarf mangrove community contains mangroves less than 24 inches in height, stunted in response to decreased nutrient availability and increased salinity. Other vegetation includes black mangrove, white mangrove, buttonwood, sea grape, Brazilian pepper, wax myrtle, poisonwood, cocoplum, and Australian pine.

Significant nearby features	Uniqueness (considering the relative rarity in relation to the regional landscape.)
FPL Turkey Point Plant, Biscayne Bay, Model Lands Basin	Not unique

Functions	Mitigation for previous permit/other historic use
Water storage, drainage	N/A

Anticipated Wildlife Utilization Based on Literature Review (List of species that are representative of the assessment area and reasonably expected to be found)	Anticipated Utilization by Listed Species (List species, their legal classification (E, T, SSC), type of use, and intensity of use of the assessment area)
Wading birds, forage fishes	Occasional use by wading birds such as roseate spoonbill (SSC), white ibis (SSC), little blue heron (SSC), wood stork (E), reddish egret (SSC), snowy egret (SSC) and tricolored heron (SSC) as well as white-crowned pigeon (T).

Observed Evidence of Wildlife Utilization (List species directly observed, or other signs such as tracks, droppings, casings, nests, etc.):

None

Additional relevant factors:

Assessment conducted by:	Assessment date(s):
S. Rizzo	9/23/2008

PART II – Quantification of Assessment Area (impact or mitigation)
(See Sections 62-345.500 and .600, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
FPL Turkey Point Units 6 & 7/Associated Facilities/Treated Reclaimed Water Delivery Pipelines		Dwarf Mangroves
Impact or Mitigation	Assessment conducted by:	Assessment date:
Impact	S. Rizzo	9/23/2008

Scoring Guidance	Optimal (10)	Moderate(7)	Minimal (4)	Not Present (0)
The scoring of each indicator is based on what would be suitable for the type of wetland or surface water assessed	Condition is optimal and fully supports wetland/surface water functions	Condition is less than optimal, but sufficient to maintain most wetland/surface waterfunctions	Minimal level of support of wetland/surface water functions	Condition is insufficient to provide wetland/surface water functions

.500(6)(a) Location and Landscape Support	w/o pres or current: 7 / with: 0	Location and landscape support variable is slightly reduced due to proximity of FPL Turkey Point Plant main plant road and slight isolation from surrounding mangrove swamps. Individual parameter scores: a) Support to wildlife listed in Part 1 by outside habitats = 7, due to proximity of nearby roadways; b) Invasive exotic species = 7, some exotics species present; c) Wildlife access to and from outside = 7, decreased due to slight isolation from other habitats due to roadways; d) functions that benefit fish & wildlife downstream-distance or barriers = 7, decreased due to slight isolation from other habitats due to roadways; e) Impacts to wildlife listed in Part 1 by outside land uses = 7, surrounding habitats relatively undisturbed with exception of roadways; f) Hydrologically connected areas downstream of assessment area = 7, hydrologically connected but some impacts due to roadways; g) Dependency of downstream areas on assessment area = 6, some benefit to downstream areas.
.500(6)(b)Water Environment (n/a for uplands)	w/o pres or current: 8 / with: 0	The water environment score is somewhat reduced due to the slight hydrological isolation from surrounding roadways and increased salinity. Individual parameter scores: a) water levels and flows = 7, slightly less than expected; b) water level indicators = 7, slightly less than expected; c) soil moisture = 9, consistent with expected; d) soil erosion or deposition = 9, typical patterns; e) evidence of fire history = N/A; f) vegetation community zonation = 6, due to sparse cover; g) hydrologic stress on vegetation = 6, stress from high salinity; h) use by animal species with specific hydrological requirements = 7, slighly less than expected; i) vegetative species tolerant of and associated with water quality degradation = 7, species tolerant of high salinities present; j) direct observation of water quality = 8, no sheen or discoloration; K) existing water quality data = 6, due to high salinity; l) water depth wave, wave energy, currents and light penetration = N/A.
.500(6)(c)Community structure 1. Vegetation and/or 2. Benthic Community	w/o pres or current: 8 / with: 0	The community structure variable is slightly reduced due to high salinity. Individual parameter scores: a) plant community species in the canopy, shrub, or ground stratum = 9, mostly all desirable species; b) invasive exotics or other invasive plant species = 9, very few present; c) regeneration and recruitment = 7, near normal recruitment; d) age & size distribution = 7, atypical due to high salinity; e) density and quality of coarse woody debris, snag, den, and cavity = N/A; f) plant condition = 7, generally good plant condition; g) land management practices = 8, h) topographic features = 9, slightly less than optimal; i) siltation or algal growth in submerged aquatic plant communities = N/A.

Score = sum of above scores/30 (if uplands, divide by 20)	
current or w/o pres	with
0.77	0

Delta = [with-current]
-0.77

If preservation as mitigation,
Preservation adjustment factor =
Adjusted mitigation delta =

If mitigation
Time lag (t-factor) =
Risk factor =

For impact assessment areas
FL = delta x acres = -0.77 x 3.1 = **2.4 (to be restored *in-situ*)**

For mitigation assessment areas
RFG = delta/(t-factor x risk) =

Form 62-345.900(2), F.A.C. [effective date]

PART I – Qualitative Description
(See Section 62-345.400, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
FPL Turkey Point Units 6 & 7/Associated Facilities/Treated Reclaimed Water Delivery Pipelines		Mixed Wetland Hardwoods

FLUCCs code	Further classification (optional)	Impact or Mitigation Site?	Assessment Area Size
617		Impact	0.3 acres

Basin/Watershed Name/Number	Affected Waterbody (Class)	Special Classification (i.e.OFW, AP, other local/state/federal designation of importance)
DA-4/03090202		None

Geographic relationship to and hydrologic connection with wetlands, other surface water, uplands

Hydrologically connected to surrounding mangrove swamps, exotic wetlands and freshwater marshes.

Assessment area description

Several areas of mixed wetland hardwood/mixed forested wetland communities are present within the pipeline area These areas are comprised of a variety of canopy species, including buttonwood, Australian pine, cocoplum, red mangrove, Brazilian pepper, cabbage palm, and willow.

Significant nearby features	Uniqueness (considering the relative rarity in relation to the regional landscape.)
FPL Turkey Point Plant, Biscayne Bay	Not unique

Functions	Mitigation for previous permit/other historic use
Water storage, wildlife habitat	N/A

Anticipated Wildlife Utilization Based on Literature Review (List of species that are representative of the assessment area and reasonably expected to be found)	Anticipated Utilization by Listed Species (List species, their legal classification (E, T, SSC), type of use, and intensity of use of the assessment area)
Wading birds, shorebirds, forage fishes	Occasional use by wading birds such as roseate spoonbill (SSC), white ibis (SSC), little blue heron (SSC), wood stork (E), reddish egret (SSC), snowy egret (SSC) and tricolored heron (SSC). Also white-crowned pigeon (T).

Observed Evidence of Wildlife Utilization (List species directly observed, or other signs such as tracks, droppings, casings, nests, etc.):

None

Additional relevant factors:

Assessment conducted by:	Assessment date(s):
S. Rizzo	1/9/2009

Form 62-345.900(1), F.A.C. [effective date]

PART II – Quantification of Assessment Area (impact or mitigation)
(See Sections 62-345.500 and .600, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
FPL Turkey Point Units 6 & 7/Associated Facilities/Treated Reclaimed Water Delivery Pipelines		Mixed Wetland Hardwoods
Impact or Mitigation	Assessment conducted by:	Assessment date:
Impact	S. Rizzo	1/9/2009

Scoring Guidance	Optimal (10)	Moderate (7)	Minimal (4)	Not Present (0)
The scoring of each indicator is based on what would be suitable for the type of wetland or surface water assessed	Condition is optimal and fully supports wetland/surface water functions	Condition is less than optimal, but sufficient to maintain most wetland/surface waterfunctions	Minimal level of support of wetland/surface water functions	Condition is insufficient to provide wetland/surface water functions

.500(6)(a) Location and Landscape Support	w/o pres or current: 7	with: 0	Location and landscape support variable is slightly reduced due to proximity of existing Turkey Point facility. Individual parameter scores: a) Support to wildlife listed in Part 1 by outside habitats = 7, due to proximity of Biscayne Bay; b) Invasive exotic species = 7, minimal coverage; c) Wildlife access to and from outside = 7, some limitations; d) functions that benefit fish & wildlife downstream-distance or barriers = 7, some barriers; e) Impacts to wildlife listed in Part 1 by outside land uses = 7, slightly reduced due to proximity of Turkey Point facility; f) Hydrologically connected areas downstream of assessment area = 7, some hydrological impairments; g) Dependency of downstream areas on assessment area = 7, some benefits to downstream areas.
.500(6)(b)Water Environment (n/a for uplands)	w/o pres or current: 7	with: 0	The water environment score is slightly reduced due to water levels lower than expected. Individual parameter scores: a) water levels and flows = 7, slightly lower than expected; b) water level indicators = 7, slightly lower than expected; c) soil moisture = 7, slightly consistent with expected; d) soil erosion or deposition = 7, some observed; e) evidence of fire history = N/A; f) vegetation community zonation = 7, slightly consistent with expected; g) hydrologic stress on vegetation = 7, due to lower water levels; h) use by animal species with specific hydrological requirements = 7, some evidence observed; i) vegetative species tolerant of and associated with water quality degradation = 7, some observed; j) direct observation of water quality = N/A; k) existing water quality data = N/A; l) water depth wave, wave energy, currents and light penetration = N/A.
.500(6)(c)Community structure 1. Vegetation and/or 2. Benthic Community	w/o pres or current: 7	with: 0	The community structure variable is high due to species diversity and presence of natural, native vegetation. Individual parameter scores: a) plant community species in the canopy, shrub, or ground stratum = 7, mostly dominated by native species; b) invasive exotics or other invasive plant species = 7, some coverage; c) regeneration and recruitment = 7, some evidence of recruitment; d) age & size distribution = 7, lower water levels possibly affecting age distribution; e) density and quality of coarse woody debris, snag, den, and cavity = 7, slightly consistent with expected; f) plant condition = 7, low recruitment; g) land management practices = 7, some alteration evident; h) topographic features = 7, some present; i) siltation or algal growth in submerged aquatic plant communities = N/A.

Score = sum of above scores/30 (if uplands, divide by 20)	
current or w/o pres: 0.70	with: 0

Delta = [with-current]
-0.70

If preservation as mitigation,
Preservation adjustment factor =
Adjusted mitigation delta =

If mitigation
Time lag (t-factor) =
Risk factor =

For impact assessment areas
FL = delta x acres = -0.7 x 0.3 = **0.21 (to be restored *in-situ*)**

For mitigation assessment areas
RFG = delta/(t-factor x risk) =

Form 62-345.900(2), F.A.C. [effective date]

PART I – Qualitative Description
(See Section 62-345.400, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
FPL Turkey Point Units 6 & 7/Associated Facilities/Reclaimed Water Pipelines		Canals, Ditches, and Reservoirs

FLUCCs code	Further classification (optional)	Impact or Mitigation Site?	Assessment Area Size
510, 511, 530		Impact	5.4 acres

Basin/Watershed Name/Number	Affected Waterbody (Class)	Special Classification (i.e.OFW, AP, other local/state/federal designation of importance)
C-1, DA-4, C-102, C-103, North Canal, Florida City/03090202		None

Geographic relationship to and hydrologic connection with wetlands, other surface water, uplands

Hydrologically connected to surrounding mangrove swamps, mixed wetland hardwoods and freshwater marshes.

Assessment area description

A total of seven crossings of man-made canals are crossed by the proposed reclaimed water pipelines. Drainage ditches typically occur on the borders of roadside rights-of-way, freshwater marshes, mangroves, and mixed hardwood wetlands. In-stream vegetation is minimal within the man made canals along the proposed reclaimed water pipelines corridor, due to the steep slopes and minimal littoral zone. Emergent and floating leaved species typical of the canals include spatterdock, water lettuce, and water hyacinth, while the banks contain beggarticks, primrose willow, Brazilian pepper, willow, and ragweed.

Significant nearby features	Uniqueness (considering the relative rarity in relation to the regional landscape.)
FPL Turkey Point Plant, Biscayne Bay	Not unique

Functions	Mitigation for previous permit/other historic use
Water storage, drainage	N/A

Anticipated Wildlife Utilization Based on Literature Review (List of species that are representative of the assessment area and reasonably expected to be found)	Anticipated Utilization by Listed Species (List species, their legal classification (E, T, SSC), type of use, and intensity of use of the assessment area)
Wading birds, forage fishes	Occasional use by wading birds such as roseate spoonbill (SSC), white ibis (SSC), little blue heron (SSC), wood stork (E), reddish egret (SSC), snowy egret (SSC) and tricolored heron (SSC) as well as white-crowned pigeon (T). Reptiles such as American alligator (TSA).

Observed Evidence of Wildlife Utilization (List species directly observed, or other signs such as tracks, droppings, casings, nests, etc.):

None

Additional relevant factors:

Assessment conducted by:	Assessment date(s):
S. Rizzo	1/9/2009

PART II – Quantification of Assessment Area (impact or mitigation)
(See Sections 62-345.500 and .600, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
FPL Turkey Point Units 6 & 7/Associated Facilities/Reclaimed Water Pipelines		Canals, Ditches, and Reservoirs
Impact or Mitigation	Assessment conducted by:	Assessment date:
Impact	S. Rizzo	1/9/2009

Scoring Guidance	Optimal (10)	Moderate(7)	Minimal (4)	Not Present (0)
The scoring of each indicator is based on what would be suitable for the type of wetland or surface water assessed	Condition is optimal and fully supports wetland/surface water functions	Condition is less than optimal, but sufficient to maintain most wetland/surface waterfunctions	Minimal level of support of wetland/surface water functions	Condition is insufficient to provide wetland/surface water functions

.500(6)(a) Location and Landscape Support	w/o pres or current: 5	with: 0	Location and landscape support variable is reduced due to proximity of roadways and transmission line right-of-way. Individual parameter scores: a) Support to wildlife listed in Part 1 by outside habitats = 5, due to proximity of nearby roadways; b) Invasive exotic species = 5, common occurrence within assessment area; c) Wildlife access to and from outside = 5, decreased due to roadway barriers; d) functions that benefit fish & wildlife downstream-distance or barriers = 5; e) Impacts to wildlife listed in Part 1 by outside land uses = 5, surrounding habitats disturbed by roadways; f) Hydrologically connected areas downstream of assessment area = 5; g) Dependency of downstream areas on assessment area = 4, little benefit to downstream areas.
.500(6)(b)Water Environment (n/a for uplands)	w/o pres or current: 5	with: 0	The water environment score is somewhat reduced due to the artificial nature of the canal/ditch system. Individual parameter scores: a) water levels and flows = 4, no flow evident; b) water level indicators = 6, consistent with expected; c) soil moisture = 6, consistent with expected; d) soil erosion or deposition = 4, erosion evident; e) evidence of fire history = N/A; f) vegetation community zonation = 6, appropriate for community type; g) hydrologic stress on vegetation = 6, relatively minimal; h) use by animal species with specific hydrological requirements = 6, consistent with expected; i) vegetative species tolerant of and associated with water quality degradation = 6, some pollution tolerant species present; j) direct observation of water quality = 6, no sheen or discoloration; K) existing water quality data = N/A; l) water depth wave, wave energy, currents and light penetration = N/A.
.500(6)(c)Community structure 1. Vegetation and/or 2. Benthic Community	w/o pres or current: 5	with: 0	The community structure variable is reduced due to artificial nature of the canal/ditch system. Individual parameter scores: a) plant community species in the canopy, shrub, or ground stratum = 4, dominated by exotic species; b) invasive exotics or other invasive plant species = 4, compose majority of coverage; c) regeneration and recruitment = 7, near normal recruitment; d) age & size distribution = 7, slightly atypical; e) density and quality of coarse woody debris, snag, den, and cavity = 5, due to excavated canal banks; f) plant condition = 7, generally good plant condition; g) land management practices = 5, due to alteration of community structure and hydroperiod; h) topographic features = 5, less than optimal; i) siltation or algal growth in submerged aquatic plant communities = 7, minor algal growth.

Score = sum of above scores/30 (if uplands, divide by 20)	
current or w/o pres: 0.50	with: 0

Delta = [with-current]
-0.50

If preservation as mitigation,
Preservation adjustment factor =
Adjusted mitigation delta =

If mitigation
Time lag (t-factor) =
Risk factor =

For impact assessment areas
FL = delta x acres = -0.5 x 5.4 = **2.7 (to be restored *in-situ*)**

For mitigation assessment areas
RFG = delta/(t-factor x risk) =

Form 62-345.900(2), F.A.C. [effective date]

PART I – Qualitative Description
(See Section 62-345.400, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
FPL Turkey Point Units 6 & 7/Associated Facilities/Reclaimed Water Pipelines		Mangrove Swamps

FLUCCs code	Further classification (optional)	Impact or Mitigation Site?	Assessment Area Size
612		Impact	18.6 acres

Basin/Watershed Name/Number	Affected Waterbody (Class)	Special Classification (i.e.OFW, AP, other local/state/federal designation of importance)
C-1, DA-4, C-102, C-103, North Canal, Florida City/03090202		None

Geographic relationship to and hydrologic connection with wetlands, other surface water, uplands

Hydrologically connected to surrounding mixed wetland hardwoods and freshwater marshes.

Assessment area description

Areas of coastal mangroves occur within the proposed corridor predominantly to the east of the existing transmission line right-of-way. These areas are dominated by a mixture of red mangrove and black mangrove which are present in pure or predominant stands. Subdominant species include white mangrove buttonwood, Brazilian pepper, cocoplum, sea grape, half-flower, salt grass, and occasional Australian pine.

Significant nearby features	Uniqueness (considering the relative rarity in relation to the regional landscape.)
FPL Turkey Point Plant, Biscayne Bay	Not unique

Functions	Mitigation for previous permit/other historic use
Water storage	N/A

Anticipated Wildlife Utilization Based on Literature Review (List of species that are representative of the assessment area and reasonably expected to be found)	Anticipated Utilization by Listed Species (List species, their legal classification (E, T, SSC), type of use, and intensity of use of the assessment area)
Passerine birds and other wildlife typical to the region	Occasional use by wading birds such as roseate spoonbill (SSC), white ibis (SSC), little blue heron (SSC), wood stork (E), reddish egret (SSC), snowy egret (SSC) and tricolored heron (SSC) as well as white-crowned pigeon (T). Reptiles such as American alligator (TSA).

Observed Evidence of Wildlife Utilization (List species directly observed, or other signs such as tracks, droppings, casings, nests, etc.):

None

Additional relevant factors:

Assessment conducted by:	Assessment date(s):
S. Rizzo	1/9/2009

Form 62-345.900(1), F.A.C. [effective date]

PART II – Quantification of Assessment Area (impact or mitigation)
(See Sections 62-345.500 and .600, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
FPL Turkey Point Units 6 & 7/Associated Facilities/Reclaimed Water Pipelines		Mangrove Swamps
Impact or Mitigation	Assessment conducted by:	Assessment date:
Impact	S. Rizzo	1/9/2009

Scoring Guidance	Optimal (10)	Moderate(7)	Minimal (4)	Not Present (0)
The scoring of each indicator is based on what would be suitable for the type of wetland or surface water assessed	Condition is optimal and fully supports wetland/surface water functions	Condition is less than optimal, but sufficient to maintain most wetland/surface waterfunctions	Minimal level of support of wetland/surface water functions	Condition is insufficient to provide wetland/surface water functions

.500(6)(a) Location and Landscape Support	w/o pres or current: 7	with: 0

Location and landscape support variable is slightly reduced due to proximity of existing Turkey Point facility and roadways. Individual parameter scores: a) Support to wildlife listed in Part 1 by outside habitats = 7, due to proximity of roadways and Turkey Point Plant; b) Invasive exotic species = 7, some coverage; c) Wildlife access to and from outside = 7, mostly unlimited access; d) functions that benefit fish & wildlife downstream-distance or barriers = 7, few impedences to downstream areas; e) Impacts to wildlife listed in Part 1 by outside land uses = 7, slightly reduced due to proximity of Turkey Point facility; f) Hydrologically connected areas downstream of assessment area = 7, few impedence to downstream areas; g) Dependency of downstream areas on assessment area = 7, some benefit to downstream areas.

.500(6)(b)Water Environment (n/a for uplands)	w/o pres or current: 8	with: 0

The water environment score is slightly reduced due to the atypical vegetation community zonation due to presence of exotic species. Individual parameter scores: a) water levels and flows = 8, consistent with expected; b) water level indicators = 8, consistent with expected; c) soil moisture = 8, consistent with expected; d) soil erosion or deposition = 8, consistent with expected; e) evidence of fire history = N/A; f) vegetation community zonation = 8, typical for the habitat; g) hydrologic stress on vegetation = 8, no stress noted; h) use by animal species with specific hydrological requirements = 8, consistent with expected; i) vegetative species tolerant of and associated with water quality degradation = 8, none observed; j) direct observation of water quality = N/A; k) existing water quality data = N/A; l) water depth wave, wave energy, currents and light penetration = N/A.

.500(6)(c)Community structure 1. Vegetation and/or 2. Benthic Community	w/o pres or current: 8	with: 0

The community structure variable is reduced due to low species diversity resulting from presence of exotics. Individual parameter scores: a) plant community species in the canopy, shrub, or ground stratum = 8, few to no exotic species; b) invasive exotics or other invasive plant species = 8, minimal coverage; c) regeneration and recruitment = 8, consistent with expected; d) age & size distribution = 8, consistent with expected; e) density and quality of coarse woody debris, snag, den, and cavity = 8, adequate for system type; f) plant condition = 8, consistent with expected; g) land management practices = 8, limited alteration of community structure; h) topographic features = 8, mostly optimal; i) siltation or algal growth in submerged aquatic plant communities = N/A.

Score = sum of above scores/30 (if uplands, divide by 20)	
current or w/o pres	with
0.77	0

Delta = [with-current]
-0.77

If preservation as mitigation,
Preservation adjustment factor =
Adjusted mitigation delta =

If mitigation
Time lag (t-factor) =
Risk factor =

For impact assessment areas
FL = delta x acres = -0.77 x 18.6 = **14.3** **(to be restored *in-situ*)**

For mitigation assessment areas
RFG = delta/(t-factor x risk) =

Form 62-345.900(2), F.A.C. [effective date]

PART I – Qualitative Description
(See Section 62-345.400, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
FPL Turkey Point Units 6 & 7/Associated Facilities/Reclaimed Water Pipelines		Mangrove/Exotic Wetland Hardwoods

FLUCCs code	Further classification (optional)	Impact or Mitigation Site?	Assessment Area Size
612/619		Impact	5.2 acres

Basin/Watershed Name/Number	Affected Waterbody (Class)	Special Classification (i.e.OFW, AP, other local/state/federal designation of importance)
C-1, DA-4, C-102, C-103, North Canal, Florida City/03090202		None

Geographic relationship to and hydrologic connection with wetlands, other surface water, uplands

Hydrologically connected to surrounding mangrove swamps, mixed wetland hardwoods and freshwater marshes.

Assessment area description

Areas of exotic wetland hardwoods occur within the corridor, intermixed with mangrove swamps. These wetlands are dominated by the nuisance exotic species Brazilian pepper, with subdominant species including Australian pine, willow, groundsel tree, elderberry, primrose willow, cattail, paragrass, and torpedo grass.

Significant nearby features	Uniqueness (considering the relative rarity in relation to the regional landscape.)
FPL Turkey Point Plant, Biscayne Bay	Not unique

Functions	Mitigation for previous permit/other historic use
Water storage, wildlife habitat	N/A

Anticipated Wildlife Utilization Based on Literature Review (List of species that are representative of the assessment area and reasonably expected to be found)	Anticipated Utilization by Listed Species (List species, their legal classification (E, T, SSC), type of use, and intensity of use of the assessment area)
Wading birds, shorebirds, forage fishes	Occasional use by wading birds such as roseate spoonbill (SSC), white ibis (SSC), little blue heron (SSC), wood stork (E), reddish egret (SSC), snowy egret (SSC) and tricolor heron (SSC). Also white-crowned pigeon (T).

Observed Evidence of Wildlife Utilization (List species directly observed, or other signs such as tracks, droppings, casings, nests, etc.):

None

Additional relevant factors:

Assessment conducted by:	Assessment date(s):
S. Rizzo	1/9/2009

Form 62-345.900(1), F.A.C. [effective date]

PART II – Quantification of Assessment Area (impact or mitigation)
(See Sections 62-345.500 and .600, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
FPL Turkey Point Units 6 & 7/Associated Facilities/Reclaimed Water Pipelines		Mangrove/Exotic Wetland Hardwoods
Impact or Mitigation	Assessment conducted by:	Assessment date:
Impact	S. Rizzo	1/9/2009

Scoring Guidance	Optimal (10)	Moderate (7)	Minimal (4)	Not Present (0)
The scoring of each indicator is based on what would be suitable for the type of wetland or surface water assessed	Condition is optimal and fully supports wetland/surface water functions	Condition is less than optimal, but sufficient to maintain most wetland/surface waterfunctions	Minimal level of support of wetland/surface water functions	Condition is insufficient to provide wetland/surface water functions

.500(6)(a) Location and Landscape Support	w/o pres or current: 6	with: 0	Location and landscape support variable is slightly reduced due to proximity of existing Turkey Point facility, roadways, mining, and transmission line right-of-way. Individual parameter scores: a) Support to wildlife listed in Part 1 by outside habitats = 6, due to adjacent disturbances; b) Invasive exotic species = 6, many present; c) Wildlife access to and from outside = 6, some limitations; d) functions that benefit fish & wildlife downstream-distance or barriers = 6, some barriers; e) Impacts to wildlife listed in Part 1 by outside land uses = 6, reduced due to proximity of Turkey Point facility, roadways, mining, and transmission line right-of-way; f) Hydrologically connected areas downstream of assessment area = 6, several hydrological impairments; g) Dependency of downstream areas on assessment area = 6, some benefits to downstream areas.
.500(6)(b)Water Environment (n/a for uplands)	w/o pres or current: 6	with: 0	The water environment score is slightly reduced due to water levels lower than expected and presence of ditches. Individual parameter scores: a) water levels and flows = 6, slightly lower than expected; b) water level indicators = 6, slightly lower than expected; c) soil moisture = 6, drier than expected; d) soil erosion or deposition = 6, some observed; e) evidence of fire history = N/A; f) vegetation community zonation = 6, exotics present; g) hydrologic stress on vegetation = 6, due to lower water levels; h) use by animal species with specific hydrological requirements = 6, few evidence observed; i) vegetative species tolerant of and associated with water quality degradation = 6, few observed; j) direct observation of water quality = N/A; k) existing water quality data = N/A; l) water depth wave, wave energy, currents and light penetration = N/A.
.500(6)(c)Community structure 1. Vegetation and/or 2. Benthic Community	w/o pres or current: 6	with: 0	The community structure variable is reduced due to presence of exotic vegetation. Individual parameter scores: a) plant community species in the canopy, shrub, or ground stratum = 6, dominated by exotic species; b) invasive exotics or other invasive plant species = 6, many present; c) regeneration and recruitment = 6, some evidence of recruitment; d) age & size distribution = 6, lower water levels possibly affecting age distribution; e) density and quality of coarse woody debris, snag, den, and cavity = 6, less than expected; f) plant condition = 6, low recruitment; g) land management practices = 6, alteration evident; h) topographic features = 6, less than optimal; i) siltation or algal growth in submerged aquatic plant communities = N/A.

Score = sum of above scores/30 (if uplands, divide by 20)	
current or w/o pres	with
0.60	0

Delta = [with-current]
-0.60

If preservation as mitigation,
Preservation adjustment factor =
Adjusted mitigation delta =

If mitigation
Time lag (t-factor) =
Risk factor =

For impact assessment areas
FL = delta x acres = -0.60 x 5.2 = **3.1 (to be restored *in-situ*)**

For mitigation assessment areas
RFG = delta/(t-factor x risk) =

Form 62-345.900(2), F.A.C. [effective date]

PART I – Qualitative Description
(See Section 62-345.400, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
FPL Turkey Point Units 6 & 7/Associated Facilities/Reclaimed Water Pipelines		Mixed Wetland Hardwoods

FLUCCs code	Further classification (optional)	Impact or Mitigation Site?	Assessment Area Size
617		Impact	8.6 acres

Basin/Watershed Name/Number	Affected Waterbody (Class)	Special Classification (i.e.OFW, AP, other local/state/federal designation of importance)
C-1, DA-4, C-102, C-103, North Canal, Florida City/03090202		None

Geographic relationship to and hydrologic connection with wetlands, other surface water, uplands

Hydrologically connected to surrounding mangrove swamps, exotic wetlands and freshwater marshes.

Assessment area description

Several areas of mixed wetland hardwood/mixed forested wetland communities are present within the corridor. These areas are comprised of a variety of canopy species, including buttonwood, Australian pine, cocoplum, red mangrove, Brazilian pepper, cabbage palm, and willow.

Significant nearby features	Uniqueness (considering the relative rarity in relation to the regional landscape.)
FPL Turkey Point Plant, Biscayne Bay	Not unique

Functions	Mitigation for previous permit/other historic use
Water storage, wildlife habitat	N/A

Anticipated Wildlife Utilization Based on Literature Review (List of species that are representative of the assessment area and reasonably expected to be found)	Anticipated Utilization by Listed Species (List species, their legal classification (E, T, SSC), type of use, and intensity of use of the assessment area)
Wading birds, shorebirds, forage fishes	Occasional use by wading birds such as roseate spoonbill (SSC), white ibis (SSC), little blue heron (SSC), wood stork (E), reddish egret (SSC), snowy egret (SSC) and tricolored heron (SSC). Also white-crowned pigeon (T).

Observed Evidence of Wildlife Utilization (List species directly observed, or other signs such as tracks, droppings, casings, nests, etc.):

None

Additional relevant factors:

Assessment conducted by:	Assessment date(s):
S. Rizzo	1/9/2009

Form 62-345.900(1), F.A.C. [effective date]

PART II – Quantification of Assessment Area (impact or mitigation)
(See Sections 62-345.500 and .600, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
FPL Turkey Point Units 6 & 7/Associated Facilities/Reclaimed Water Pipelines		Mixed Wetland Hardwoods
Impact or Mitigation	Assessment conducted by:	Assessment date:
Impact	S. Rizzo	1/9/2009

Scoring Guidance	Optimal (10)	Moderate (7)	Minimal (4)	Not Present (0)
The scoring of each indicator is based on what would be suitable for the type of wetland or surface water assessed	Condition is optimal and fully supports wetland/surface water functions	Condition is less than optimal, but sufficient to maintain most wetland/surface waterfunctions	Minimal level of support of wetland/surface water functions	Condition is insufficient to provide wetland/surface water functions

.500(6)(a) Location and Landscape Support	w/o pres or current: 7	with: 0	Location and landscape support variable is slightly reduced due to proximity of existing Turkey Point facility. Individual parameter scores: a) Support to wildlife listed in Part 1 by outside habitats = 7, due to proximity of Biscayne Bay; b) Invasive exotic species = 7, minimal coverage; c) Wildlife access to and from outside = 7, some limitations; d) functions that benefit fish & wildlife downstream-distance or barriers = 7, some barriers; e) Impacts to wildlife listed in Part 1 by outside land uses = 7, slightly reduced due to proximity of Turkey Point facility; f) Hydrologically connected areas downstream of assessment area = 7, some hydrological impairments; g) Dependency of downstream areas on assessment area = 7, some benefits to downstream areas.
.500(6)(b)Water Environment (n/a for uplands)	w/o pres or current: 7	with: 0	The water environment score is slightly reduced due to water levels lower than expected. Individual parameter scores: a) water levels and flows = 7, slightly lower than expected; b) water level indicators = 7, slightly lower than expected; c) soil moisture = 7, slightly consistent with expected; d) soil erosion or deposition = 7, some observed; e) evidence of fire history = N/A; f) vegetation community zonation = 7, slightly consistent with expected; g) hydrologic stress on vegetation = 7, due to lower water levels; h) use by animal species with specific hydrological requirements = 7, some evidence observed; i) vegetative species tolerant of and associated with water quality degradation = 7, some observed; j) direct observation of water quality = N/A; k) existing water quality data = N/A; l) water depth wave, wave energy, currents and light penetration = N/A.
.500(6)(c)Community structure 1. Vegetation and/or 2. Benthic Community	w/o pres or current: 7	with: 0	The community structure variable is high due to species diversity and presence of natural, native vegetation. Individual parameter scores: a) plant community species in the canopy, shrub, or ground stratum = 7, mostly dominated by native species; b) invasive exotics or other invasive plant species = 7, some coverage; c) regeneration and recruitment = 7, some evidence of recruitment; d) age & size distribution = 7, lower water levels possibly affecting age distribution; e) density and quality of coarse woody debris, snag, den, and cavity = 7, slightly consistent with expected; f) plant condition = 7, low recruitment; g) land management practices = 7, some alteration evident; h) topographic features = 7, some present; i) siltation or algal growth in submerged aquatic plant communities = N/A.

Score = sum of above scores/30 (if uplands, divide by 20)	
current or w/o pres: 0.70	with: 0

Delta = [with-current]
-0.70

If preservation as mitigation,
Preservation adjustment factor =
Adjusted mitigation delta =

If mitigation
Time lag (t-factor) =
Risk factor =

For impact assessment areas
FL = delta x acres = -0.70 x 8.6 = **6.0 (to be restored *in-situ*)**

For mitigation assessment areas
RFG = delta/(t-factor x risk) =

Form 62-345.900(2), F.A.C. [effective date]

PART I – Qualitative Description
(See Section 62-345.400, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
FPL Turkey Point Units 6 & 7/Associated Facilities/Reclaimed Water Pipelines		Freshwater Marshes

FLUCCs code	Further classification (optional)	Impact or Mitigation Site?	Assessment Area Size
641		Impact	4.1 acres

Basin/Watershed Name/Number	Affected Waterbody (Class)	Special Classification (i.e.OFW, AP, other local/state/federal designation of importance)
C-1, DA-4, C-102, C-103, North Canal, Florida City/03090202		None

Geographic relationship to and hydrologic connection with wetlands, other surface water, uplands

Hydrologically connected to surrounding mangrove swamps, exotic wetlands and mixed forested wetlands.

Assessment area description

Areas of freshwater marsh occur within the reclaimed water pipeline corridor adjacent to and within the existing transmission line right-of-way. These areas are vegetated with predominantly herbaceous species, including primrose willow, sawgrass, and torpedo grass, as well as occasional shrub and canopy species such as willow, Brazilian pepper, buttonbush, cabbage palm, poisonwood, and Australian pine.

Significant nearby features	Uniqueness (considering the relative rarity in relation to the regional landscape.)
FPL Turkey Point Plant, Biscayne Bay	Not unique

Functions	Mitigation for previous permit/other historic use
Water storage, wildlife habitat	N/A

Anticipated Wildlife Utilization Based on Literature Review (List of species that are representative of the assessment area and reasonably expected to be found)	Anticipated Utilization by Listed Species (List species, their legal classification (E, T, SSC), type of use, and intensity of use of the assessment area)
Wading birds, shorebirds, forage fishes	Occasional use by wading birds such as roseate spoonbill (SSC), white ibis (SSC), little blue heron (SSC), wood stork (E), reddish egret (SSC), snowy egret (SSC) and tricolor heron (SSC). Also white-crowned pigeon (T).

Observed Evidence of Wildlife Utilization (List species directly observed, or other signs such as tracks, droppings, casings, nests, etc.):

None

Additional relevant factors:

Assessment conducted by:	Assessment date(s):
S. Rizzo	1/9/2009

PART II – Quantification of Assessment Area (impact or mitigation)
(See Sections 62-345.500 and .600, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
FPL Turkey Point Units 6 & 7/Associated Facilities/Reclaimed Water Pipelines		Freshwater Marshes
Impact or Mitigation	Assessment conducted by:	Assessment date:
Impact	S. Rizzo	Jun-08

Scoring Guidance	Optimal (10)	Moderate (7)	Minimal (4)	Not Present (0)
The scoring of each indicator is based on what would be suitable for the type of wetland or surface water assessed	Condition is optimal and fully supports wetland/surface water functions	Condition is less than optimal, but sufficient to maintain most wetland/surface waterfunctions	Minimal level of support of wetland/surface water functions	Condition is insufficient to provide wetland/surface water functions

.500(6)(a) Location and Landscape Support	w/o pres or current: 7	with: 0	Location and landscape support variable is slightly reduced due to proximity of existing Turkey Point facility. Individual parameter scores: a) Support to wildlife listed in Part 1 by outside habitats = 7, due to proximity of Biscayne Bay; b) Invasive exotic species = 7, minimal coverage; c) Wildlife access to and from outside = 7, some limitations; d) functions that benefit fish & wildlife downstream-distance or barriers = 7, some barriers; e) Impacts to wildlife listed in Part 1 by outside land uses = 7, slightly reduced due to proximity of Turkey Point facility; f) Hydrologically connected areas downstream of assessment area = 7, some hydrological impairments; g) Dependency of downstream areas on assessment area = 7, some benefits to downstream areas.
.500(6)(b)Water Environment (n/a for uplands)	w/o pres or current: 7	with: 0	The water environment score is slightly reduced due to water levels lower than expected. Individual parameter scores: a) water levels and flows = 7, slightly lower than expected; b) water level indicators = 7, slightly lower than expected; c) soil moisture = 7, slightly consistent with expected; d) soil erosion or deposition = 7, some observed; e) evidence of fire history = N/A; f) vegetation community zonation = 7, slightly consistent with expected; g) hydrologic stress on vegetation = 7, due to lower water levels; h) use by animal species with specific hydrological requirements = 7, some evidence observed; i) vegetative species tolerant of and associated with water quality degradation = 7, some observed; j) direct observation of water quality = N/A; k) existing water quality data = N/A; l) water depth wave, wave energy, currents and light penetration = N/A.
.500(6)(c)Community structure 1. Vegetation and/or 2. Benthic Community	w/o pres or current: 7	with: 0	The community structure variable is high due to species diversity and presence of natural, native vegetation. Individual parameter scores: a) plant community species in the canopy, shrub, or ground stratum = 7, mostly dominated by native species; b) invasive exotics or other invasive plant species = 7, some coverage; c) regeneration and recruitment = 7, some evidence of recruitment; d) age & size distribution = 7, lower water levels possibly affecting age distribution; e) density and quality of coarse woody debris, snag, den, and cavity = 7, slightly consistent with expected; f) plant condition = 7, low recruitment; g) land management practices = 7, some alteration evident; h) topographic features = 7, some present; i) siltation or algal growth in submerged aquatic plant communities = N/A.

Score = sum of above scores/30 (if uplands, divide by 20)	
current or w/o pres: 0.70	with: 0

Delta = [with-current]
-0.70

If preservation as mitigation,
Preservation adjustment factor =
Adjusted mitigation delta =

If mitigation
Time lag (t-factor) =
Risk factor =

For impact assessment areas
FL = delta x acres = -0.70 x 4.1 = **2.9 (to be restored *in-situ*)**

For mitigation assessment areas
RFG = delta/(t-factor x risk) =

Form 62-345.900(2), F.A.C. [effective date]

PART I – Qualitative Description
(See Section 62-345.400, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
FPL Turkey Point Units 6 & 7/Associated Facilities/Roadway Improvements		Canals/Ditches/Reservoirs

FLUCCs code	Further classification (optional)	Impact or Mitigation Site?	Assessment Area Size
510/511/534		Impact	7.3 acres

Basin/Watershed Name/Number	Affected Waterbody (Class)	Special Classification (i.e.OFW, AP, other local/state/federal designation of importance)
DA-4/Florida City/North Canal/03090202		None

Geographic relationship to and hydrologic connection with wetlands, other surface water, uplands

Adjacent to roadways. Hydrologically connected to surrounding mixed wetland hardwoods and freshwater marshes; however, does not appear to connect to a canal system or other surface water features.

Assessment area description

Canals and ditches are relatively free of emergent aquatic vegetation, although submerged aquatic vegetation is common. Most of the canals contain submerged aquatic vegetation, principally wigeongrass, with shoalweed and green algae also present.

Significant nearby features	Uniqueness (considering the relative rarity in relation to the regional landscape.)
FPL Turkey Point Plant, Biscayne Bay	Not unique

Functions	Mitigation for previous permit/other historic use
Water storage, drainage	N/A

Anticipated Wildlife Utilization Based on Literature Review (List of species that are representative of the assessment area and reasonably expected to be found)	Anticipated Utilization by Listed Species (List species, their legal classification (E, T, SSC), type of use, and intensity of use of the assessment area)
Wading birds, forage fishes	Occasional use by wading birds such as roseate spoonbill (SSC), white ibis (SSC), little blue heron (SSC), wood stork (E), reddish egret (SSC), snowy egret (SSC) and tricolored heron (SSC) as well as white-crowned pigeon (T). Reptiles such as American alligator (TSA).

Observed Evidence of Wildlife Utilization (List species directly observed, or other signs such as tracks, droppings, casings, nests, etc.):

American alligator was observed in the canal.

Additional relevant factors:

Assessment conducted by:	Assessment date(s):
K. Bullock, S. Rizzo	6/2/2008

Form 62-345.900(1), F.A.C. [effective date]

PART II – Quantification of Assessment Area (impact or mitigation)
(See Sections 62-345.500 and .600, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
FPL Turkey Point Units 6 & 7/Associated Facilities/Roadway Improvements		Canals/Ditches
Impact or Mitigation	Assessment conducted by:	Assessment date:
Impact	K. Bullock, S. Rizzo	6/2/2008

Scoring Guidance	Optimal (10)	Moderate(7)	Minimal (4)	Not Present (0)
The scoring of each indicator is based on what would be suitable for the type of wetland or surface water assessed	Condition is optimal and fully supports wetland/surface water functions	Condition is less than optimal, but sufficient to maintain most wetland/surface waterfunctions	Minimal level of support of wetland/surface water functions	Condition is insufficient to provide wetland/surface water functions

.500(6)(a) Location and Landscape Support	w/o pres or current: 5	with: 0	Location and landscape support variable is reduced due to proximity of Palm Drive and lack of connectivity of canal to other surface waters. Individual parameter scores: a) Support to wildlife listed in Part 1 by outside habitats = 5, due to proximity of nearby roadways; b) Invasive exotic species = 5, common ocurrence within assesment area; c) Wildlife access to and from outside = 5, decreased due to lack of connectivity to other surface waters; d) functions that benefit fish & wildlife downstream-distance or barriers = N/A because this is a closed system; e) Impacts to wildlife listed in Part 1 by outside land uses = 5, surrounding habitats relatively undisturbed with exception of Palm Drive; f) Hydrologically connected areas downstream of assessment area = N/A due to closed system; g) Dependency of downstream areas on assessment area = 4, little benefit to downstream areas.
.500(6)(b)Water Environment (n/a for uplands)	w/o pres or current: 5	with: 0	The water environment score is somewhat reduced due to the apparent lack of connectivity to other surface waters or canal system. Individual parameter scores: a) water levels and flows = 5, no flow evident; b) water level indicators = 5, mostly consistent with expected; c) soil moisture = 5, mostly consistent with expected; d) soil erosion or deposition = 5, typical patterns for canal; e) evidence of fire history = N/A; f) vegetation community zonation = 5, appropriate for community type; g) hydrologic stress on vegetation = 5, relatively minimal; h) use by animal species with specific hydrological requirements = 5, due to artificial hydroperiod; i) vegetative species tolerant of and associated with water quality degradation = 5, some pollution tolerant species present; j) direct observation of water quality = 5, no sheen or discoloration; K) existing water quality data = N/A; l) water depth wave, wave energy, currents and light penetration = N/A.
.500(6)(c)Community structure 1. Vegetation and/or 2. Benthic Community	w/o pres or current: 5	with: 0	The community structure variable is reduced due to artificial nature of the canal and hydrologic isolation. Individual parameter scores: a) plant community species in the canopy, shrub, or ground stratum = 4, few species present; b) invasive exotics or other invasive plant species = 5, present; c) regeneration and recruitment = 6, near normal recruitment; d) age & size distribution = 6, slightly atypical; e) density and quality of coarse woody debris, snag, den, and cavity = 5, due to excavated canal banks; f) plant condition = 7, generally good plant condition; g) land management practices = 4, due to alteration of community structure and hydroperiod; h) topographic features = 5, less than optimal; i) siltation or algal growth in submerged aquatic plant communities = 4, algal growth.

Score = sum of above scores/30 (if uplands, divide by 20)	
current or w/o pres: 0.50	with: 0

Delta = [with-current]
-0.50

If preservation as mitigation,
Preservation adjustment factor =
Adjusted mitigation delta =

If mitigation
Time lag (t-factor) =
Risk factor =

For impact assessment areas
FL = delta x acres = 0.50 x 7.3 = **3.65**

For mitigation assessment areas
RFG = delta/(t-factor x risk) =

Form 62-345.900(2), F.A.C. [effective date]

PART I – Qualitative Description
(See Section 62-345.400, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
FPL Turkey Point Units 6 & 7/Associated Facilities/Roadway Improvements		Dwarf Mangroves and Mixed Wetland Hardwoods/Freshwater Marshes

FLUCCs code	Further classification (optional)	Impact or Mitigation Site?	Assessment Area Size
612-B, 617/641		Impact	7.5 acres (612-B) 5.6 acres (617/641)

Basin/Watershed Name/Number	Affected Waterbody (Class)	Special Classification (i.e.OFW, AP, other local/state/federal designation of importance)
DA-4/Florida City/North Canal/03090202		None

Geographic relationship to and hydrologic connection with wetlands, other surface water, uplands

Adjacent to roadways and exotic wetland hardwoods. Hydrologically connected to Biscayne Bay through adjacent wetlands.

Assessment area description

Areas of mangroves occur within the corridors adjacent to SW 359th Street near the L 31E Canal. These areas are dominated by a mixture of red mangrove and black mangrove, along with subdominant species white mangrove, buttonwood, Brazilian pepper, cocoplum, sea grape, half-flower, and occasional Australian pine. Several areas of mixed wetland hardwood communities intermixed with freshwater marshes are present within and adjacent to the roadway improvement corridors. These areas are comprised of a variety of native and exotic canopy species, including buttonwood, Australian pine, cocoplum, red mangrove, Brazilian pepper, cabbage palm, willow, and herbaceous species such as sawgrass.

Significant nearby features	Uniqueness (considering the relative rarity in relation to the regional landscape.)
FPL Turkey Point Plant, Biscayne Bay	Not unique

Functions	Mitigation for previous permit/other historic use
Water storage, drainage	N/A

Anticipated Wildlife Utilization Based on Literature Review (List of species that are representative of the assessment area and reasonably expected to be found)	Anticipated Utilization by Listed Species (List species, their legal classification (E, T, SSC), type of use, and intensity of use of the assessment area)
Wading birds, forage fishes	Occasional use by wading birds such as roseate spoonbill (SSC), white ibis (SSC), little blue heron (SSC), wood stork (E), reddish egret (SSC), snowy egret (SSC) and tricolored heron (SSC) as well as white-crowned pigeon (T).

Observed Evidence of Wildlife Utilization (List species directly observed, or other signs such as tracks, droppings, casings, nests, etc.):

None

Additional relevant factors:

Assessment conducted by:	Assessment date(s):
K. Bullock, S. Rizzo	6/2/2008

PART II – Quantification of Assessment Area (impact or mitigation)
(See Sections 62-345.500 and .600, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
FPL Turkey Point Units 6 & 7/Associated Facilities/Roadway Improvements		Dwarf Mangroves and Mixed Wetland Hardwoods/Freshwater Marshes
Impact or Mitigation	Assessment conducted by:	Assessment date:
Impact	K. Bullock, S. Rizzo	6/2/2008

Scoring Guidance	Optimal (10)	Moderate(7)	Minimal (4)	Not Present (0)
The scoring of each indicator is based on what would be suitable for the type of wetland or surface water assessed	Condition is optimal and fully supports wetland/surface water functions	Condition is less than optimal, but sufficient to maintain most wetland/surface waterfunctions	Minimal level of support of wetland/surface water functions	Condition is insufficient to provide wetland/surface water functions

	w/o pres or current	with	
.500(6)(a) Location and Landscape Support	7	0	Location and landscape support variable is slightly reduced due to proximity of FPL Turkey Point Plant main plant road and slight isolation from surrounding mangrove swamps. Individual parameter scores: a) Support to wildlife listed in Part 1 by outside habitats = 7, due to proximity of nearby roadways; b) Invasive exotic species = 7, some exotics species present; c) Wildlife access to and from outside = 7, decreased due to slight isolation from other habitats due to roadways; d) functions that benefit fish & wildlife downstream-distance or barriers = 7, decreased due to slight isolation from other habitats due to roadways; e) Impacts to wildlife listed in Part 1 by outside land uses = 7, surrounding habitats relatively undisturbed with exception of roadways; f) Hydrologically connected areas downstream of assessment area = 7, hydrologically connected but some impacts due to roadways; g) Dependency of downstream areas on assessment area = 6, some benefit to downstream areas.
.500(6)(b)Water Environment (n/a for uplands)	8	0	The water environment score is somewhat reduced due to the slight hydrological isolation from surrounding roadways and increased salinity. Individual parameter scores: a) water levels and flows = 7, slightly less than expected; b) water level indicators = 7, slightly less than expected; c) soil moisture = 9, consistent with expected; d) soil erosion or deposition = 9, typical patterns; e) evidence of fire history = N/A; f) vegetation community zonation = 6, due to sparse cover; g) hydrologic stress on vegetation = 6, stress from high salinity; h) use by animal species with specific hydrological requirements = 7, slighly less than expected; i) vegetative species tolerant of and associated with water quality degradation = 7, species tolerant of high salinities present; j) direct observation of water quality = 8, no sheen or discoloration; K) existing water quality data = 6, due to high salinity; l) water depth wave, wave energy, currents and light penetration = N/A.
.500(6)(c)Community structure 1. Vegetation and/or 2. Benthic Community	8	0	The community structure variable is slightly reduced due to high salinity. Individual parameter scores: a) plant community species in the canopy, shrub, or ground stratum = 9, mostly all desirable species; b) invasive exotics or other invasive plant species = 9, very few present; c) regeneration and recruitment = 7, near normal recruitment; d) age & size distribution = 7, atypical due to high salinity; e) density and quality of coarse woody debris, snag, den, and cavity = N/A; f) plant condition = 7, generally good plant condition; g) land management practices = 8, h) topographic features = 9, slightly less than optimal; i) siltation or algal growth in submerged aquatic plant communities = N/A.

Score = sum of above scores/30 (if uplands, divide by 20)	
current or w/o pres	with
0.77	0

Delta = [with-current]
-0.77

If preservation as mitigation,
Preservation adjustment factor =
Adjusted mitigation delta =

If mitigation
Time lag (t-factor) =
Risk factor =

For impact assessment areas
FL = delta x acres = 0.77 x 7.5 = **5.78 (612-B)**, 0.77 x 5.6 = **4.31 (617/641)**

For mitigation assessment areas
RFG = delta/(t-factor x risk) =

Form 62-345.900(2), F.A.C. [effective date]

PART I – Qualitative Description
(See Section 62-345.400, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
FPL Turkey Point Units 6 & 7/Associated Facilities/Roadway Improvements		Mixed Wetland Hardwoods

FLUCCs code	Further classification (optional)	Impact or Mitigation Site?	Assessment Area Size
617		Impact	9.1 acres

Basin/Watershed Name/Number	Affected Waterbody (Class)	Special Classification (i.e.OFW, AP, other local/state/federal designation of importance)
DA-4/Florida City/North Canal/03090202		None

Geographic relationship to and hydrologic connection with wetlands, other surface water, uplands

Adjacent to roadways. Surrounded by freshwater marshes. Hydrologically connected to Biscayne Bay through adjacent wetlands.

Assessment area description

Several areas of mixed wetland hardwood communities are present within and adjacent to the roadway improvement corridors. Mixed wetland hardwoods are comprised of a variety of native and exotic canopy species, including buttonwood, Australian pine, cocoplum, red mangrove, Brazilian pepper, cabbage palm, and willow.

Significant nearby features	Uniqueness (considering the relative rarity in relation to the regional landscape.)
FPL Turkey Point Plant, Biscayne Bay	Not unique

Functions	Mitigation for previous permit/other historic use
Water storage	N/A

Anticipated Wildlife Utilization Based on Literature Review (List of species that are representative of the assessment area and reasonably expected to be found)	Anticipated Utilization by Listed Species (List species, their legal classification (E, T, SSC), type of use, and intensity of use of the assessment area)
Passerine birds and other wildlife typical to the region	Occasional use by white-crowned pigeon (T).

Observed Evidence of Wildlife Utilization (List species directly observed, or other signs such as tracks, droppings, casings, nests, etc.):

White-crowned pigeon observed flying overhead.

Additional relevant factors:

Assessment conducted by:	Assessment date(s):
K. Bullock, S. Rizzo	6/2/2008

Form 62-345.900(1), F.A.C. [effective date]

PART II – Quantification of Assessment Area (impact or mitigation)
(See Sections 62-345.500 and .600, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
FPL Turkey Point Units 6 & 7/Associated Facilities/Roadway Improvements		Mixed Wetland Hardwoods
Impact or Mitigation	Assessment conducted by:	Assessment date:
Impact	K. Bullock, S. Rizzo	6/2/2008

Scoring Guidance	Optimal (10)	Moderate(7)	Minimal (4)	Not Present (0)
The scoring of each indicator is based on what would be suitable for the type of wetland or surface water assessed	Condition is optimal and fully supports wetland/surface water functions	Condition is less than optimal, but sufficient to maintain most wetland/surface waterfunctions	Minimal level of support of wetland/surface water functions	Condition is insufficient to provide wetland/surface water functions

	w/o pres or current	with	
.500(6)(a) Location and Landscape Support	7	0	Location and landscape support variable is slightly reduced due to proximity of existing Turkey Point facility. Individual parameter scores: a) Support to wildlife listed in Part 1 by outside habitats = 8, due to proximity of Biscayne Bay; b) Invasive exotic species = 4, moderate coverage; c) Wildlife access to and from outside = 8, mostly unlimited access; d) functions that benefit fish & wildlife downstream-distance or barriers = 8, no impedence to downstream areas; e) Impacts to wildlife listed in Part 1 by outside land uses = 7, slightly reduced due to proximity of Turkey Point facility; f) Hydrologically connected areas downstream of assessment area = 8, no impedence to downstream areas; g) Dependency of downstream areas on assessment area = 6, some benefit to downstream areas.
.500(6)(b)Water Environment (n/a for uplands)	7	0	The water environment score is slightly reduced due to the atypical vegetation community zonation due to presence of exotic species. Individual parameter scores: a) water levels and flows = 8, consistent with expected; b) water level indicators = 8, consistent with expected; c) soil moisture = 8, consistent with expected; d) soil erosion or deposition = 8, consistent with expected; e) evidence of fire history = N/A; f) vegetation community zonation = 4, atypical for the habitat due to presence of exotics; g) hydrologic stress on vegetation = 8, no stress noted; h) use by animal species with specific hydrological requirements = 8, consistent with expected; i) vegetative species tolerant of and associated with water quality degradation = 8, none observed; j) direct observation of water quality = N/A; K) existing water quality data = N/A; l) water depth wave, wave energy, currents and light penetration = N/A.
.500(6)(c)Community structure 1. Vegetation and/or 2. Benthic Community	7	0	The community structure variable is reduced due to low species diversity resulting from presence of exotics. Individual parameter scores: a) plant community species in the canopy, shrub, or ground stratum = 6, dominated by exotic species; b) invasive exotics or other invasive plant species = 4, moderate to high coverage; c) regeneration and recruitment = 7, typical; d) age & size distribution = 7, typical; e) density and quality of coarse woody debris, snag, den, and cavity = 7, adequate for system type; f) plant condition = 7, due to dead stems and low productivity; g) land management practices = 7, due to alteration of community structure; h) topographic features = 7, slightly less than optimal; i) siltation or algal growth in submerged aquatic plant communities = N/A.

Score = sum of above scores/30 (if uplands, divide by 20)	
current or w/o pres	with
0.70	0

Delta = [with-current]
-0.70

If preservation as mitigation,
Preservation adjustment factor =
Adjusted mitigation delta =

If mitigation
Time lag (t-factor) =
Risk factor =

For impact assessment areas
FL = delta x acres = 0.70 x 9.1 = **6.37**

For mitigation assessment areas
RFG = delta/(t-factor x risk) =

Form 62-345.900(2), F.A.C. [effective date]

PART I – Qualitative Description
(See Section 62-345.400, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
FPL Turkey Point Units 6 & 7/Associated Facilities/Roadway Improvements		Exotic Wetland Hardwoods

FLUCCs code	Further classification (optional)	Impact or Mitigation Site?	Assessment Area Size
619		Impact	4.2 acres

Basin/Watershed Name/Number	Affected Waterbody (Class)	Special Classification (i.e.OFW, AP, other local/state/federal designation of importance)
DA-4/Florida City/North Canal/03090202		None

Geographic relationship to and hydrologic connection with wetlands, other surface water, uplands

Adjacent to roadways; intermixed with freshwater marshes and mixed wetland hardwoods.

Assessment area description

Areas of exotic wetland hardwoods dominated by Brazilian pepper occur within the corridors adjacent to the existing roadways. In addition to the nuisance exotic species Brazilian pepper, additional species commonly observed within these areas include Australian pine, willow, groundsel tree, elderberry, primrose willow, cattail, paragrass, and torpedo grass.

Significant nearby features	Uniqueness (considering the relative rarity in relation to the regional landscape.)
FPL Turkey Point Plant, Biscayne Bay	Not unique

Functions	Mitigation for previous permit/other historic use
Water storage, wildlife habitat	N/A

Anticipated Wildlife Utilization Based on Literature Review (List of species that are representative of the assessment area and reasonably expected to be found)	Anticipated Utilization by Listed Species (List species, their legal classification (E, T, SSC), type of use, and intensity of use of the assessment area)
Wading birds, shorebirds, forage fishes	Occasional use by wading birds such as roseate spoonbill (SSC), white ibis (SSC), little blue heron (SSC), wood stork (E), reddish egret (SSC), snowy egret (SSC) and tricolor heron (SSC). Also white-crowned pigeon (T).

Observed Evidence of Wildlife Utilization (List species directly observed, or other signs such as tracks, droppings, casings, nests, etc.):

None

Additional relevant factors:

Assessment conducted by:	Assessment date(s):
K. Bullock, S. Rizzo	6/2/2008

Form 62-345.900(1), F.A.C. [effective date]

PART II – Quantification of Assessment Area (impact or mitigation)
(See Sections 62-345.500 and .600, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
FPL Turkey Point Units 6 & 7/Associated Facilities/Roadway Improvements		Exotic Wetland Hardwoods
Impact or Mitigation	Assessment conducted by:	Assessment date:
Impact	K. Bullock, S. Rizzo	6/2/2008

Scoring Guidance	Optimal (10)	Moderate (7)	Minimal (4)	Not Present (0)
The scoring of each indicator is based on what would be suitable for the type of wetland or surface water assessed	Condition is optimal and fully supports wetland/surface water functions	Condition is less than optimal, but sufficient to maintain most wetland/surface waterfunctions	Minimal level of support of wetland/surface water functions	Condition is insufficient to provide wetland/surface water functions

.500(6)(a) Location and Landscape Support	w/o pres or current: 6	with: 0	Location and landscape support variable is slightly reduced due to proximity of existing Turkey Point facility. Individual parameter scores: a) Support to wildlife listed in Part 1 by outside habitats = 6, due to proximity of Turkey Point facility b) Invasive exotic species = 6, prevalent coverage; c) Wildlife access to and from outside = 6, some limitations; d) functions that benefit fish & wildlife downstream-distance or barriers = 6, roadway barriers; e) Impacts to wildlife listed in Part 1 by outside land uses = 6, slightly reduced due to proximity of Turkey Point facility and roadways; f) Hydrologically connected areas downstream of assessment area = 6, some hydrological impairments; g) Dependency of downstream areas on assessment area = 6, some benefits to downstream areas.
.500(6)(b)Water Environment (n/a for uplands)	w/o pres or current: 6	with: 0	The water environment score is slightly reduced due to water levels lower than expected. Individual parameter scores: a) water levels and flows = 6, slightly lower than expected; b) water level indicators = 6, slightly lower than expected; c) soil moisture = 6, mostly consistent with expected; d) soil erosion or deposition = 6, some observed; e) evidence of fire history = N/A; f) vegetation community zonation = 6, exotics present; g) hydrologic stress on vegetation = 6, due to lower water levels; h) use by animal species with specific hydrological requirements = 6, some evidence observed; i) vegetative species tolerant of and associated with water quality degradation = 6, some observed; j) direct observation of water quality = 6, mostly normal; K) existing water quality data = N/A; l) water depth wave, wave energy, currents and light penetration = N/A.
.500(6)(c)Community structure 1. Vegetation and/or 2. Benthic Community	w/o pres or current: 6	with: 0	The community structure variable is high due to species diversity and presence of natural, native vegetation. Individual parameter scores: a) plant community species in the canopy, shrub, or ground stratum = 6, dominated by exotic species; b) invasive exotics or other invasive plant species = 6, prevalent; c) regeneration and recruitment = 6, some evidence of recruitment; d) age & size distribution = 6, lower water levels possibly affecting age distribution; e) density and quality of coarse woody debris, snag, den, and cavity = 6, mostly consistent with expected; f) plant condition = 6, low recruitment; g) land management practices = N/A; h) topographic features = 6, mostly typical; i) siltation or algal growth in submerged aquatic plant communities = N/A.

Score = sum of above scores/30 (if uplands, divide by 20)	
current or w/o pres: 0.60	with: 0

Delta = [with-current]
-0.60

If preservation as mitigation,
Preservation adjustment factor =
Adjusted mitigation delta =

If mitigation
Time lag (t-factor) =
Risk factor =

For impact assessment areas
FL = delta x acres = 0.60 x 4.2 = **2.52**

For mitigation assessment areas
RFG = delta/(t-factor x risk) =

Form 62-345.900(2), F.A.C. [effective date]

PART I – Qualitative Description
(See Section 62-345.400, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
FPL Turkey Point Units 6 & 7/Associated Facilities/Roadway Improvements		Freshwater Marshes

FLUCCs code	Further classification (optional)	Impact or Mitigation Site?	Assessment Area Size
641		Impact	47.9 acres

Basin/Watershed Name/Number	Affected Waterbody (Class)	Special Classification (i.e.OFW, AP, other local/state/federal designation of importance)
DA-4/Florida City/North Canal/03090202		None

Geographic relationship to and hydrologic connection with wetlands, other surface water, uplands

The freshwater marsh wetlands within the assessment area are located within a large freshwater marsh system that is hydrologically connected to Biscayne Bay. The freshwater marshes are adjacent to mixed wetland hardwood communities and roadways.

Assessment area description

Areas of freshwater marsh are prevalent within the corridors adjacent to SW 359th Street. These marshes are dominated by sawgrass, with subdominant species including cattail, willow, primrose willow, buttonwood, wax myrtle, cabbage palm, Brazilian pepper, poisonwood, Australian pine, musky mint, silktree, and nettletree.

Significant nearby features	Uniqueness (considering the relative rarity in relation to the regional landscape.)
FPL Turkey Point Plant, Biscayne Bay	Not unique

Functions	Mitigation for previous permit/other historic use
Water storage, wildlife habitat	N/A

Anticipated Wildlife Utilization Based on Literature Review (List of species that are representative of the assessment area and reasonably expected to be found)	Anticipated Utilization by Listed Species (List species, their legal classification (E, T, SSC), type of use, and intensity of use of the assessment area)
Wading birds, shorebirds, forage fishes	Occasional use by wading birds such as roseate spoonbill (SSC), white ibis (SSC), little blue heron (SSC), wood stork (E), reddish egret (SSC), snowy egret (SSC) and tricolor heron (SSC). Also white-crowned pigeon (T).

Observed Evidence of Wildlife Utilization (List species directly observed, or other signs such as tracks, droppings, casings, nests, etc.):

White-crowned pigeon observed flying overhead.

Additional relevant factors:

Assessment conducted by:	Assessment date(s):
K. Bullock, S. Rizzo	6/2/2008

Form 62-345.900(1), F.A.C. [effective date]

PART II – Quantification of Assessment Area (impact or mitigation)
(See Sections 62-345.500 and .600, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
FPL Turkey Point Units 6 & 7/Associated Facilities/Roadway Improvements		Freshwater Marshes
Impact or Mitigation	Assessment conducted by:	Assessment date:
Impact	K. Bullock, S. Rizzo	6/2/2008

Scoring Guidance	Optimal (10)	Moderate (7)	Minimal (4)	Not Present (0)
The scoring of each indicator is based on what would be suitable for the type of wetland or surface water assessed	Condition is optimal and fully supports wetland/surface water functions	Condition is less than optimal, but sufficient to maintain most wetland/surface waterfunctions	Minimal level of support of wetland/surface water functions	Condition is insufficient to provide wetland/surface water functions

.500(6)(a) Location and Landscape Support	w/o pres or current: 8	with: 0	Location and landscape support variable is slightly reduced due to proximity of existing Turkey Point facility. Individual parameter scores: a) Support to wildlife listed in Part 1 by outside habitats = 8, due to proximity of Biscayne Bay; b) Invasive exotic species = 8, minimal coverage; c) Wildlife access to and from outside = 8, no limitations; d) functions that benefit fish & wildlife downstream-distance or barriers = 8, no barriers; e) Impacts to wildlife listed in Part 1 by outside land uses = 8, slightly reduced due to proximity of Turkey Point facility; f) Hydrologically connected areas downstream of assessment area = 8, no hydrological impairments; g) Dependency of downstream areas on assessment area = 8, benefits to downstream areas.
.500(6)(b)Water Environment (n/a for uplands)	w/o pres or current: 8	with: 0	The water environment score is slightly reduced due to water levels lower than expected. Individual parameter scores: a) water levels and flows = 7, slightly lower than expected; b) water level indicators = 7, slightly lower than expected; c) soil moisture = 9, consistent with expected; d) soil erosion or deposition = 9, none observed; e) evidence of fire history = 9, area was burned 2-3 years ago; f) vegetation community zonation = 9, consistent with expected; g) hydrologic stress on vegetation = 7, due to lower water levels; h) use by animal species with specific hydrological requirements = 9, some evidence observed; i) vegetative species tolerant of and associated with water quality degradation = 9, none observed; j) direct observation of water quality = 9, appears normal; K) existing water quality data = N/A; l) water depth wave, wave energy, currents and light penetration = N/A.
.500(6)(c)Community structure 1. Vegetation and/or 2. Benthic Community	w/o pres or current: 8	with: 0	The community structure variable is high due to species diversity and presence of natural, native vegetation. Individual parameter scores: a) plant community species in the canopy, shrub, or ground stratum = 9, dominated by native species; b) invasive exotics or other invasive plant species = 9, minimal coverage; c) regeneration and recruitment = 8, some evidence of recruitment; d) age & size distribution = 7, lower water levels possibly affecting age distribution; e) density and quality of coarse woody debris, snag, den, and cavity = 9, consistent with expected; f) plant condition = 7, low recruitment; g) land management practices = 9, no alteration evident; h) topographic features = 9, optimal; i) siltation or algal growth in submerged aquatic plant communities = N/A.

Score = sum of above scores/30 (if uplands, divide by 20)	
current or w/o pres: 0.80	with: 0

Delta = [with-current]
-0.80

If preservation as mitigation,
Preservation adjustment factor =
Adjusted mitigation delta =

If mitigation
Time lag (t-factor) =
Risk factor =

For impact assessment areas
FL = delta x acres = 0.80 x 47.9 = **38.32**

For mitigation assessment areas
RFG = delta/(t-factor x risk) =

Form 62-345.900(2), F.A.C. [effective date]

MITIGATION SITES

PART I – Qualitative Description
(See Section 62-345.400, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
FPL Turkey Point Units 6 & 7 Project		Northwest Restoration Site - Sawgrass Marsh and Periphyton Mat

FLUCCs code	Further classification (optional)	Impact or Mitigation Site?	Assessment Area Size
6411 and 655		Mitigation	102.7 acres

Basin/Watershed Name/Number	Affected Waterbody (Class)	Special Classification (i.e.OFW, AP, other local/state/federal designation of importance)
North Canal/Florida City/03090202		None

Geographic relationship to and hydrologic connection with wetlands, other surface water, uplands

Sawgrass marsh, exotic wetland hardwoods, and mosquito ditches lie to the west of the Northwest Restoration Site; connected on east to L-31E Canal; further east lie mangrove wetlands of Biscayne National Park. SW 328th Street/North Canal lies to the north, and SW 344th Street/Florida City Canal lies to the south.

Assessment area description

The Northwest Restoration Site consists of several FPL-owned parcels totaling 240 acres located adjacent to the L-31E canal between 328th Street and 344th Street/Palm Drive, approximately two miles northwest of the Units 6&7 Site and directly west of the Biscayne National Park. The area is impacted due to historic hydrologic alteration in the form of a network of mosquito ditches as well as prevalence of exotic species, resulting in reduced quality of wildlife habitat and vegetative species diversity. The majority of the Site (approximately 95 acres) is sawgrass marsh, with exotic Australian pine scattered throughout. Relatively open, sparsely vegetated areas supporting thick periphyton communities comprise approximatley 7 acres within the Site.

Significant nearby features	Uniqueness (considering the relative rarity in relation to the regional landscape.)
Roadways, L-31E Canal, FPL Turkey Point Plant, Biscayne Bay	Not unique

Functions	Mitigation for previous permit/other historic use
Wildlife habitat, water storage	N/A

Anticipated Wildlife Utilization Based on Literature Review (List of species that are representative of the assessment area and reasonably expected to be found)	Anticipated Utilization by Listed Species (List species, their legal classification (E, T, SSC), type of use, and intensity of use of the assessment area)
Wading birds, shorebirds, forage fishes	Occasional use by wading birds such as roseate spoonbill (SSC), white ibis (SSC), little blue heron (SSC), wood stork (E), reddish egret (SSC), snowy egret (SSC) and tricolored heron (SSC)

Observed Evidence of Wildlife Utilization (List species directly observed, or other signs such as tracks, droppings, casings, nests, etc.):

white ibis, great egret, cricket frog, pig frog

Additional relevant factors:

Assessment conducted by:	Assessment date(s):
K. Bullock, S. Rizzo	7/14/2010

PART II – Quantification of Assessment Area (impact or mitigation)
(See Sections 62-345.500 and .600, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
FPL Turkey Point Units 6 & 7 Project		Northwest Restoration Site - Sawgrass Marsh and Periphyton Mat
Impact or Mitigation	Assessment conducted by:	Assessment date:
Mitigation	K. Bullock, S. Rizzo	7/14/2010

Scoring Guidance	Optimal (10)	Moderate(7)	Minimal (4)	Not Present (0)
The scoring of each indicator is based on what would be suitable for the type of wetland or surface water assessed	Condition is optimal and fully supports wetland/surface water functions	Condition is less than optimal, but sufficient to maintain most wetland/surface waterfunctions	Minimal level of support of wetland/surface water functions	Condition is insufficient to provide wetland/surface water functions

.500(6)(a) Location and Landscape Support			**Current**: Location and landscape support variable slightly reduced due to prevalence of exotic vegetation, mosquito ditches and spoil piles, and surrounding roadways and canals. Individual parameter scores: a) Support to wildlife listed in Part 1 by outside habitats = 6, due to proximity of roadways; b) Invasive exotic species = 6, moderate coverage; c) Wildlife access to and from outside = 6, decreased due to limitations imposed by surrounding roadways and lack of native vegetative communities; d) functions that benefit fish & wildlife downstream-distance or barriers = 6, area somewhat isolated from other habitats; e) Impacts to wildlife listed in Part 1 by outside land uses = 6, slightly reduced due to surrounding habitat degradation; f) Hydrologically connected areas downstream of assessment area = 6, connected through culverts to L31E; g) Dependency of downstream areas on assessment area = 6, some benefit to downstream areas.
w/o pres or current	with		**With**: Location and landscape support variable slightly increased due to removal of historical disturbances (mosquito ditches and spoil piles), eradication of exotic vegetation, and preservation of parcel. Individual parameter scores: a) Support to wildlife listed in Part 1 by outside habitats = 8, due to increase in native habitat; b) Invasive exotic species = 9, exotic removal within Site; c) Wildlife access to and from outside = 7, somewhat decreased due to limitations imposed by surrounding roadways; d) functions that benefit fish & wildlife downstream-distance or barriers = 7, slight increase due to removal fo exotic vegetation; e) Impacts to wildlife listed in Part 1 by outside land uses = 7, restoration of habitats surrounding sawgrass marsh and periphyton mat communities; f) Hydrologically connected areas downstream of assessment area = 7, connected through culverts to L31E, removal of ditches will improve hydrology; g) Dependency of downstream areas on assessment area = 8, more benefit to downstream areas due to exotic removal and ditch removal.
7	8		
.500(6)(b)Water Environment (n/a for uplands)			**Current**: The water environment score is reduced due to the prevalence of ditching on the site. Individual parameter scores: a) water levels and flows = 5, altered water level due to ditching; b) water level indicators = 4, less than expected; c) soil moisture = 6, drier than expected; d) soil erosion or deposition = 5, spoil deposits; e) evidence of fire history = 6, less than typical; f) vegetation community zonation = 5, altered due to presence of spoil deposits supporting exotics; g) hydrologic stress on vegetation = 6, some due to altered hydrologic regime; h) use by animal species with specific hydrological requirements = 6, less than expected due to ditching and limited open water connections; i) vegetative species tolerant of and associated with water quality degradation = 7, typical of expected; j) direct observation of water quality = 8, no discoloration, turbidity, or sheen; k) existing water quality data = N/A; l) water depth wave, wave energy, currents and light penetration = N/A.
w/o pres or current	with		**With**: The water environment score is increased due to the removal of ditching throughout the Site. Individual parameter scores: a) water levels and flows = 8, more typical water flows; b) water level indicators = 8, consistent with expected; c) soil moisture = 8, consistent with expected; d) soil erosion or deposition = 7, typical patterns; e) evidence of fire history = 8, restoration will incorporate prescribed fire; f) vegetation community zonation = 8, due to removal of exotics; g) hydrologic stress on vegetation = 8, due to improved hydrologic regime; h) use by animal species with specific hydrological requirements = 8, due to improved hydrology; i) vegetative species tolerant of and associated with water quality degradation = 7, minimal; j) direct observation of water quality = 8, no discoloration, turbidity, or sheen; k) existing water quality data = N/A; l) water depth wave, wave energy, currents and light penetration = N/A.
5	8		
.500(6)(c)Community structure			**Current**: The community structure variable is reduced due to presence of exotic species and hydrologic isolation. Individual parameter scores: a) plant community species in the canopy, shrub, or ground stratum = 6, mix of exotic and native species; b) invasive exotics or other invasive plant species = 6, moderate coverage; c) regeneration and recruitment = 7, slightly less than expected; d) age & size distribution = 7, slightly less than expected; e) density and quality of coarse woody debris, snag, den, and cavity = 7, adequate for system type; f) plant condition = 7, due to dead stems and low productivity; g) land management practices = 5, due to alteration of community structure; h) topographic features = 6, less than optimal; i) siltation or algal growth in submerged aquatic plant communities = N/A.
1. Vegetation and/or 2. Benthic Community			
w/o pres or current	with		**With**: The community structure variable is increased due to removal of exotics and improved hydrology. Individual parameter scores: a) plant community species in the canopy, shrub, or ground stratum = 8, native species; b) invasive exotics or other invasive plant species = 9, minimal coverage; c) regeneration and recruitment = 8, consistent with expected; d) age & size distribution = 7, slightly less than expected; e) density and quality of coarse woody debris, snag, den, and cavity = 7, adequate for system type; f) plant condition = 8, improved due to improved hydrology; g) land management practices = 8, due to removal of ditching; h) topographic features = 8, due to removal of ditching; i) siltation or algal growth in submerged aquatic plant communities = N/A.
6	8		

Score = sum of above scores/30 (if uplands, divide by 20)	
current or w/o pres	with
0.60	0.80

Delta = [with-current]
0.20

If preservation as mitigation,
Preservation adjustment factor =
Adjusted mitigation delta =

If mitigation
Time lag (t-factor) = 1.0341 (3 years)
Risk factor = 1.25

For impact assessment areas
FL = delta x acres =

For mitigation assessment areas
RFG = delta/(t-factor x risk) = 0.16

Credits = RFG x acreage = 16.43

PART I – Qualitative Description
(See Section 62-345.400, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
FPL Turkey Point Units 6 & 7 Project		Northwest Restoration Site - Mangroves

FLUCCs code	Further classification (optional)	Impact or Mitigation Site?	Assessment Area Size
612		Mitigation	42.2 acres

Basin/Watershed Name/Number	Affected Waterbody (Class)	Special Classification (i.e.OFW, AP, other local/state/federal designation of importance)
North Canal/Florida City/03090202		None

Geographic relationship to and hydrologic connection with wetlands, other surface water, uplands

Sawgrass marsh, exotic wetland hardwoods, and mosquito ditches lie to the west of the Northwest Restoration Site; connected on east to L-31E Canal; further east lie mangrove wetlands of Biscayne National Park. SW 328th Street/North Canal lies to the north, and SW 344th Street/Florida City Canal lies to the south.

Assessment area description

The Northwest Restoration Site consists of several FPL-owned parcels totaling 240 acres located adjacent to the L-31E canal between 328th Street and 344th Street/Palm Drive, approximately two miles northwest of the Units 6&7 Site and directly west of the Biscayne National Park. The area is impacted due to historic hydrologic alteration in the form of a network of mosquito ditches as well as prevalence of exotic species, resulting in reduced quality of wildlife habitat and vegetative species diversity. Areas dominated by red mangroves occur in the northern portion of the Site, with additional species including the exotic Australian pine, white mangroves, buttonwood, dahoon holly, and wax myrtle.

Significant nearby features	Uniqueness (considering the relative rarity in relation to the regional landscape.)
Roadways, L-31E Canal, FPL Turkey Point Plant, Biscayne Bay	Not unique

Functions	Mitigation for previous permit/other historic use
Wildlife habitat, water storage	N/A

Anticipated Wildlife Utilization Based on Literature Review (List of species that are representative of the assessment area and reasonably expected to be found)	Anticipated Utilization by Listed Species (List species, their legal classification (E, T, SSC), type of use, and intensity of use of the assessment area)
Wading birds, forage fishes	Occasional use by wading birds such as roseate spoonbill (SSC), white ibis (SSC), little blue heron (SSC), wood stork (E), reddish egret (SSC), snowy egret (SSC) and tricolored heron (SSC)

Observed Evidence of Wildlife Utilization (List species directly observed, or other signs such as tracks, droppings, casings, nests, etc.):

None

Additional relevant factors:

Assessment conducted by:	Assessment date(s):
K. Bullock, S. Rizzo	7/14/2010

PART II – Quantification of Assessment Area (impact or mitigation)
(See Sections 62-345.500 and .600, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
FPL Turkey Point Units 6 & 7 Project		Northwest Restoration Site - Mangroves
Impact or Mitigation	Assessment conducted by:	Assessment date:
Mitigation	K. Bullock, S. Rizzo	7/14/2010

Scoring Guidance	Optimal (10)	Moderate(7)	Minimal (4)	Not Present (0)
The scoring of each indicator is based on what would be suitable for the type of wetland or surface water assessed	Condition is optimal and fully supports wetland/surface water functions	Condition is less than optimal, but sufficient to maintain most wetland/surface waterfunctions	Minimal level of support of wetland/surface water functions	Condition is insufficient to provide wetland/surface water functions

.500(6)(a) Location and Landscape Support			**Current**: Location and landscape support variable slightly reduced due to prevalence of exotic vegetation, mosquito ditches and spoil piles, and surrounding roadways and canals. Individual parameter scores: a) Support to wildlife listed in Part 1 by outside habitats = 6, due to proximity of roadways; b) Invasive exotic species = 6, moderate coverage; c) Wildlife access to and from outside = 6, decreased due to limitations imposed by surrounding roadways and lack of native vegetative communities; d) functions that benefit fish & wildlife downstream-distance or barriers = 6, area somewhat isolated from other habitats; e) Impacts to wildlife listed in Part 1 by outside land uses = 6, slightly reduced due to surrounding habitat degradation; f) Hydrologically connected areas downstream of assessment area = 6, connected through culverts to L31E; g) Dependency of downstream areas on assessment area = 6, some benefit to downstream areas.
w/o pres or current	with		**With**: Location and landscape support variable slightly increased due to removal of historical disturbances (mosquito ditches and spoil piles), eradication of exotic vegetation, and preservation of parcel. Individual parameter scores: a) Support to wildlife listed in Part 1 by outside habitats = 8, due to increase in native habitat; b) Invasive exotic species = 9, exotic removal within Site; c) Wildlife access to and from outside = 7, somewhat decreased due to limitations imposed by surrounding roadways; d) functions that benefit fish & wildlife downstream-distance or barriers = 7, slight increase due to removal fo exotic vegetation; e) Impacts to wildlife listed in Part 1 by outside land uses = 7, restoration of habitats surrounding sawgrass marsh and periphyton mat communities; f) Hydrologically connected areas downstream of assessment area = 7, connected through culverts to L31E, removal of ditches will improve hydrology; g) Dependency of downstream areas on assessment area = 8, more benefit to downstream areas due to exotic removal and ditch removal.
7	8		
.500(6)(b)Water Environment (n/a for uplands)			**Current**: The water environment score is reduced due to the prevalence of ditching on the site, although relatively reduced number of mosquito ditches in northeastern portion of Site. Individual parameter scores: a) water levels and flows = 6, somewhat altered water level due to ditching; b) water level indicators = 5, less than expected; c) soil moisture = 6, drier than expected; d) soil erosion or deposition = 6, some spoil deposits; e) evidence of fire history = 6, less than typical; f) vegetation community zonation = 6, altered due to ditching, reduction in hydrologic connections; g) hydrologic stress on vegetation = 6, some due to altered hydrologic regime; h) use by animal species with specific hydrological requirements = 6, less than expected due to ditching and limited open water connections; i) vegetative species tolerant of and associated with water quality degradation = 7, typical of expected; j) direct observation of water quality = 8, no discoloration, turbidity, or sheen; k) existing water quality data = N/A; l) water depth wave, wave energy, currents and light penetration = N/A.
w/o pres or current	with		**With**: The water environment score is increased due to the removal of ditching throughout the Site. Individual parameter scores: a) water levels and flows = 8, more typical water flows; b) water level indicators = 8, consistent with expected; c) soil moisture = 8, consistent with expected; d) soil erosion or deposition = 7, typical patterns; e) evidence of fire history = 8, restoration will incorporate prescribed fire; f) vegetation community zonation = 8, due to removal of exotics; g) hydrologic stress on vegetation = 8, due to improved hydrologic regime; h) use by animal species with specific hydrological requirements = 8, due to improved hydrology; i) vegetative species tolerant of and associated with water quality degradation = 7, minimal; j) direct observation of water quality = 8, no discoloration, turbidity, or sheen; k) existing water quality data = N/A; l) water depth wave, wave energy, currents and light penetration = N/A.
6	8		
.500(6)(c)Community structure 1. Vegetation and/or 2. Benthic Community			**Current**: The community structure variable is reduced somewhat due to presence of Australian pine and hydrologic isolation. Individual parameter scores: a) plant community species in the canopy, shrub, or ground stratum = 7, primarily native species, but exotic species present; b) invasive exotics or other invasive plant species = 7, moderate coverage; c) regeneration and recruitment = 7, slightly less than expected; d) age & size distribution = 8, typical with expected; e) density and quality of coarse woody debris, snag, den, and cavity = 7, adequate for system type; f) plant condition = 7, due to dead stems and low productivity; g) land management practices = 6, due to historical ditching, surrounding roadways; h) topographic features = 7, less than optimal due to mosquito ditches; i) siltation or algal growth in submerged aquatic plant communities = N/A.
w/o pres or current	with		**With**: The community structure variable is increased due to removal of exotics and improved hydrology. Individual parameter scores: a) plant community species in the canopy, shrub, or ground stratum = 9, native mangrove community; b) invasive exotics or other invasive plant species = 9, minimal coverage; c) regeneration and recruitment = 8, consistent with expected; d) age & size distribution = 8, typical with expected; e) density and quality of coarse woody debris, snag, den, and cavity = 8, adequate for system type; f) plant condition = 8, improved due to improved hydrology; g) land management practices = 8, due to removal of ditching; h) topographic features = 9, due to removal of ditching; i) siltation or algal growth in submerged aquatic plant communities = N/A.
7	9		

Score = sum of above scores/30 (if uplands, divide by 20)	
current or w/o pres	with
0.67	0.83

Delta = [with-current]
0.16

If preservation as mitigation,
Preservation adjustment factor =
Adjusted mitigation delta =

If mitigation
Time lag (t-factor) = 1.0341 (3 years)
Risk factor = 1.25

For impact assessment areas
FL = delta x acres =

For mitigation assessment areas
RFG = delta/(t-factor x risk) = 0.12

Credits = RFG x acreage = 5.06

PART I – Qualitative Description
(See Section 62-345.400, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
FPL Turkey Point Units 6 & 7 Project		Northwest Restoration Site - Mixed Wetland Hardwoods

FLUCCs code	Further classification (optional)	Impact or Mitigation Site?	Assessment Area Size
617		Mitigation	16.23 acres

Basin/Watershed Name/Number	Affected Waterbody (Class)	Special Classification (i.e.OFW, AP, other local/state/federal designation of importance)
North Canal/Florida City/03090202		None

Geographic relationship to and hydrologic connection with wetlands, other surface water, uplands

Sawgrass marsh, exotic wetland hardwoods, and mosquito ditches lie to the west of the Northwest Restoration Site; connected on east to L-31E Canal; further east lie mangrove wetlands of Biscayne National Park. SW 328th Street/North Canal lies to the north, and SW 344th Street/Florida City Canal lies to the south.

Assessment area description

The Northwest Restoration Site consists of several FPL-owned parcels totaling 240 acres located adjacent to the L-31E canal between 328th Street and 344th Street/Palm Drive, approximately two miles northwest of the Units 6&7 Site and directly west of the Biscayne National Park. The area is impacted due to historic hydrologic alteration in the form of a network of mosquito ditches as well as prevalence of exotic species, resulting in reduced quality of wildlife habitat and vegetative species diversity. Scattered tree islands comprised of mixed wetland hardwoods occur within the sawgrass marsh, vegetated with a mixture of red, black, and white mangroves, buttonwood, cocoplum, pond apple, willow, and the nuisance exotic species Australian pine.

Significant nearby features	Uniqueness (considering the relative rarity in relation to the regional landscape.)
Roadways, L-31E Canal, FPL Turkey Point Plant, Biscayne Bay	Not unique

Functions	Mitigation for previous permit/other historic use
Wildlife habitat, water storage	N/A

Anticipated Wildlife Utilization Based on Literature Review (List of species that are representative of the assessment area and reasonably expected to be found)	Anticipated Utilization by Listed Species (List species, their legal classification (E, T, SSC), type of use, and intensity of use of the assessment area)
Wading birds, forage fishes	Occasional use by wading birds such as roseate spoonbill (SSC), white ibis (SSC), little blue heron (SSC), wood stork (E), reddish egret (SSC), snowy egret (SSC) and tricolored heron (SSC)

Observed Evidence of Wildlife Utilization (List species directly observed, or other signs such as tracks, droppings, casings, nests, etc.):

None

Additional relevant factors:

Assessment conducted by:	Assessment date(s):
K. Bullock, S. Rizzo	7/14/2010

PART II – Quantification of Assessment Area (impact or mitigation)
(See Sections 62-345.500 and .600, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
FPL Turkey Point Units 6 & 7 Project		Northwest Restoration Site - Mixed Wetland Hardwoods
Impact or Mitigation	Assessment conducted by:	Assessment date:
Mitigation	K. Bullock, S. Rizzo	7/14/2010

Scoring Guidance	Optimal (10)	Moderate(7)	Minimal (4)	Not Present (0)
The scoring of each indicator is based on what would be suitable for the type of wetland or surface water assessed	Condition is optimal and fully supports wetland/surface water functions	Condition is less than optimal, but sufficient to maintain most wetland/surface waterfunctions	Minimal level of support of wetland/surface water functions	Condition is insufficient to provide wetland/surface water functions

	w/o pres or current	with	
.500(6)(a) Location and Landscape Support	7	8	**Current**: Location and landscape support variable slightly reduced due to prevalence of exotic vegetation, mosquito ditches and spoil piles, and surrounding roadways and canals. Individual parameter scores: a) Support to wildlife listed in Part 1 by outside habitats = 6, due to proximity of roadways; b) Invasive exotic species = 6, moderate coverage; c) Wildlife access to and from outside = 6, decreased due to limitations imposed by surrounding roadways and lack of native vegetative communities; d) functions that benefit fish & wildlife downstream-distance or barriers = 6, area somewhat isolated from other habitats; e) Impacts to wildlife listed in Part 1 by outside land uses = 6, slightly reduced due to surrounding habitat degradation; f) Hydrologically connected areas downstream of assessment area = 6, connected through culverts to L31E; g) Dependency of downstream areas on assessment area = 6, some benefit to downstream areas. **With**: Location and landscape support variable slightly increased due to removal of historical disturbances (mosquito ditches and spoil piles), eradication of exotic vegetation, and preservation of parcel. Individual parameter scores: a) Support to wildlife listed in Part 1 by outside habitats = 8, due to increase in native habitat; b) Invasive exotic species = 9, exotic removal within Site; c) Wildlife access to and from outside = 7, somewhat decreased due to limitations imposed by surrounding roadways; d) functions that benefit fish & wildlife downstream-distance or barriers = 7, slight increase due to removal fo exotic vegetation; e) Impacts to wildlife listed in Part 1 by outside land uses = 7, restoration of habitats surrounding sawgrass marsh and periphyton mat communities; f) Hydrologically connected areas downstream of assessment area = 7, connected through culverts to L31E, removal of ditches will improve hydrology; g) Dependency of downstream areas on assessment area = 8, more benefit to downstream areas due to exotic removal and ditch removal.
.500(6)(b)Water Environment (n/a for uplands)	5	8	**Current**: The water environment score is reduced due to the prevalence of ditching on the site. Individual parameter scores: a) water levels and flows = 5, altered water level due to ditching; b) water level indicators = 4, less than expected; c) soil moisture = 6, drier than expected; d) soil erosion or deposition = 5, spoil deposits; e) evidence of fire history = 6, less than typical; f) vegetation community zonation = 5, altered due to presence of spoil deposits supporting exotics; g) hydrologic stress on vegetation = 6, some due to altered hydrologic regime; h) use by animal species with specific hydrological requirements = 6, less than expected due to ditching and limited open water connections; i) vegetative species tolerant of and associated with water quality degradation = 7, typical of expected; j) direct observation of water quality = 8, no discoloration, turbidity, or sheen; k) existing water quality data = N/A; l) water depth wave, wave energy, currents and light penetration = N/A. **With**: The water environment score is increased due to the removal of ditching throughout the Site. Individual parameter scores: a) water levels and flows = 8, more typical water flows; b) water level indicators = 8, consistent with expected; c) soil moisture = 8, consistent with expected; d) soil erosion or deposition = 7, typical patterns; e) evidence of fire history = 8, restoration will incorporate prescribed fire; f) vegetation community zonation = 8, due to removal of exotics; g) hydrologic stress on vegetation = 8, due to improved hydrologic regime; h) use by animal species with specific hydrological requirements = 8, due to improved hydrology; i) vegetative species tolerant of and associated with water quality degradation = 7, minimal; j) direct observation of water quality = 8, no discoloration, turbidity, or sheen; k) existing water quality data = N/A; l) water depth wave, wave energy, currents and light penetration = N/A.
.500(6)(c)Community structure 1. Vegetation and/or 2. Benthic Community	6	9	**Current**: The community structure variable is reduced due to presence of exotic species and hydrologic isolation. Individual parameter scores: a) plant community species in the canopy, shrub, or ground stratum = 6, mix of exotic and native species; b) invasive exotics or other invasive plant species = 6, moderate coverage; c) regeneration and recruitment = 7, slightly less than expected; d) age & size distribution = 7, slightly less than expected; e) density and quality of coarse woody debris, snag, den, and cavity = 7, adequate for system type; f) plant condition = 7, due to dead stems and low productivity; g) land management practices = 5, due to alteration of community structure; h) topographic features = 6, less than optimal; i) siltation or algal growth in submerged aquatic plant communities = N/A. **With**: The community structure variable is increased due to removal of exotics, improved hydrology, and preservation. Individual parameter scores: a) plant community species in the canopy, shrub, or ground stratum = 9, native species; b) invasive exotics or other invasive plant species = 9, minimal coverage; c) regeneration and recruitment = 8, consistent with expected; d) age & size distribution = 8; e) density and quality of coarse woody debris, snag, den, and cavity = 8, adequate for system type; f) plant condition = 8, improved due to improved hydrology; g) land management practices = 9, due to removal of ditching and preservation; h) topographic features = 8, due to removal of ditching; i) siltation or algal growth in submerged aquatic plant communities = N/A.

Score = sum of above scores/30 (if uplands, divide by 20)	
current or w/o pres	with
0.60	0.83

If preservation as mitigation,
Preservation adjustment factor =
Adjusted mitigation delta =

For impact assessment areas
FL = delta x acres =

Delta = [with-current]
0.23

If mitigation
Time lag (t-factor) = 1.0696 (5 years)
Risk factor = 1.25

For mitigation assessment areas
RFG = delta/(t-factor x risk) = 0.17

Credits = RFG x acreage = 2.76

PART I – Qualitative Description
(See Section 62-345.400, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
FPL Turkey Point Units 6 & 7 Project		Northwest Restoration Site - Exotic Wetland Hardwoods

FLUCCs code	Further classification (optional)	Impact or Mitigation Site?	Assessment Area Size
619		Mitigation	66.19 acres

Basin/Watershed Name/Number	Affected Waterbody (Class)	Special Classification (i.e.OFW, AP, other local/state/federal designation of importance)
North Canal/Florida City/03090202		None

Geographic relationship to and hydrologic connection with wetlands, other surface water, uplands

Sawgrass marsh, exotic wetland hardwoods, and mosquito ditches lie to the west of the Northwest Restoration Site; connected on east to L-31E Canal; further east lie mangrove wetlands of Biscayne National Park. SW 328th Street/North Canal lies to the north, and SW 344th Street/Florida City Canal lies to the south.

Assessment area description

The Northwest Restoration Site consists of several FPL-owned parcels totaling 240 acres located adjacent to the L-31E canal between SW 328th Street and SW 344th Street/Palm Drive, approximately two miles northwest of the Units 6&7 Site and directly west of the Biscayne National Park. The area is impacted due to historic hydrologic alteration in the form of a network of mosquito ditches as well as prevalence of exotic species, resulting in reduced quality of wildlife habitat and vegetative species diversity. Approximately 66 acres of exotic wetland hardwoods dominated by Australian pine occur primarily along the northern and southern boundaries of the Site. Subdominant species include Brazilian pepper, melaleuca, poisonwood, myrsine, buttonwood, and dahoon holly.

Significant nearby features	Uniqueness (considering the relative rarity in relation to the regional landscape.)
Roadways, L-31E Canal, FPL Turkey Point Plant, Biscayne Bay	Not unique

Functions	Mitigation for previous permit/other historic use
Water storage	N/A

Anticipated Wildlife Utilization Based on Literature Review (List of species that are representative of the assessment area and reasonably expected to be found)	Anticipated Utilization by Listed Species (List species, their legal classification (E, T, SSC), type of use, and intensity of use of the assessment area)
Forage fishes	Occasional use by wading birds such as roseate spoonbill (SSC), white ibis (SSC), little blue heron (SSC), wood stork (E), reddish egret (SSC), snowy egret (SSC) and tricolored heron (SSC)

Observed Evidence of Wildlife Utilization (List species directly observed, or other signs such as tracks, droppings, casings, nests, etc.):

None

Additional relevant factors:

Assessment conducted by:	Assessment date(s):
K. Bullock, S. Rizzo	7/14/2010

PART II – Quantification of Assessment Area (impact or mitigation)
(See Sections 62-345.500 and .600, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
FPL Turkey Point Units 6 & 7 Project		Northwest Restoration Site - Exotic Wetland Hardwoods
Impact or Mitigation	Assessment conducted by:	Assessment date:
Mitigation	K. Bullock, S. Rizzo	7/14/2010

Scoring Guidance	Optimal (10)	Moderate(7)	Minimal (4)	Not Present (0)
The scoring of each indicator is based on what would be suitable for the type of wetland or surface water assessed	Condition is optimal and fully supports wetland/surface water functions	Condition is less than optimal, but sufficient to maintain most wetland/surface waterfunctions	Minimal level of support of wetland/surface water functions	Condition is insufficient to provide wetland/surface water functions

	w/o pres or current	with	
.500(6)(a) Location and Landscape Support	7	8	**Current**: Location and landscape support variable slightly reduced due to prevalence of exotic vegetation, mosquito ditches and spoil piles, and surrounding roadways and canals. Individual parameter scores: a) Support to wildlife listed in Part 1 by outside habitats = 6, due to proximity of roadways; b) Invasive exotic species = 6, moderate coverage; c) Wildlife access to and from outside = 6, decreased due to limitations imposed by surrounding roadways and lack of native vegetative communities; d) functions that benefit fish & wildlife downstream-distance or barriers = 6, area somewhat isolated from other habitats; e) Impacts to wildlife listed in Part 1 by outside land uses = 6, slightly reduced due to surrounding habitat degradation; f) Hydrologically connected areas downstream of assessment area = 6, connected through culverts to L31E; g) Dependency of downstream areas on assessment area = 6, some benefit to downstream areas. **With**: Location and landscape support variable slightly increased due to removal of historical disturbances (mosquito ditches and spoil piles), eradication of exotic vegetation, and preservation of parcel. Individual parameter scores: a) Support to wildlife listed in Part 1 by outside habitats = 8, due to increase in native habitat; b) Invasive exotic species = 9, exotic removal within Site; c) Wildlife access to and from outside = 7, somewhat decreased due to limitations imposed by surrounding roadways; d) functions that benefit fish & wildlife downstream-distance or barriers = 7, slight increase due to removal fo exotic vegetation; e) Impacts to wildlife listed in Part 1 by outside land uses = 7, restoration of habitats surrounding sawgrass marsh and periphyton mat communities; f) Hydrologically connected areas downstream of assessment area = 7, connected through culverts to L31E, removal of ditches will improve hydrology; g) Dependency of downstream areas on assessment area = 8, increased benefit to downstream areas due to exotic removal and ditch removal.
.500(6)(b)Water Environment (n/a for uplands)	5	8	**Current**: The water environment score is reduced due to the prevalence of ditching on the site. Individual parameter scores: a) water levels and flows = 5, altered water level due to ditching; b) water level indicators = 4, less than expected; c) soil moisture = 6, drier than expected; d) soil erosion or deposition = 5, spoil deposits; e) evidence of fire history = 6, less than typical; f) vegetation community zonation = 5, altered due to presence of spoil deposits supporting exotics; g) hydrologic stress on vegetation = 6, some due to altered hydrologic regime; h) use by animal species with specific hydrological requirements = 6, less than expected due to ditching and limited open water connections; i) vegetative species tolerant of and associated with water quality degradation = 7, typical of expected; j) direct observation of water quality = 8, no discoloration, turbidity, or sheen; k) existing water quality data = N/A; l) water depth wave, wave energy, currents and light penetration = N/A. **With**: The water environment score is increased due to the removal of ditching throughout the Site. Individual parameter scores: a) water levels and flows = 8, more typical water flows; b) water level indicators = 8, consistent with expected; c) soil moisture = 8, consistent with expected; d) soil erosion or deposition = 7, typical patterns; e) evidence of fire history = 8, restoration will incorporate prescribed fire; f) vegetation community zonation = 8, due to removal of exotics; g) hydrologic stress on vegetation = 8, due to improved hydrologic regime; h) use by animal species with specific hydrological requirements = 8, due to improved hydrology; i) vegetative species tolerant of and associated with water quality degradation = 7, minimal; j) direct observation of water quality = 8, no discoloration, turbidity, or sheen; k) existing water quality data = N/A; l) water depth wave, wave energy, currents and light penetration = N/A.
.500(6)(c)Community structure 1. Vegetation and/or 2. Benthic Community	4	7	**Current**: The community structure variable is reduced due to extensive coverage of Australian pine. Individual parameter scores: a) plant community species in the canopy, shrub, or ground stratum = 4, dominance of exotic species; b) invasive exotics or other invasive plant species = 4, extensive coverage; c) regeneration and recruitment = 5, less than expected; d) age & size distribution = 5, less than expected; e) density and quality of coarse woody debris, snag, den, and cavity = 5, Australian pine poor woody debris, no cavities; f) plant condition = 5, near monoculture of exotics reduces native plant extent and condition; g) land management practices = 5, due to alteration natural topography and hydrology; h) topographic features = 6, less than optimal; i) siltation or algal growth in submerged aquatic plant communities = N/A. **With**: The community structure variable is increased due to removal of exotics, restoration of sawgrass community, and improved hydrology. Individual parameter scores: a) plant community species in the canopy, shrub, or ground stratum = 7, dominance of native species; b) invasive exotics or other invasive plant species = 9, minimal coverage; c) regeneration and recruitment = 8, consistent with expected; d) age & size distribution = 7, slightly less than expected; e) density and quality of coarse woody debris, snag, den, and cavity = 7, adequate for system type; f) plant condition = 8, improved due to improved hydrology; g) land management practices = 8, due to removal of ditching and preservation; h) topographic features = 8, due to removal of ditching; i) siltation or algal growth in submerged aquatic plant communities = N/A.

Score = sum of above scores/30 (if uplands, divide by 20)	
current or w/o pres	with
0.53	0.77

Delta = [with-current]
0.24

If preservation as mitigation,
Preservation adjustment factor =
Adjusted mitigation delta =

If mitigation
Time lag (t-factor) = 1.0696 (5 years)
Risk factor = 1.25

For impact assessment areas
FL = delta x acres =

For mitigation assessment areas
RFG = delta/(t-factor x risk) = 0.18

Credits = RFG x acreage = 11.91

PART I – Qualitative Description
(See Section 62-345.400, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
FPL Turkey Point Units 6 & 7 Project		Northwest Restoration Site - Mosquito Ditches

FLUCCs code	Further classification (optional)	Impact or Mitigation Site?	Assessment Area Size
511		Mitigation	10.5 acres

Basin/Watershed Name/Number	Affected Waterbody (Class)	Special Classification (i.e.OFW, AP, other local/state/federal designation of importance)
North Canal/Florida City/03090202		None

Geographic relationship to and hydrologic connection with wetlands, other surface water, uplands

Sawgrass marsh, exotic wetland hardwoods, and mosquito ditches lie to the west of the Northwest Restoration Site; connected on east to L-31E Canal; further east lie mangrove wetlands of Biscayne National Park. SW 328th Street/North Canal lies to the north, and SW 344th Street/Florida City Canal lies to the south.

Assessment area description

The Northwest Restoration Site consists of several FPL-owned parcels totaling 240 acres located adjacent to the L-31E canal between 328th Street and 344th Street/Palm Drive, approximately two miles northwest of the Units 6&7 Site and directly west of the Biscayne National Park. The area is impacted due to historic hydrologic alteration in the form of a network of mosquito ditches as well as prevalence of exotic species, resulting in reduced quality of wildlife habitat and vegetative species diversity.

Significant nearby features	Uniqueness (considering the relative rarity in relation to the regional landscape.)
Roadways, L-31E Canal, FPL Turkey Point Plant, Biscayne Bay	Not unique

Functions	Mitigation for previous permit/other historic use
Water storage	N/A

Anticipated Wildlife Utilization Based on Literature Review (List of species that are representative of the assessment area and reasonably expected to be found)	Anticipated Utilization by Listed Species (List species, their legal classification (E, T, SSC), type of use, and intensity of use of the assessment area)
Forage fishes	Occasional use by wading birds such as roseate spoonbill (SSC), white ibis (SSC), little blue heron (SSC), wood stork (E), reddish egret (SSC), snowy egret (SSC) and tricolored heron (SSC)

Observed Evidence of Wildlife Utilization (List species directly observed, or other signs such as tracks, droppings, casings, nests, etc.):

None

Additional relevant factors:

Assessment conducted by:	Assessment date(s):
K. Bullock, S. Rizzo	7/14/2010

PART II – Quantification of Assessment Area (impact or mitigation)
(See Sections 62-345.500 and .600, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
FPL Turkey Point Units 6 & 7 Project		Northwest Restoration Site - Mosquito Ditches
Impact or Mitigation	Assessment conducted by:	Assessment date:
Mitigation	K. Bullock, S. Rizzo	7/14/2010

Scoring Guidance	Optimal (10)	Moderate(7)	Minimal (4)	Not Present (0)
The scoring of each indicator is based on what would be suitable for the type of wetland or surface water assessed	Condition is optimal and fully supports wetland/surface water functions	Condition is less than optimal, but sufficient to maintain most wetland/surface waterfunctions	Minimal level of support of wetland/surface water functions	Condition is insufficient to provide wetland/surface water functions

	w/o pres or current	with	
.500(6)(a) Location and Landscape Support	6	7	**Current**: Location and landscape support variable slightly reduced due to prevalence of exotic vegetation, mosquito ditches and spoil piles, and surrounding roadways and canals. Individual parameter scores: a) Support to wildlife listed in Part 1 by outside habitats = 6, due to proximity of roadways; b) Invasive exotic species = 4, extensive coverage; c) Wildlife access to and from outside = 6, decreased due to limitations imposed by surrounding roadways and lack of native vegetative communities; d) functions that benefit fish & wildlife downstream-distance or barriers = 6, area somewhat isolated from other habitats; e) Impacts to wildlife listed in Part 1 by outside land uses = 6, slightly reduced due to surrounding habitat degradation; f) Hydrologically connected areas downstream of assessment area = 6, connected through culverts to L31E; g) Dependency of downstream areas on assessment area = 6, some benefit to downstream areas. **With**: Location and landscape support variable slightly increased due to removal of historical disturbances (mosquito ditches and spoil piles), eradication of exotic vegetation, and preservation of parcel. Individual parameter scores: a) Support to wildlife listed in Part 1 by outside habitats = 7, due to increase in native habitat; b) Invasive exotic species = 9, exotic removal within Site; c) Wildlife access to and from outside = 7, somewhat decreased due to limitations imposed by surrounding roadways; d) functions that benefit fish & wildlife downstream-distance or barriers = 7, slight increase due to removal fo exotic vegetation; e) Impacts to wildlife listed in Part 1 by outside land uses = 7, restoration of habitats surrounding sawgrass marsh and periphyton mat communities; f) Hydrologically connected areas downstream of assessment area = 7, connected through culverts to L31E, removal of ditches will improve hydrology; g) Dependency of downstream areas on assessment area = 7, increased benefit to downstream areas due to exotic removal and ditch removal.
.500(6)(b)Water Environment (n/a for uplands)	5	8	**Current**: The water environment score is reduced due to the prevalence of ditching on the site. Individual parameter scores: a) water levels and flows = 5, altered water level due to ditching; b) water level indicators = 4, less than expected; c) soil moisture = 6, drier than expected; d) soil erosion or deposition = 5, spoil deposits; e) evidence of fire history = 6, less than typical; f) vegetation community zonation = 5, altered due to presence of spoil deposits supporting exotics; g) hydrologic stress on vegetation = 6, some due to altered hydrologic regime; h) use by animal species with specific hydrological requirements = 6, less than expected due to ditching and limited open water connections; i) vegetative species tolerant of and associated with water quality degradation = 7, typical of expected; j) direct observation of water quality = 8, no discoloration, turbidity, or sheen; k) existing water quality data = N/A; l) water depth wave, wave energy, currents and light penetration = N/A. **With**: The water environment score is increased due to the removal of ditching throughout the Site. Individual parameter scores: a) water levels and flows = 8, more typical water flows; b) water level indicators = 8, consistent with expected; c) soil moisture = 8, consistent with expected; d) soil erosion or deposition = 7, typical patterns; e) evidence of fire history = 8, restoration will incorporate prescribed fire; f) vegetation community zonation = 8, due to removal of exotics; g) hydrologic stress on vegetation = 8, due to improved hydrologic regime; h) use by animal species with specific hydrological requirements = 8, due to improved hydrology; i) vegetative species tolerant of and associated with water quality degradation = 7, minimal; j) direct observation of water quality = 8, no discoloration, turbidity, or sheen; k) existing water quality data = N/A; l) water depth wave, wave energy, currents and light penetration = N/A.
.500(6)(c)Community structure 1. Vegetation and/or 2. Benthic Community	4	7	**Current**: The community structure variable is reduced due to extensive coverage of Australian pine associated with mosquito ditches. Individual parameter scores: a) plant community species in the canopy, shrub, or ground stratum = 4, dominance of exotic species; b) invasive exotics or other invasive plant species = 4, extensive coverage; c) regeneration and recruitment = 5, less than expected; d) age & size distribution = 5, less than expected; e) density and quality of coarse woody debris, snag, den, and cavity = 5, Australian pine poor woody debris, no cavities; f) plant condition = 5, near monoculture of exotics reduces native plant extent and condition; g) land management practices = 5, due to alteration natural topography and hydrology; h) topographic features = 6, less than optimal; i) siltation or algal growth in submerged aquatic plant communities = N/A. **With**: The community structure variable is increased due to restoration of mosquito ditches to sawgrass marsh and improved hydrology. Individual parameter scores: a) plant community species in the canopy, shrub, or ground stratum = 7, dominance of native species; b) invasive exotics or other invasive plant species = 9, minimal coverage; c) regeneration and recruitment = 7, consistent with expected; d) age & size distribution = 7, slightly less than expected; e) density and quality of coarse woody debris, snag, den, and cavity = 7, adequate for system type; f) plant condition = 7, improved due to improved hydrology; g) land management practices = 8, due to removal of ditching and preservation; h) topographic features = 8, due to removal of ditching; i) siltation or algal growth in submerged aquatic plant communities = N/A.

Score = sum of above scores/30 (if uplands, divide by 20)	
current or w/o pres	with
0.50	0.73

If preservation as mitigation,
Preservation adjustment factor =
Adjusted mitigation delta =

For impact assessment areas
FL = delta x acres =

Delta = [with-current]
0.23

If mitigation
Time lag (t-factor) = 1.0696 (5 years)
Risk factor = 1.5

For mitigation assessment areas
RFG = delta/(t-factor x risk) = 0.14

Credits = RFG x acreage = 1.47

PART I – Qualitative Description
(See Section 62-345.400, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
FPL Turkey Point Units 6 & 7 Project		SW 320th Street Restoration Site - Palm Tree Nurseries

FLUCCs code	Further classification (optional)	Impact or Mitigation Site?	Assessment Area Size
241		Mitigation	42 acres

Basin/Watershed Name/Number	Affected Waterbody (Class)	Special Classification (i.e.OFW, AP, other local/state/federal designation of importance)
C-103/North Canal/03090202		None

Geographic relationship to and hydrologic connection with wetlands, other surface water, uplands

Tree nurseries lie to the north and west of the site. Mixed wetland forests and exotic hardwood wetlands lie to the east and south. Further east is the L-31E canal and Biscayne Bay.

Assessment area description

The SW 320th Street Restoration Site encompasses a total of 574 acres, including parcels located on the north and south of the C-103 Canal, extending east towards SFWMD-owned parcels adjacent to the L-31E Canal and the BNP. The parcels include approximatley 144 acres of wetlands dominated by Brazilian pepper and Australian pine, 169 acres of forested wetlands dominated by a mixture of native hardwoods and exotic species, and approximately 42 acres of palm tree nurseries. The northern portion of the SW 320th Street Site includes approximately 219 acres of historical palm tree nurseries currently being restored to freshwater marsh.

Significant nearby features	Uniqueness (considering the relative rarity in relation to the regional landscape.)
Homestead Air Force Base, FPL Turkey Point Plant, Biscayne Bay	Not unique

Functions	Mitigation for previous permit/other historic use
Current: Agricultural production Post-restoration: Wildlife habitat, water storage	N/A

Anticipated Wildlife Utilization Based on Literature Review (List of species that are representative of the assessment area and reasonably expected to be found)	Anticipated Utilization by Listed Species (List species, their legal classification (E, T, SSC), type of use, and intensity of use of the assessment area)
Post-restoration: Wading birds, shorebirds, forage fishes	Occasional use by wading birds such as roseate spoonbill (SSC), white ibis (SSC), little blue heron (SSC), wood stork (E), reddish egret (SSC), snowy egret (SSC) and tricolored heron (SSC)

Observed Evidence of Wildlife Utilization (List species directly observed, or other signs such as tracks, droppings, casings, nests, etc.):

None

Additional relevant factors:

Assessment conducted by:	Assessment date(s):
K. Bullock	6/1/2011

PART II – Quantification of Assessment Area (impact or mitigation)
(See Sections 62-345.500 and .600, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
FPL Turkey Point Units 6 & 7 Project		SW 320th Street Restoration Site - Tree Nurseries
Impact or Mitigation	Assessment conducted by:	Assessment date:
Mitigation	K. Bullock	6/1/2011

Scoring Guidance	Optimal (10)	Moderate(7)	Minimal (4)	Not Present (0)
The scoring of each indicator is based on what would be suitable for the type of wetland or surface water assessed	Condition is optimal and fully supports wetland/surface water functions	Condition is less than optimal, but sufficient to maintain most wetland/surface waterfunctions	Minimal level of support of wetland/surface water functions	Condition is insufficient to provide wetland/surface water functions

.500(6)(a) Location and Landscape Support		**Current**: Location and landscape support variable is reduced due to tree nurseries, proximity of roadways, presence of exotic vegetation, and ditching. Individual parameter scores: a) Support to wildlife listed in Part 1 by outside habitats = 6, due to planted palms; b) Invasive exotic species = 6, due to planted palms; c) Wildlife access to and from outside = 6, due to surrounding roadways and tree nurseries; d) functions that benefit fish & wildlife downstream-distance or barriers = 6, provides no functions; e) Impacts to wildlife listed in Part 1 by outside land uses = 6, slightly reduced due to surrounding habitat loss; f) Hydrologically connected areas downstream of assessment area = 6, connected through ditches to surrounding tree farms; g) Dependency of downstream areas on assessment area = 6, some benefit to downstream areas.
w/o pres or current: 6	with: 7	**With**: Location and landscape support variable is higher because area will be preserved. Individual parameter scores: a) Support to wildlife listed in Part 1 by outside habitats = 6, due to proximity of roadways; b) Invasive exotic species = 8, little coverage; c) Wildlife access to and from outside = 6, decreased due to limitations imposed by surrounding roadways and lack of open water connection; d) functions that benefit fish & wildlife downstream-distance or barriers = 6, area somewhat isolated from other habitats; e) Impacts to wildlife listed in Part 1 by outside land uses = 7, little to no surrounding habitat loss; f) Hydrologically connected areas downstream of assessment area = 6, connected through culverts to L31E; g) Dependency of downstream areas on assessment area = 7, more benefit to downstream areas due to exotic removal.
.500(6)(b)Water Environment (n/a for uplands)		**Current**: The water environment score is reduced due to the prevalence of ditching on the site. Individual parameter scores: a) water levels and flows = 1, altered water level due to ditching; b) water level indicators = 1, less than expected; c) soil moisture = 1, drier than expected; d) soil erosion or deposition = 1, due to nursery operations; e) evidence of fire history = N/A; f) vegetation community zonation = 1, not present; g) hydrologic stress on vegetation = 1, due to altered hydrologic regime; h) use by animal species with specific hydrological requirements = 1, very few; i) vegetative species tolerant of and associated with water quality degradation = N/A; j) direct observation of water quality = N/A, no discoloration, turbidity, or sheen; k) existing water quality data = N/A; l) water depth wave, wave energy, currents and light penetration = N/A.
w/o pres or current: 1	with: 5	**With**: The water environment score is increased due to the removal of ditching on the site. Individual parameter scores: a) water levels and flows = 6, more typical water flows; b) water level indicators = 6, mostly consistent with expected; c) soil moisture = 6, mostly consistent with expected; d) soil erosion or deposition = 6, mostly typical patterns; e) evidence of fire history = N/A; f) vegetation community zonation = 6, due to removal of palms; g) hydrologic stress on vegetation = 6, due to improved hydrologic regime; h) use by animal species with specific hydrological requirements = 6, some due to improved hydrology and resultant increase in number of fish species; i) vegetative species tolerant of and associated with water quality degradation = 6, mostly minimal; j) direct observation of water quality = 6, mostly no discoloration, turbidity, or sheen; k) existing water quality data = N/A; l) water depth wave, wave energy, currents and light penetration = N/A.
.500(6)(c)Community structure 1. Vegetation and/or 2. Benthic Community		**Current**: The community structure variable is reduced due to presence of planted palms. Individual parameter scores: a) plant community species in the canopy, shrub, or ground stratum = 1, planted palms; b) invasive exotics or other invasive plant species = 1, planted palms; c) regeneration and recruitment = 1, planted palms; d) age & size distribution = 1, less than expected; e) density and quality of coarse woody debris, snag, den, and cavity = 1, none present; f) plant condition = 1, planted palms; g) land management practices = 1, highly altered; h) topographic features = 1, not present; i) siltation or algal growth in submerged aquatic plant communities = N/A.
w/o pres or current: 1	with: 6	**With**: The community structure variable is increased due to removal of planted palms and improved hydrology. Individual parameter scores: a) plant community species in the canopy, shrub, or ground stratum = 6, mostly native species; b) invasive exotics or other invasive plant species = 6, little to moderate coverage; c) regeneration and recruitment = 6, mostly consistent with expected; d) age & size distribution = 6, slightly less than expected; e) density and quality of coarse woody debris, snag, den, and cavity = 6, mostly adequate for system type; f) plant condition = 6, improved due to improved hydrology; g) land management practices = 6, due to removal of ditching; h) topographic features = 6, due to removal of ditching; i) siltation or algal growth in submerged aquatic plant communities = N/A.

Score = sum of above scores/30 (if uplands, divide by 20)	
current or w/o pres: 0.27	with: 0.60

Delta = [with-current]
0.33

If preservation as mitigation,
Preservation adjustment factor =
Adjusted mitigation delta =

If mitigation
Time lag (t-factor) = 1.0696 (5 years)
Risk factor = 1.75

For impact assessment areas
FL = delta x acres =

For mitigation assessment areas
RFG = delta/(t-factor x risk) = 0.18

Credits = RFG x acreage = 7.56

PART I – Qualitative Description
(See Section 62-345.400, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
FPL Turkey Point Units 6 & 7 Project		SW 320th Street Restoration Site - Mixed Wetland Hardwoods/Exotic Wetland Hardwoods

FLUCCs code	Further classification (optional)	Impact or Mitigation Site?	Assessment Area Size
617/619		Mitigation	169 acres

Basin/Watershed Name/Number	Affected Waterbody (Class)	Special Classification (i.e.OFW, AP, other local/state/federal designation of importance)
C-103/North Canal/03090202		None

Geographic relationship to and hydrologic connection with wetlands, other surface water, uplands

Tree nurseries lie to the north and west of the site. Mixed wetland forests and exotic hardwood wetlands lie to the east and south. Further east is the L-31E canal and Biscayne Bay.

Assessment area description

The SW 320th Street Restoration Site encompasses a total of 574 acres, including parcels located on the north and south of the C-103 Canal, extending east towards SFWMD-owned parcels adjacent to the L-31E Canal and the BNP. The parcels include approximatley 144 acres of wetlands dominated by Brazilian pepper and Australian pine, 169 acres of forested wetlands dominated by a mixture of native hardwoods and exotic species, and approximately 42 acres of palm tree nurseries. The northern portion of the SW 320th Street Site includes approximately 219 acres of historical palm tree nurseries currently being restored to freshwater marsh. Areas of mixed wetland hardwoods/exotic wetland hardwoods are vegetated with a mixture of exotic and native species such as Brazilian pepper, Australian pine, buttonwood, mangroves, cocoplum, and coastal plain willow. Restoration target is mixed wetland hardwoods.

Significant nearby features	Uniqueness (considering the relative rarity in relation to the regional landscape.)
Homestead Air Force Base, FPL Turkey Point Plant, Biscayne Bay	Not unique

Functions	Mitigation for previous permit/other historic use
Current: Water storage Post-restoration: Wildlife habitat, water storage	N/A

Anticipated Wildlife Utilization Based on Literature Review (List of species that are representative of the assessment area and reasonably expected to be found)	Anticipated Utilization by Listed Species (List species, their legal classification (E, T, SSC), type of use, and intensity of use of the assessment area)
Post-restoration: Wading birds, shorebirds, forage fishes	Occasional use by wading birds such as roseate spoonbill (SSC), white ibis (SSC), little blue heron (SSC), wood stork (E), reddish egret (SSC), snowy egret (SSC) and tricolored heron (SSC)

Observed Evidence of Wildlife Utilization (List species directly observed, or other signs such as tracks, droppings, casings, nests, etc.):

None

Additional relevant factors:

Assessment conducted by:	Assessment date(s):
K. Bullock	6/1/2011

PART II – Quantification of Assessment Area (impact or mitigation)
(See Sections 62-345.500 and .600, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
FPL Turkey Point Units 6 & 7 Project		SW 320th Street Restoration Site - Mixed Wetland Hardwoods/Exotic Wetland Hardwoods
Impact or Mitigation	Assessment conducted by:	Assessment date:
Mitigation	K. Bullock	6/1/2011

Scoring Guidance	Optimal (10)	Moderate(7)	Minimal (4)	Not Present (0)
The scoring of each indicator is based on what would be suitable for the type of wetland or surface water assessed	Condition is optimal and fully supports wetland/surface water functions	Condition is less than optimal, but sufficient to maintain most wetland/surface waterfunctions	Minimal level of support of wetland/surface water functions	Condition is insufficient to provide wetland/surface water functions

.500(6)(a) Location and Landscape Support		**Current**: Location and landscape support variable is reduced due to proximity of roadways, presence of exotic vegetation, and ditching. Individual parameter scores: a) Support to wildlife listed in Part 1 by outside habitats = 6, due to proximity of roadways; b) Invasive exotic species = 6, moderate coverage; c) Wildlife access to and from outside = 6, decreased due to limitations imposed by surrounding roadways and lack of open water connection; d) functions that benefit fish & wildlife downstream-distance or barriers = 6, area somewhat isolated from other habitats; e) Impacts to wildlife listed in Part 1 by outside land uses = 6, slightly reduced due to surrounding habitat loss; f) Hydrologically connected areas downstream of assessment area = 6, connected through culverts to L31E; g) Dependency of downstream areas on assessment area = 6, some benefit to downstream areas.
w/o pres or current: 6	with: 7	**With**: Location and landscape support variable increased slightly due to removal of exotic species, backfilling of drainage ditches, and preservation. Individual parameter scores: a) Support to wildlife listed in Part 1 by outside habitats = 6, due to proximity of roadways; b) Invasive exotic species = 8,exotics will be eradicated; c) Wildlife access to and from outside = 6, decreased due to limitations imposed by surrounding roadways and lack of open water connection; d) functions that benefit fish & wildlife downstream-distance or barriers = 6, area somewhat isolated from other habitats; e) Impacts to wildlife listed in Part 1 by outside land uses = 7, little to no surrounding habitat loss; f) Hydrologically connected areas downstream of assessment area = 6, connected through culverts to L31E; g) Dependency of downstream areas on assessment area = 7, more benefit to downstream areas due to exotic removal.
.500(6)(b)Water Environment (n/a for uplands)		**Current**: The water environment score is reduced due to the prevalence of ditching on the site. Individual parameter scores: a) water levels and flows = 5, altered water level due to ditching; b) water level indicators = 4, less than expected; c) soil moisture = 5, drier than expected; d) soil erosion or deposition = 7, typical patterns; e) evidence of fire history = N/A; f) vegetation community zonation = 5, altered due to presence of exotics; g) hydrologic stress on vegetation = 5, some due to altered hydrologic regime; h) use by animal species with specific hydrological requirements = 5, due to lack of open water connection and resultant reduction in number of fish species; i) vegetative species tolerant of and associated with water quality degradation = 5, moderate; j) direct observation of water quality = 8, no discoloration, turbidity, or sheen; k) existing water quality data = N/A; l) water depth wave, wave energy, currents and light penetration = N/A.
w/o pres or current: 5	with: 7	**With**: The water environment score is increased due to the removal of ditching on the site. Individual parameter scores: a) water levels and flows = 8, more typical water flows; b) water level indicators = 8, consistent with expected; c) soil moisture = 8, consistent with expected; d) soil erosion or deposition = 7, typical patterns; e) evidence of fire history = N/A; f) vegetation community zonation = 8, due to removal of exotics; g) hydrologic stress on vegetation = 8, due to improved hydrologic regime; h) use by animal species with specific hydrological requirements = 8, due to improved hydrology and resultant increase in number of fish species; i) vegetative species tolerant of and associated with water quality degradation = 7, minimal; j) direct observation of water quality = 8, no discoloration, turbidity, or sheen; k) existing water quality data = N/A; l) water depth wave, wave energy, currents and light penetration = N/A.
.500(6)(c)Community structure 1. Vegetation and/or 2. Benthic Community		**Current**: The community structure variable is reduced due to prevalence of exotic species of vegetation. Individual parameter scores: a) plant community species in the canopy, shrub, or ground stratum = 5, mix of exotic and native species; b) invasive exotics or other invasive plant species = 5, moderate coverage; c) regeneration and recruitment = 5, slightly less than expected; d) age & size distribution = 5, less than expected; e) density and quality of coarse woody debris, snag, den, and cavity = 7, adequate for system type; f) plant condition = 5, due to dead stems and low productivity; g) land management practices = 5, due to alteration of community structure; h) topographic features = 5, less than optimal; i) siltation or algal growth in submerged aquatic plant communities = N/A.
w/o pres or current: 6	with: 8	**With**: The community structure variable is increased due to removal of exotics and improved hydrology. Individual parameter scores: a) plant community species in the canopy, shrub, or ground stratum = 8, native species; b) invasive exotics or other invasive plant species = 9, minimal coverage; c) regeneration and recruitment = 8, consistent with expected; d) age & size distribution = 7, slightly less than expected; e) density and quality of coarse woody debris, snag, den, and cavity = 7, adequate for system type; f) plant condition = 8, improved due to improved hydrology; g) land management practices = 8, due to removal of ditching; h) topographic features = 8, due to removal of ditching; i) siltation or algal growth in submerged aquatic plant communities = N/A.

Score = sum of above scores/30 (if uplands, divide by 20)	
current or w/o pres: 0.57	with: 0.73

Delta = [with-current]
0.16

If preservation as mitigation,
Preservation adjustment factor =
Adjusted mitigation delta =

If mitigation
Time lag (t-factor) = 5 years (1.0696)
Risk factor = 1.25

For impact assessment areas
FL = delta x acres =

For mitigation assessment areas
RFG = delta/(t-factor x risk) = 0.12

Credits = RFG x acreage = 20.28

PART I – Qualitative Description
(See Section 62-345.400, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
FPL Turkey Point Units 6 & 7 Project		SW 320th Street Restoration Site-Preservation - Freshwater Marshes

FLUCCs code	Further classification (optional)	Impact or Mitigation Site?	Assessment Area Size
641		Mitigation	219 acres

Basin/Watershed Name/Number	Affected Waterbody (Class)	Special Classification (i.e.OFW, AP, other local/state/federal designation of importance)
C-103/North Canal/03090202		None

Geographic relationship to and hydrologic connection with wetlands, other surface water, uplands

Tree nurseries lie to the north and west of the parcels. Mixed wetland forests and exotic species lie to the east and south. Further east is the L-31E canal and Biscayne Bay.

Assessment area description

The SW 320th Street Restoration Site encompasses a total of 574 acres, including parcels located on the north and south of the C-103 Canal, extending east towards SFWMD-owned parcels adjacent to the L-31E Canal and the BNP. The parcels include approximatley 144 acres of wetlands dominated by Brazilian pepper and Australian pine, 169 acres of forested wetlands dominated by a mixture of native hardwoods and exotic species, and approximately 42 acres of palm tree nurseries. The northern portion of the SW 320th Street Site includes approximately 219 acres of historical palm tree nurseries currently being restored to freshwater marsh. This parcel of freshwater marsh is proposed to be placed under a conservation easement for preservation in perpetuity.

Significant nearby features	Uniqueness (considering the relative rarity in relation to the regional landscape.)
Homestead Air Force Base, FPL Turkey Point Plant, Biscayne Bay	Not unique

Functions	Mitigation for previous permit/other historic use
Wildlife habitat, water storage	N/A

Anticipated Wildlife Utilization Based on Literature Review (List of species that are representative of the assessment area and reasonably expected to be found)	Anticipated Utilization by Listed Species (List species, their legal classification (E, T, SSC), type of use, and intensity of use of the assessment area)
Wading birds, shorebirds, forage fishes	Occasional use by wading birds such as roseate spoonbill (SSC), white ibis (SSC), little blue heron (SSC), wood stork (E), reddish egret (SSC), snowy egret (SSC) and tricolored heron (SSC)

Observed Evidence of Wildlife Utilization (List species directly observed, or other signs such as tracks, droppings, casings, nests, etc.):

None

Additional relevant factors:

Assessment conducted by:	Assessment date(s):
K. Bullock	6/1/2011

PART II – Quantification of Assessment Area (impact or mitigation)
(See Sections 62-345.500 and .600, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
FPL Turkey Point Units 6 & 7 Project		SW 320th Street Restoration Site - Preservation - Freshwater Marshes
Impact or Mitigation	Assessment conducted by:	Assessment date:
Mitigation	K. Bullock	6/1/2011

Scoring Guidance	Optimal (10)	Moderate(7)	Minimal (4)	Not Present (0)
The scoring of each indicator is based on what would be suitable for the type of wetland or surface water assessed	Condition is optimal and fully supports wetland/surface water functions	Condition is less than optimal, but sufficient to maintain most wetland/surface waterfunctions	Minimal level of support of wetland/surface water functions	Condition is insufficient to provide wetland/surface water functions

.500(6)(a) Location and Landscape Support		**Current**: Location and landscape support variable is slightly reduced due to presence of invasive vegetation and surrounding tree nurseries. Individual parameter scores: a) Support to wildlife listed in Part 1 by outside habitats = 6, due to surrounding habitats ; b) Invasive exotic species = 6, moderate coverage; c) Wildlife access to and from outside = 6, decreased due to limitations imposed by surrounding roadways and lack of open water connection; d) functions that benefit fish & wildlife downstream-distance or barriers = 6, some functions; e) Impacts to wildlife listed in Part 1 by outside land uses = 6, slightly reduced due to surrounding habitat loss; f) Hydrologically connected areas downstream of assessment area = 6, connected through culverts/ditching to L31E; g) Dependency of downstream areas on assessment area = 6, some benefit to downstream areas.
w/o pres or current: 6	with: 7	**With**: Location and landscape support variable is higher because area will be preserved. Individual parameter scores: a) Support to wildlife listed in Part 1 by outside habitats = 7, increased due to improvement of surrounding habitats; b) Invasive exotic species = 7, little coverage; c) Wildlife access to and from outside = 7, due to improvement of surrounding habitats; d) functions that benefit fish & wildlife downstream-distance or barriers = 7, due to improvement in surrounding habitats; e) Impacts to wildlife listed in Part 1 by outside land uses = 7, little to no surrounding habitat loss; f) Hydrologically connected areas downstream of assessment area = 7, due to improved hydrology in surrounding area; g) Dependency of downstream areas on assessment area = 7, more benefit to downstream areas due to improved hydrology in surrounding area.
.500(6)(b)Water Environment (n/a for uplands)		**Current**: The water environment score is reduced due to lack of natural water flow. Individual parameter scores: a) water levels and flows = 5, altered water level; b) water level indicators = 4, less than expected; c) soil moisture = 5, drier than expected; d) soil erosion or deposition = 4, increased; e) evidence of fire history = N/A; f) vegetation community zonation = 5, altered due to presence of invasives; g) hydrologic stress on vegetation = 5, some due to altered hydrologic regime; h) use by animal species with specific hydrological requirements = 5, due to lack of open water connection and resultant reduction in number of fish species; i) vegetative species tolerant of and associated with water quality degradation = 5, moderate; j) direct observation of water quality = 8, no discoloration, turbidity, or sheen; k) existing water quality data = N/A; l) water depth wave, wave energy, currents and light penetration = N/A.
w/o pres or current: 5	with: 5	**With**: The water environment score is same as current; no improvements proposed. Individual parameter scores: a) water levels and flows = 5, altered water level; b) water level indicators = 4, less than expected; c) soil moisture = 5, drier than expected; d) soil erosion or deposition = 4, increased; e) evidence of fire history = N/A; f) vegetation community zonation = 5, altered due to presence of invasives; g) hydrologic stress on vegetation = 5, some due to altered hydrologic regime; h) use by animal species with specific hydrological requirements = 5, due to lack of open water connection and resultant reduction in number of fish species; i) vegetative species tolerant of and associated with water quality degradation = 5, moderate; j) direct observation of water quality = 8, no discoloration, turbidity, or sheen; k) existing water quality data = N/A; l) water depth wave, wave energy, currents and light penetration = N/A.
.500(6)(c)Community structure 1. Vegetation and/or 2. Benthic Community		**Current**: The community structure variable is reduced due to presence of invasive species. Individual parameter scores: a) plant community species in the canopy, shrub, or ground stratum = 5, mix of exotic and native species; b) invasive exotics or other invasive plant species = 5, moderate coverage; c) regeneration and recruitment = 5, slightly less than expected; d) age & size distribution = 5, less than expected; e) density and quality of coarse woody debris, snag, den, and cavity = 5, not adequate for system type; f) plant condition = 5, due to dead stems and low productivity; g) land management practices = 5, due to alteration of community structure; h) topographic features = 5, less than optimal; i) siltation or algal growth in submerged aquatic plant communities = N/A.
w/o pres or current: 6	with: 7	**With**: The community structure variable is slightly increased due to natural regeneration from surrounding properties. Individual parameter scores: a) plant community species in the canopy, shrub, or ground stratum = 6, mostly native species; b) invasive exotics or other invasive plant species = 6, some coverage; c) regeneration and recruitment = 6, mostly consistent with expected; d) age & size distribution = 6, slightly less than expected; e) density and quality of coarse woody debris, snag, den, and cavity = 6, mostly adequate for system type; f) plant condition = 6, improved due to improved hydrology in surrounding area; g) land management practices = 6, improved; h) topographic features = 5, less than optimal; i) siltation or algal growth in submerged aquatic plant communities = N/A.

Score = sum of above scores/30 (if uplands, divide by 20)	
current or w/o pres: 0.57	with: 0.63

Delta = [with-current]
0.06

If preservation as mitigation,
Preservation adjustment factor = 0.9
Adjusted mitigation delta = 0.05

If mitigation
Time lag (t-factor) =
Risk factor =

For impact assessment areas
FL = delta x acres =

For mitigation assessment areas
RFG = delta/(t-factor x risk) =

Credits = adjusted mitigation delta x acreage = 10.95

PART I – Qualitative Description
(See Section 62-345.400, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
FPL Turkey Point Units 6 & 7 Project		SW 320th Street Restoration Site - Exotic Wetland Hardwoods

FLUCCs code	Further classification (optional)	Impact or Mitigation Site?	Assessment Area Size
619		Mitigation	144 acres

Basin/Watershed Name/Number	Affected Waterbody (Class)	Special Classification (i.e.OFW, AP, other local/state/federal designation of importance)
C-103/North Canal/03090202		None

Geographic relationship to and hydrologic connection with wetlands, other surface water, uplands

Tree nurseries lie to the north and west of the site. Mixed wetland forests and exotic hardwood wetlands lie to the east and south. Further east is the L-31E canal and Biscayne Bay.

Assessment area description

The SW 320th Street Restoration Site encompasses a total of 574 acres, including parcels located on the north and south of the C-103 Canal, extending east towards SFWMD-owned parcels adjacent to the L-31E Canal and the BNP. The parcels include approximatley 144 acres of wetlands dominated by Brazilian pepper and Australian pine, 169 acres of forested wetlands dominated by a mixture of native hardwoods and exotic species, and approximately 42 acres of palm tree nurseries. The northern portion of the SW 320th Street Site includes approximately 219 acres of historical palm tree nurseries currently being restored to freshwater marsh. Areas of exotic wetland hardwoods are dominated by Brazilian pepper and Australian pine. Restoration target is freshwater marsh community.

Significant nearby features	Uniqueness (considering the relative rarity in relation to the regional landscape.)
Homestead Air Force Base, FPL Turkey Point Plant, Biscayne Bay	Not unique

Functions	Mitigation for previous permit/other historic use
Current: Water storage Post-restoration: Wildlife habitat, water storage	N/A

Anticipated Wildlife Utilization Based on Literature Review (List of species that are representative of the assessment area and reasonably expected to be found)	Anticipated Utilization by Listed Species (List species, their legal classification (E, T, SSC), type of use, and intensity of use of the assessment area)
Post-restoration: Wading birds, shorebirds, forage fishes	Occasional use by wading birds such as roseate spoonbill (SSC), white ibis (SSC), little blue heron (SSC), wood stork (E), reddish egret (SSC), snowy egret (SSC) and tricolored heron (SSC)

Observed Evidence of Wildlife Utilization (List species directly observed, or other signs such as tracks, droppings, casings, nests, etc.):

None

Additional relevant factors:

Assessment conducted by:	Assessment date(s):
K. Bullock	6/1/2011

PART II – Quantification of Assessment Area (impact or mitigation)
(See Sections 62-345.500 and .600, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
FPL Turkey Point Units 6 & 7 Project		SW 320th Street Restoration Site - Exotic Wetland Hardwoods
Impact or Mitigation	Assessment conducted by:	Assessment date:
Mitigation	K. Bullock	6/1/2011

Scoring Guidance	Optimal (10)	Moderate(7)	Minimal (4)	Not Present (0)
The scoring of each indicator is based on what would be suitable for the type of wetland or surface water assessed	Condition is optimal and fully supports wetland/surface water functions	Condition is less than optimal, but sufficient to maintain most wetland/surface waterfunctions	Minimal level of support of wetland/surface water functions	Condition is insufficient to provide wetland/surface water functions

.500(6)(a) Location and Landscape Support		**Current**: Location and landscape support variable is reduced due to proximity of roadways, presence of exotic vegetation, and ditching. Individual parameter scores: a) Support to wildlife listed in Part 1 by outside habitats = 6, due to proximity of roadways; b) Invasive exotic species = 6, moderate coverage; c) Wildlife access to and from outside = 6, decreased due to limitations imposed by surrounding roadways and lack of open water connection; d) functions that benefit fish & wildlife downstream-distance or barriers = 6, area somewhat isolated from other habitats; e) Impacts to wildlife listed in Part 1 by outside land uses = 6, slightly reduced due to surrounding habitat loss; f) Hydrologically connected areas downstream of assessment area = 6, connected through culverts to L31E; g) Dependency of downstream areas on assessment area = 6, some benefit to downstream areas.
w/o pres or current	with	**With**: Location and landscape support variable increased slightly due to removal of exotic species, backfilling of drainage ditches, and preservation. Individual parameter scores: a) Support to wildlife listed in Part 1 by outside habitats = 6, due to proximity of roadways; b) Invasive exotic species = 8,exotics will be eradicated; c) Wildlife access to and from outside = 6, decreased due to limitations imposed by surrounding roadways and lack of open water connection; d) functions that benefit fish & wildlife downstream-distance or barriers = 6, area somewhat isolated from other habitats; e) Impacts to wildlife listed in Part 1 by outside land uses = 7, little to no surrounding habitat loss; f) Hydrologically connected areas downstream of assessment area = 6, connected through culverts to L31E; g) Dependency of downstream areas on assessment area = 7, more benefit to downstream areas due to exotic removal.
6	7	
.500(6)(b)Water Environment (n/a for uplands)		**Current**: The water environment score is reduced due to the prevalence of ditching on the site. Individual parameter scores: a) water levels and flows = 5, altered water level due to ditching; b) water level indicators = 4, less than expected; c) soil moisture = 5, drier than expected; d) soil erosion or deposition = 7, typical patterns; e) evidence of fire history = N/A; f) vegetation community zonation = 5, altered due to presence of exotics; g) hydrologic stress on vegetation = 5, some due to altered hydrologic regime; h) use by animal species with specific hydrological requirements = 5, due to lack of open water connection and resultant reduction in number of fish species; i) vegetative species tolerant of and associated with water quality degradation = 5, moderate; j) direct observation of water quality = 8, no discoloration, turbidity, or sheen; k) existing water quality data = N/A; l) water depth wave, wave
w/o pres or current	with	**With**: The water environment score is increased due to the removal of ditching on the site. Individual parameter scores: a) water levels and flows = 8, more typical water flows; b) water level indicators = 8, consistent with expected; c) soil moisture = 8, consistent with expected; d) soil erosion or deposition = 7, typical patterns; e) evidence of fire history = N/A; f) vegetation community zonation = 8, due to removal of exotics; g) hydrologic stress on vegetation = 8, due to improved hydrologic regime; h) use by animal species with specific hydrological requirements = 8, due to improved hydrology and resultant increase in number of fish species; i) vegetative species tolerant of and
5	7	
.500(6)(c)Community structure 1. Vegetation and/or 2. Benthic Community		**Current**: The community structure variable is reduced due to prevalence of exotic species of vegetation. Individual parameter scores: a) plant community species in the canopy, shrub, or ground stratum = 3, dominated by exotic species; b) invasive exotics or other invasive plant species = 3, extensive coverage; c) regeneration and recruitment = 5, slightly less than expected; d) age & size distribution = 5, less than expected; e) density and quality of coarse woody debris, snag, den, and cavity = 4, inadequate for system type due to dense coverage of exotics; f) plant condition = 4, little evidence of natives; g) land management practices = 5, due to ditching, alteration of community structure; h) topographic features = 5, less than optimal; i) siltation or algal growth in submerged aquatic plant communities = N/A.
w/o pres or current	with	**With**: The community structure variable is increased due to removal of exotics and improved hydrology. Individual parameter scores: a) plant community species in the canopy, shrub, or ground stratum = 8, native species; b) invasive exotics or other invasive plant species = 9, minimal coverage; c) regeneration and recruitment = 8, consistent with expected; d) age & size distribution = 7, slightly less than expected; e) density and quality of coarse woody debris, snag, den, and cavity = 7, adequate for system type; f) plant condition = 8, improved due to improved hydrology; g) land management practices = 8, due to removal of ditching; h) topographic features = 8, due to removal
4	7	

Score = sum of above scores/30 (if uplands, divide by 20)	
current or w/o pres	with
0.50	0.70

If preservation as mitigation,
Preservation adjustment factor =
Adjusted mitigation delta =

For impact assessment areas
FL = delta x acres =

Delta = [with-current]
0.20

If mitigation
Time lag (t-factor) = 5 years (1.0696)
Risk factor = 1.25

For mitigation assessment areas
RFG = delta/(t-factor x risk) = 0.15

Credits = RFG x acreage = 21.60

APPENDIX B

W.A.T.E.R. FUNCTIONAL ASSESSMENT

IMPACT SITES

FPL Everglades Mitigation Bank

Mitigation Bank Site Suitability Evaluation (MBSE) Matrix

Parameters — **Turkey Point Units 6&7 Site**

(Site Suitability created by: Donaldson Hearing)

Parameter	Scoring Criteria	Ratings	Score
1. Adjacent to lands or waters of regional Importance and results in identifiable ecological benefits to adjacent lands or waters.	State Park, OFW, AP, and including but not limited to Special Waters on at least 1 boundary	1	
	Adjacent lands contain no special designation or undesignated special value	0	0
2. Property is within boundary of an acknowledged state, local or regional acquisition program	Property is within boundary of an acquisition program	1	
	Property is not within boundary of an acquisition program	0	0
3. Property contains ecological or geological features consistently considered by regional Scientist, or federal and state agencies to be unusual, unique or rare in the region and is of sufficient size	Property qualifies	1	
	Property does not qualify	0	0
4. Property designated as being of critical state or federal concern and/or contains special designations,	Property contains at least 1 special designation.	1	1
	Property contains no special designations.	0	
5. Property important to acknowledged restoration efforts	Property is important.	1	0
	Property is not important.	0	
6. Ownership and control of the property.	Property is privately owned.	1	1
	Property is publicly owned.	0	
7. Threatened , Endangered & Species of Special Concern Presence of animal species (faunal) found on site	Documented Presence of Species on site	1	1
	No documented Presence of species on site.	0	
8. Threatened , Endangered & Listed Species Presence of plant species (floral) found on site	Documented Presence of Species on site	1	1
	No documented Presence of species on site.	0	
9. Threat of loss or destruction from development activities. *(Development Pressure)*	High probability of development.	1	
	Low probability of development.	0	0
10. Extent to which lands are subject to Local, State, and Federal dredge and fill/ ERP Regulations	Property is regulated.	1	1
	Property is not regulated.	0	
	Value Cumulative Score (CS)		**5**

The Mitigation Bank Site Suitability Evaluation Matrix is designed to provide a quantifiable means of determining the number of mitigation credits that should be assigned to a bank for **"value"** related parameters. Value related parameters are human values determined to be important to society; and therefore are not measurable in a purely functional analysis. Functional analysis will only measure the degree of functional ecological improvement (degree of ecological improvement) resulting from mitigation activities. The SS Evaluation measures and provides credit for societal values that separate one mitigation bank from another as required by Ch. 62-342 .470 (a) (b) (e) (f) (g) (h) (i) F.A.C.. The SS evaluation is not to be utilized in conjunction with a functional analysis methodology which also utilizes value related parameters in its analysis.

Evaluation Scale

Site	Suitability
1.0	1.10
.9	1.09
.8	1.08
.7	1.07
.6	1.06
.5	1.05
.4	1.04
.3	1.03
.2	1.02
.1	1.01
0	0

Site Suitability Matrix		
Maximum Possible Score (MPS)		10
Cumulative Score (CS)		**5**
		0.5

EPA, USACOE, USF & W, FDEP, NMFS, SFWMD, Dade DERM, FPL, CH

3-Apr-96

After Calculating the Site Suitability Score determine the Site Suitability Multiplier by utilizing the Evaluation Scale to the left. The Site Suitability Multiplier is to be multiplied times the number of the Functional Mitigation Credits, resulting from the **(W.A.T.E.R.)** Functional Assessment of the Mitigation Bank, to determine the number of Site Suitability Credits to be assigned to the Mitigation Bank.

Mitigation Bank Wetland Function -- Evaluation Matrix

Units 6&7 Site

Scoring conducted by: Karl Bullock & Colleen Cunningham

W.A.T.E.R. - Wetland Assessment Technique for Environmental Reviews

Based on WBI, WQI, WRAP, HGM and 4th Priority Project List (PPL) with technical advise from EPA, FDEP, ACOE, NMFS, USF & W, SFWMD & Dade County (W.A.T.E.R. created by: Bill L. Maus)

Data Collected on: Nov 28 and 29, 2007; also used data from DERM visit on Aug 29, 2007

Project: FPL Turkey Point Units 6&7

Parameter/ Function	Scoring Criteria	Ratings	Polygon		Polygon		Polygon		Polygon		Polygon	
			Mangrove Heads - Pre	Mangrove Heads - Impact	Remnant Canals- Pre	Remnant Canals- Impact	Mudflat/Wet Spoil Piles- Pre	Mudflat/Wet Spoil Piles - Impact	Dwarf Mangrove- Pre	Dwarf Mangrove- Impact	Open Water/Active Canals - Pre	Water/Active Canals - Impact
1. Fish & Wildlife Functions *Apply to freshwater, saltwater, brackish and mitigation systems*												
	7 or more species commonly observed	3										
a. Waterfowl, wading birds, wetland dependent, or aquatic	3-6 species commonly observed	2	3	0	2	0	3	0	3	0	2	0
birds of prey.	1-2 species commonly observed	1										
(Mit. Bank - High specie count w/ low pop. #'s score 1	0 species commonly observed	0										
	7 or more species commonly observed	3										
b. Fish	3-6 species commonly observed	2	2.5	0	2.5	0	1	0	2	0	2	0
(Mit. Bank - High specie count w/ low pop. #'s score 1	1-2 species commonly observed	1										
Restoration that causes 12% pop. Increases-higher score)	0 species commonly observed	0										
	Top predator (carnivore) &/or large mammals	3										
c. Mammals	Medium sized mammals , (adult weight > 6 ibs.)	2	2	0	0	0	2	0	2	0	0	0
(Mit. Bank - High specie count w/ low pop. #'s score 1	Small animals (rodents, etc.) , (adult weight < 6 lbs.)	1										
Restoration that causes 12% pop. Increases-higher score)	0 species present	0										
	7 or more species commonly observed	3										
d. Aquatic macroinvertebrates, amphibians	3-6 species commonly observed	2	3	0	3	0	2	0	3	0	3	0
(Mit. Bank - High specie count w/ low pop. #'s score 1	1-2 species commonly observed	1										
Restoration that causes 12% pop. Increases-higher score)	0 species commonly observed	0										
	Large species observed	3										
e. Aquatic reptiles	Aquatic turtles	2	1.5	0	0	0	1	0	1	0	1	0
(Mit. Bank - High specie count w/ low pop. #'s score 1	Snakes & lizards	1										
Restoration that causes 12% pop. Increases-higher score)	No evidence of species present	0										

Mitigation Bank Wetland Function -- Evaluation Matrix

Units 6&7 Site

Scoring conducted by: Karl Bullock & Colleen Cunningham

W.A.T.E.R. - Wetland Assessment Technique for Environmental Reviews

Based on WBI, WQI, WRAP, HGM and 4th Priority Project List (PPL) with technical advise from EPA, FDEP, ACOE, NMFS, USF & W, SFWMD & Dade County (W.A.T.E.R. created by: Bill L. Maus)

Data Collected on: Nov 28 and 29, 2007; also used data from DERM visit on Aug 29, 2007

Project: FPL Turkey Point Units 6&7

Parameter/ Function	Scoring Criteria	Ratings	Polygon		Polygon		Polygon		Polygon		Polygon	
			Mangrove Heads - Pre	Mangrove Heads - Impact	Remnant Canals- Pre	Remnant Canals- Impact	Mudflat/Wet Spoil Piles-Pre	Mudflat/Wet Spoil Piles - Impact	Dwarf Mangrove-Pre	Dwarf Mangrove-Impact	Open Water/Active Canals - Pre	Water/Active Canals - Impact
2. Vegetative Functions *Apply to freshwater, saltwater, brackish and mitigation systems*												
a. Overstory/shrub canopy	Desirable trees/shrub healthy & providing appropriate habitat (seedlings present) & no inappropriate species	3	2.5	0	N/A	0	N/A	0	2	0	N/A	0
	Desirable trees/shrubs exhibit signs of stress (no seedlings) few inappropriate species present	2										
	Inappropriate trees/shrubs shading or overcoming desirable tree/shrubs	1										
	Very little or no desirable tree/shrubs present (evidence suggests there should be)	0										
b. Vegetative ground cover	Assessment area exhibits <2% inappropriate herbaceous ground cover for specific wetland systems and groundcover is present	3	N/A	0	3	0	1	0	N/A	0	1	0
	Assessment area contains >2% but <30% inappropriate herbaceous groundcover, or lack of groundcover >2% but < 30%	2										
	Assessment area contains >30% to <70% inappropriate herbaceous groundcover, or lack of ground cover >30% to <70%	1										
	Assessment area >70% inappropriate herbaceous groundcover or lack of groundcover >70%	0										
c. Periphyton mat coverage	Periphyton (Blue-green algae) present with average mat thickness >1 1/4 in. (measure active & dead layer)	3	2	0	2	0	0	0	1	0	2	0
	Periphyton (Blue-green algae) present with average mat thickness between 3/4 in. to 1 1/4 in. (active & dead layer)	2										
	Periphyton (Blue-green algae) present with average mat thickness between 1/4 in. to 3/4 in. (active & dead layer)	1										
	Periphyton (Blue-green algae) not present or if pressent with average thickness of 0.0 to 1/4 in. (active & dead layer)	0										
d. Category 1 and Category 2 exotic plants or (non-native) species	< (or = to) 1 % exotic plant cover	3	3	0	3	0	3	0	3	0	2	0
	>1 % to 10 % exotic plant cover	2										
	>10 % to 65 % exotic plant cover	1										
	> 65 % exotic plant cover	0										
e. Habitat diversity (vegetative) *(within assessment area)*	>3 native species communities on site within assesssment area	3	2	0	2	0	2	0	2	0	2	0
	2 or 3 native species communities on site within assessment area	2										
	1 native species community with 75 % to 90 % coverage within assessment area	1										
	1 native species community has > 90 % coverage within assessment area	0										
f. Biological diversity within 3000 feet *(approximately 1/2 mile from edge of assessment area)*	> 3 alternative habitats available (including upland)	3	3	0	3	0	3	0	3	0	3	0
	2 to 3 alternative habitats	2										
	1 alternative habitat	1										
	Same habitat type, or inappropriate / impacted	0										

Mitigation Bank Wetland Function -- Evaluation Matrix

Units 6&7 Site

Scoring conducted by: Karl Bullock & Colleen Cunningham

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Based on WBI, WQI, WRAP, HGM and 4th Priority Project List (PPL) with technical advise from EPA, FDEP, ACOE, NMFS, USF & W, SFWMD & Dade County (W.A.T.E.R. created by: Bill L. Maus)

Data Collected on: Nov 28 and 29, 2007; also used data from DERM visit on Aug 29, 2007

Project: FPL Turkey Point Units 6&7

Parameter/ Function	Scoring Criteria	Ratings	Polygon		Polygon		Polygon		Polygon		Polygon	
			Mangrove Heads - Pre	Mangrove Heads - Impact	Remnant Canals- Pre	Remnant Canals- Impact	Mudflat/Wet Spoil Piles-Pre	Mudflat/Wet Spoil Piles - Impact	Dwarf Mangrove-Pre	Dwarf Mangrove-Impact	Open Water/Active Canals - Pre	Water/Active Canals - Impact
3. Hydrologic Functions												
a. Surface water hydrology / sheet flow *Apply to freshwater, saltwater, brackish and mitigation systems*	Major connection *(Flowing water/ river or floodplain/ uniform flow through natural systems)*	3	1	0	1	0	1	0	1	0	1	0
	Moderate connection *(Natural restriction of flow or Flowing water due to hydrologic engineering)*	2										
	Minor connection *(Runoff collection point, or uneven flow due to berms, ditches, roadways etc.)*	1										
	Hydrologically isolated, no net lateral movement	0										
b. Hydroperiod (normal year) fresh systems	> 8 months inundated with no reversals & every year drydown	3										
	>5 months < 8 months or >5 years continuous inundation (look for strong water stains on persistent vegetation)	2										
	>1 month < 5 months, with possible reversals (look for soft or less distinct water stains on persistent vegetation)	1										
	< 4 weeks cumulative annual inundation or < 2 weeks continuous inundation	0										
b-1 Alternate to b. for Short Hydroperiod (normal year) fresh systems:	>10 weeks of continuous inundation including soil saturation	3										
	> 6 weeks but <10 weeks of continuous inundation including soil saturation	2										
	>2 weeks but <6 weeks of inudation, including soil saturation	1										
	<2 weeks of continuos inundation	0										
b-2 Alternate to b. for Saltwater, brackish (tidal) systems	Inundated by >90% high tides		0.5	0	0.5	0	0.5	0	0.5	0	0.5	0
	Inundated by "spring" high tides (bi-monthly)	2	This is a hypersaline closed system used to manage industrial wastewater. There is no tidal inundation.									
	Inundated by "extreme high" tides only (biannually)	1										
	Inundated by storm surges only	0										
b-3 Alternate to b. for High Marsh (Juncus-Distichlis)	Inundated by high "spring" tides (monthly) and flushed by fresh water sheetflow every 10 days average	3										
	Inundated by high "spring" tides (monthly) and flushed by fresh water sheetflow every 30 days on the average	2										
	Inundated by high "spring" tides (monthly)and exposed to rain only	1										
	Inundated by >50% high tides and exposed to rain only	0										
b-4 Alternate to b. for Riverine systems	Inundated by high tides (daily) and/or recieves and maintains fresh water at least into first half of dry season	3										
	Inundated by high tides (daily) and/or recieves and maintains fresh water during rainy season only	2										
	Inundated by high tides (daily) and/or recieves fresh water but does not maintain (reversal) during rainy season	1										
	Inundated by spring tides (bi-monthly) and/or experiences frequent reversals of fresh water (flashy)	0										

Mitigation Bank Wetland Function -- Evaluation Matrix

Units 6&7 Site

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W.A.T.E.R. - Wetland Assessment Technique for Environmental Reviews

Based on WBI, WQI, WRAP, HGM and 4th Priority Project List (PPL) with technical advise from EPA, FDEP, ACOE, NMFS, USF & W, SFWMD & Dade County (W.A.T.E.R. created by: Bill L. Maus)

Data Collected on: Nov 28 and 29, 2007; also used data from DERM visit on Aug 29, 2007

Project: FPL Turkey Point Units 6&7

Parameter/ Function	Scoring Criteria	Ratings	Polygon		Polygon		Polygon		Polygon		Polygon	
			Mangrove Heads - Pre	Mangrove Heads - Impact	Remnant Canals- Pre	Remnant Canals- Impact	Mudflat/Wet Spoil Piles- Pre	Mudflat/Wet Spoil Piles - Impact	Dwarf Mangrove- Pre	Dwarf Mangrove- Impact	Open Water/Active Canals - Pre	Water/Active Canals - Impact
3. Hydrologic Functions continued												
c. Hydropattern (fresh system)	>1 ft. water depth for at least 2.5 months and <6 in. for >1 month (measure water mark/ lichen line), or water depth ideal for specific wetland system.	3										
	>6 in to 1 ft. for at least 2.5 months (measure water mark/ lichen line) or water depth borderline over or under for specific wetland system	2										
	<6 in. for at least 2.5 months (measure water mark/ lichen line) or water depth incorrect for specific wetland system	1										
	<6 in. in association with either canals, ditches, swales, culverts, pumps, and/or wellfields, or these factors cause water depth to be too deep for specific system.	0										
c-1 Alternate to c. for Saltwater, brackish (tidal) systems	>1 ft. water depth <2 ft. on 90% high tides	3										
	> 6 in. water depth <1 ft. on >50% high tides	2	This is a hypersaline closed system used to manage industrial wastewaters. There is no tidal inundation.									
	< 6 in. water depth , but > than saturated	1	1.5	0	1.5	0	1.5	0	1.5	0	1.5	0
	Saturated by saline water table only	0										
c-2 Alternate to c. for High Marsh (Juncus-Distichlis)	>10 in. water depth <2 ft. on regular basis during growing season	3										
	>5 in. to 10in. water depth on regular basis during growing season	2										
	>1 in. to 5 in. water depth on regular basis during growing season	1										
	>0.0 in. to 1 in. water depth sporadically during growing season	0										
c-3 Alternate to c. for Riverine systems	>2 ft. water depth (main channel) <6 ft. for 8 months	3										
	>2 ft. water depth (main channel) <4 ft. for 6 months	2										
	>1 ft. water depth (main channel) <2.5 ft. for 4 months	1										
	<1 ft. water depth, but dry for >4 weeks (dry season)	0										

Mitigation Bank Wetland Function -- Evaluation Matrix

Units 6&7 Site

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Data Collected on: Nov 28 and 29, 2007; also used data from DERM visit on Aug 29, 2007

Project: FPL Turkey Point Units 6&7

Parameter/ Function	Scoring Criteria	Ratings	Polygon		Polygon		Polygon		Polygon		Polygon	
			Mangrove Heads - Pre	Mangrove Heads - Impact	Remnant Canals- Pre	Remnant Canals- Impact	Mudflat/Wet Spoil Piles-Pre	Mudflat/Wet Spoil Piles - Impact	Dwarf Mangrove-Pre	Dwarf Mangrove-Impact	Open Water/Active Canals - Pre	Water/Active Canals - Impact
3. Hydrologic Functions continued												
d. Water Quality	No indication of poor water quality (lab testing required, all values within acceptable range)	3	1.5	0	1.5	0	1.5	0	1.5	0	1.5	0
	No visual indicators of poor water quality observed (1 value just over or under acceptable range)	2										
	Visual indicators of poor water quality questionable (2 values over or under acceptable range)	1										
	Visual indicators of poor water quailty observed or lab verified (values are out of acceptable range)	0										
e. Intactness of historic topography (soil disturbance)	Unaltered	3	1.5	0	1	0	1.5	0	1.5	0	1	0
	Slightly altered soil disturbance, < 10% of assessment area	2										
	Moderately altered soil disturbance, < 25% of assessment area	1										
	Extremely altered soil disturbance, may exceed 50% of assessment area	0										
f. Soils, organic (fresh systems)	Organic soil classified hydric soil >12 in. or any thickness over bedrock/caprock with perched water table and either condition covering >90% of surface area	3										
	Organic soil classified hydric soil >6 in. but <12 in. and covering >90% of surface area	2										
	Organic soil classified hydric soil >1 in. but <6 in. and covering >50% but <90% of surface area	1										
	Organic soil classified non-hydric soil <1 in. for >50% of surface area	0										
f-1 Alternate to f. for *Freshwater, saltwater systems*	Sandy soil classified hydric soil with distinct mottling and concretions present in greater than 40% of horizon.	3										
	Sandy soil classified hydric soil with mottling and concretions present in > 20% but < 40% of horizon.	2										
	Sandy soil classified hydric soil with light or sparse mottling and concretions < 2 mm diameter or < 20% of horizon.	1										
	Sandy soil exhibits strong evidence of disturbance or mechanical manipulations or is fill material.	0										
f-2 Alternate to f. for *Freshwater, saltwater, brackish (tidal) systems*	Calcareous loam >12 in. and >90 % of surface area	3	3	0	2	0	2	0	3	0	2	0
	Calcareous loam >6 in. to <12 in. and >90% of surface area	2										
	Calcareous loam >1 in. to <6 in. and covering >50% but <90% of surface area	1										
	Calcareous loam <1 in. for >50% of surface area	0										

Mitigation Bank Wetland Function -- Evaluation Matrix

Units 6&7 Site

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Based on WBI, WQI, WRAP, HGM and 4th Priority Project List (PPL) with technical advise from EPA, FDEP, ACOE, NMFS, USF & W, SFWMD & Dade County (W.A.T.E.R. created by: Bill L. Maus)

Data Collected on: Nov 28 and 29, 2007; also used data from DERM visit on Aug 29, 2007

Project: FPL Turkey Point Units 6&7

Parameter/ Function	Scoring Criteria	Ratings	Polygon		Polygon		Polygon		Polygon		Polygon	
			Mangrove Heads - Pre	Mangrove Heads - Impact	Remnant Canals- Pre	Remnant Canals- Impact	Mudflat/Wet Spoil Piles- Pre	Mudflat/Wet Spoil Piles - Impact	Dwarf Mangrove- Pre	Dwarf Mangrove- Impact	Open Water/Active Canals - Pre	Water/Active Canals - Impact
4. Salinity Parameters *Apply to freshwater, saltwater, brackish, hypersaline and mitigation systems -* ***Choose 1***												
a. Optimum salinity for fresh systems during growing season based on mean high salinity for a normal year. *Apply to freshwater systems within 5 miles of the coast*	<2 parts per thousand (ppt)	3										
	2 to 3 parts per thousand (ppt)	2										
	4 to 5 parts per thousand (ppt)	1										
	>5 parts per thousand (ppt)	0										
a-1. Alternate to a. Optimum salinity for brackish systems during growing season based on mean high salinity for a normal year. *Apply to brackish (tidal) systems only*	6 to 8 parts per thousand (ppt)	3										
	9 to 13 parts per thousand (ppt)	2										
	14 to 16 parts per thousand (ppt)	1										
	>16 parts per thousand (ppt)	0										
a-2. Alternate to a. Optimum salinity for saline systems during growing season based on mean high salinity for a normal year. *Apply to saline marsh (tidal) systems only*	17 to 19 parts per thousand (ppt)	3										
	20 to 22 parts per thousand (ppt)	2										
	23 to 25 parts per thousand (ppt)	1										
	>25 parts per thousand (ppt)	0										
a-3. Alternate to a. Optimum salinity for hypersaline systems during growing season based on mean high salinity for a normal year. *Apply to hypersaline (tidal) systems only*	26 to 41 parts per thousand (ppt)	3										
	42 to 46 parts per thousand (ppt)	2	2	0	2	0	2	0	2	0	2	0
	47 to 51 parts per thousand (ppt)	1										
	>51 parts per thousand (ppt)	0										
a-4 Alternate to a. Optimum salinity for riverine/tidal creek system during growing season based on mean high slainity for a normal year. *Apply to riverine systems only*	bottom (lower) third between 12 to 25 ppt middle third between 5 to 11 ppt. upper (top) third betweem 0 to 4 ppt.	3										
	bottom (lower) third between 25 to 32 ppt middle third between 6 to 24 ppt. upper (top) third betweem 0 to 5 ppt.	2										
	bottom (lower) third between 30 to 40 ppt middle third between 8 to 29 ppt. upper (top) third betweem 0 to 7 ppt.	1										
	bottom (lower) third between 35 to 50 ppt middle third between 10 to 34 ppt. upper (top) third betweem 0 to 9 ppt.	0										
	Cumulative Score (SC)		35.5	0.0	30.0	0.0	28.0	0.0	33.0	0.0	27.5	0.0
	Maximum Possible Score (MPS)		51.00	51.00	51.00	51.00	51.00	51.00	51.00	51.00	51.00	51.00
	W.A.T.E.R. = Cumulative Score/Maximum Possible Score		**0.70**	**0.00**	**0.59**	**0.00**	**0.55**	**0.00**	**0.65**	**0.00**	**0.54**	**0.00**

W.A.T.E.R. created by: Bill L. Maus

11/1/1995

Mitigation Bank Wetland Function -- Evaluation Matrix

Nuclear Administration Bldg, Training Bldg, and Parking Area

Scoring conducted by: Karl Bullock & Colleen Cunningham

W.A.T.E.R. - Wetland Assessment Technique for Environmental Reviews

Project: FPL Turkey Point Units 6&7

Based on WBI, WQI, WRAP, HGM and 4th Priority Project List (PPL) with technical advise from EPA, FDEP, ACOE, NMFS, USF & W, SFWMD & Dade County (W.A.T.E.R. created by: Bill L. Maus)

Parameter/ Function	Scoring Criteria	Ratings	Polygon		Polygon		Polygon		Polygon		Polygon	
			Mangrove / Willow - Pre	Mangrove /Willow - Impact	Mangrove - Pre	Mangrove - Impact						
1. Fish & Wildlife Functions *Apply to freshwater, saltwater, brackish and mitigation systems*												
	7 or more species commonly observed	3										
a. Waterfowl, wading birds, wetland dependent, or aquatic	3-6 species commonly observed	2	2	0	3	0						
birds of prey.	1-2 species commonly observed	1										
(Mit. Bank - High species count w/ low pop. #'s score 1	0 species commonly observed	0										
	7 or more species commonly observed	3										
b. Fish	3-6 species commonly observed	2	2.5	0	2.5	0						
(Mit. Bank - High species count w/ low pop. #'s score 1	1-2 species commonly observed	1										
Restoration that causes 12% pop. Increases-higher score)	0 species commonly observed	0										
	Top predator (carnivore) &/or large mammals	3										
c. Mammals	Medium sized mammals , (adult weight > 6 ibs.)	2	2	0	2	0						
(Mit. Bank - High species count w/ low pop. #'s score 1	Small animals (rodents, etc.) , (adult weight < 6 lbs.)	1										
Restoration that causes 12% pop. Increases-higher score)	0 species present	0										
	7 or more species commonly observed	3										
d. Aquatic macroinvertebrates, amphibians	3-6 species commonly observed	2	3	0	3	0						
(Mit. Bank - High species count w/ low pop. #'s score 1	1-2 species commonly observed	1										
Restoration that causes 12% pop. Increases-higher score)	0 species commonly observed	0										
	Large species observed	3										
e. Aquatic reptiles	Aquatic turtles	2	2	0	2.5	0						
(Mit. Bank - High species count w/ low pop. #'s score 1	Snakes & lizards	1										
Restoration that causes 12% pop. Increases-higher score)	No evidence of species present	0										

Mitigation Bank Wetland Function -- Evaluation Matrix

Nuclear Administration Bldg, Training Bldg, and Parking Area

Scoring conducted by: Karl Bullock & Colleen Cunningham

W.A.T.E.R. - Wetland Assessment Technique for Environmental Reviews

Project: FPL Turkey Point Units 6&7

Based on WBI, WQI, WRAP, HGM and 4th Priority Project List (PPL) with technical advise from EPA, FDEP, ACOE, NMFS, USF & W, SFWMD & Dade County (W.A.T.E.R. created by: Bill L. Maus)

Parameter/ Function	Scoring Criteria	Ratings	Polygon		Polygon		Polygon		Polygon		Polygon	
			Mangrove / Willow - Pre	Mangrove /Willow - Impact	Mangrove - Pre	Mangrove - Impact						
2. Vegetative Functions *Apply to freshwater, saltwater, brackish and mitigation systems*												
a. Overstory/shrub canopy	Desirable trees/shrub healthy & providing appropriate habitat (seedlings present) & no inappropriate species	3	2	0	2.5	0						
	Desirable trees/shrubs exhibit signs of stress (no seedlings) few inappropriate species present	2										
	Inappropriate trees/shrubs shading or overcoming desirable tree/shrubs	1										
	Very little or no desirable tree/shrubs present (evidence suggests there should be)	0										
b. Vegetative ground cover	Assessment area exhibits <2% inappropriate herbaceous ground cover for specific wetland systems and groundcover is present	3	2.5	0	2.5	0						
	Assessment area contains >2% but <30% inappropriate herbaceous groundcover, or lack of groundcover >2% but < 30%	2										
	Assessment area contains >30% to <70% inappropriate herbaceous groundcover, or lack of ground cover >30% to <70%	1										
	Assessment area >70% inappropriate herbaceous groundcover or lack of groundcover >70%	0										
c. Periphyton mat coverage	Periphyton (Blue-green algae) present with average mat thickness >1 1/4 in. (measure active & dead layer)	3	2	0	2	0						
	Periphyton (Blue-green algae) present with average mat thickness between 3/4 in. to 1 1/4 in. (active & dead layer)	2										
	Periphyton (Blue-green algae) present with average mat thickness between 1/4 in. to 3/4 in. (active & dead layer)	1										
	Periphyton (Blue-green algae) not present or if pressent with average thickness of 0.0 to 1/4 in. (active & dead layer)	0										
d. Category 1 and Category 2 exotic plants or (non-native) species	< (or = to) 1 % exotic plant cover	3	2	0	2	0						
	>1 % to 10 % exotic plant cover	2										
	>10 % to 65 % exotic plant cover	1										
	> 65 % exotic plant cover	0										
e. Habitat diversity (vegetative) *(within assessment area)*	>3 native species communities on site within assesssment area	3	2	0	2	0						
	2 or 3 native species communities on site within assessment area	2										
	1 native species community with 75 % to 90 % coverage within assessment area	1										
	1 native species community has > 90 % coverage within assessment area	0										
f. Biological diversity within 3000 feet *(approximately 1/2 mile from edge of assessment area)*	> 3 alternative habitats available (including upland)	3	2	0	2	0						
	2 to 3 alternative habitats	2										
	1 alternative habitat	1										
	Same habitat type, or inappropriate / impacted	0										

Mitigation Bank Wetland Function -- Evaluation Matrix

Nuclear Administration Bldg, Training Bldg, and Parking Area

Scoring conducted by: Karl Bullock & Colleen Cunningham

W.A.T.E.R. - Wetland Assessment Technique for Environmental Reviews

Project: FPL Turkey Point Units 6&7

Based on WBI, WQI, WRAP, HGM and 4th Priority Project List (PPL) with technical advise from EPA, FDEP, ACOE, NMFS, USF & W, SFWMD & Dade County (W.A.T.E.R. created by: Bill L. Maus)

Parameter/ Function	Scoring Criteria	Ratings	Polygon		Polygon		Polygon		Polygon		Polygon	
			Mangrove / Willow - Pre	Mangrove /Willow - Impact	Mangrove - Pre	Mangrove - Impact						
3. Hydrologic Functions												
a. Surface water hydrology / sheet flow *Apply to freshwater, saltwater, brackish and mitigation systems*	Major connection *(Flowing water/ river or floodplain/ uniform flow through natural systems)*	3	1	0	1	0						
	Moderate connection *(Natural restriction of flow or Flowing water due to hydrologic engineering)*	2										
	Minor connection *(Runoff collection point, or uneven flow due to berms, ditches, roadways etc,)*	1										
	Hydrologically isolated, no net lateral movement	0										
b. Hydroperiod (normal year) fresh systems	> 8 months inundated with no reversals & every year drydown	3										
	>5 months < 8 months or >5 years continuous inundation (look for strong water stains on persistent vegetation)	2										
	>1 month < 5 months, with possible reversals (look for soft or less distinct water stains on persistent vegetation)	1										
	< 4 weeks cumulative annual inundation or < 2 weeks continuous inundation	0										
b-1 Alternate to b. for Short Hydroperiod (normal year) fresh systems:	>10 weeks of continuous inundation including soil saturation	3										
	> 6 weeks but <10 weeks of continuous inundation including soil saturation	2										
	>2 weeks but <6 weeks of inudation, including soil saturation	1										
	<2 weeks of continuos inundation	0										
b-2 Alternate to b. for Saltwater, brackish (tidal) systems	Inundated by >90% high tides		2.5	0	2.5	0	No tidal connection, continuous inundation					
	Inundated by "spring" high tides (bi-monthly)	2										
	Inundated by "extreme high" tides only (biannually)	1										
	Inundated by storm surges only	0										
b-3 Alternate to b. for High Marsh (Juncus-Distichlis)	Inundated by high "spring" tides (monthly) and flushed by fresh water sheetflow every 10 days average	3										
	Inundated by high "spring" tides (monthly) and flushed by fresh water sheetflow every 30 days on the average	2										
	Inundated by high "spring" tides (monthly)and exposed to rain only	1										
	Inundated by >50% high tides and exposed to rain only	0										
b-4 Alternate to b. for Riverine systems	Inundated by high tides (daily) and/or recieves and maintains fresh water at least into first half of dry season	3										
	Inundated by high tides (daily) and/or recieves and maintains fresh water during rainy season only	2										
	Inundated by high tides (daily) and/or recieves fresh water but does not maintain (reversal) during rainy season	1										
	Inundated by spring tides (bi-monthly) and/or experiences frequent reversals of fresh water (flashy)	0										

Mitigation Bank Wetland Function -- Evaluation Matrix

Nuclear Administration Bldg, Training Bldg, and Parking Area

Scoring conducted by: Karl Bullock & Colleen Cunningham

W.A.T.E.R. - Wetland Assessment Technique for Environmental Reviews

Project: FPL Turkey Point Units 6&7

Based on WBI, WQI, WRAP, HGM and 4th Priority Project List (PPL) with technical advise from EPA, FDEP, ACOE, NMFS, USF & W, SFWMD & Dade County (W.A.T.E.R. created by: Bill L. Maus)

Parameter/ Function	Scoring Criteria	Ratings	Polygon		Polygon		Polygon		Polygon		Polygon	
			Mangrove / Willow - Pre	Mangrove /Willow - Impact	Mangrove - Pre	Mangrove - Impact						
3. Hydrologic Functions continued												
c. Hydropattern (fresh system)	>1 ft. water depth for at least 2.5 months and <6 in. for >1 month (measure water mark/ lichen line), or water depth ideal for specific wetland system.	3										
	>6 in to 1 ft. for at least 2.5 months (measure water mark/ lichen line) or water depth borderline over or under for specific wetland system	2										
	<6 in. for at least 2.5 months (measure water mark/ lichen line) or water depth incorrect for specific wetland system	1										
	<6 in. in association with either canals, ditches, swales, culverts, pumps, and/or wellfields, or these factors cause water depth to be too deep for specific system.	0										
c-1 Alternate to c. for Saltwater, brackish (tidal) systems	>1 ft. water depth <2 ft. on 90% high tides	3	2	0	2	0						
	> 6 in. water depth <1 ft. on >50% high tides	2										
	< 6 in. water depth , but > than saturated	1										
	Saturated by saline water table only	0										
c-2 Alternate to c. for High Marsh (Juncus-Distichlis)	>10 in. water depth <2 ft. on regular basis during growing season	3										
	>5 in. to 10in. water depth on regular basis during growing season	2										
	>1 in. to 5 in. water depth on regular basis during growing season	1										
	>0.0 in. to 1 in. water depth sporadically during growing season	0										
c-3 Alternate to c. for Riverine systems	>2 ft. water depth (main channel) <6 ft. for 8 months	3										
	>2 ft. water depth (main channel) <4 ft. for 6 months	2										
	>1 ft. water depth (main channel) <2.5 ft. for 4 months	1										
	<1 ft. water depth, but dry for >4 weeks (dry season)	0										

Mitigation Bank Wetland Function -- Evaluation Matrix

Nuclear Administration Bldg, Training Bldg, and Parking Area

Scoring conducted by: Karl Bullock & Colleen Cunningham

W.A.T.E.R. - Wetland Assessment Technique for Environmental Reviews

Based on WBI, WQI, WRAP, HGM and 4th Priority Project List (PPL) with technical advise from EPA, FDEP, ACOE, NMFS, USF & W, SFWMD & Dade County (W.A.T.E.R. created by: Bill L. Maus)

Project: FPL Turkey Point Units 6&7

Parameter/ Function	Scoring Criteria	Ratings	Polygon		Polygon		Polygon		Polygon		Polygon	
			Mangrove / Willow - Pre	Mangrove /Willow - Impact	Mangrove - Pre	Mangrove - Impact						
3. Hydrologic Functions continued												
d. Water Quality	No indication of poor water quality (lab testing required, all values within acceptable range)	3	2	0	2.5	0						
	No visual indicators of poor water quality observed (1 value just over or under acceptable range)	2										
	Visual indicators of poor water quality questionable (2 values over or under acceptable range)	1										
	Visual indicators of poor water quailty observed or lab verified (values are out of acceptable range)	0										
e. Intactness of historic topography (soil disturbance)	Unaltered	3	1.5	0	1.5	0						
	Slightly altered soil disturbance, < 10% of assessment area	2										
	Moderately altered soil disturbance, < 25% of assessment area	1										
	Extremely altered soil disturbance, may exceed 50% of assessment area	0										
f. Soils, organic (fresh systems)	Organic soil classified hydric soil >12 in. or any thickness over bedrock/caprock with perched water table and either condition covering >90% of surface area	3										
	Organic soil classified hydric soil >6 in. but <12 in. and covering >90% of surface area	2										
	Organic soil classified hydric soil >1 in. but <6 in. and covering >50% but <90% of surface area	1										
	Organic soil classified non-hydric soil <1 in. for >50% of surface area	0										
f-1 Alternate to f. for *Freshwater, saltwater systems*	Sandy soil classified hydric soil with distinct mottling and concretions present in greater than 40% of horizon.	3										
	Sandy soil classified hydric soil with mottling and concretions present in > 20% but < 40% of horizon.	2										
	Sandy soil classified hydric soil with light or sparse mottling and concretions < 2 mm diameter or < 20% of horizon.	1										
	Sandy soil exhibits strong evidence of disturbance or mechanical manipulations or is fill material.	0										
f-2 Alternate to f. for *Freshwater, saltwater, brackish (tidal) systems*	Calcareous loam >12 in. and >90 % of surface area	3	2.5	0	2.5	0						
	Calcareous loam >6 in. to <12 in. and >90% of surface area	2										
	Calcareous loam >1 in. to <6 in. and covering >50% but <90% of surface area	1										
	Calcareous loam <1 in. for >50% of surface area	0										

Mitigation Bank Wetland Function -- Evaluation Matrix

Nuclear Administration Bldg, Training Bldg, and Parking Area

Scoring conducted by: Karl Bullock & Colleen Cunningham

W.A.T.E.R. - Wetland Assessment Technique for Environmental Reviews

Based on WBI, WQI, WRAP, HGM and 4th Priority Project List (PPL) with technical advise from EPA, FDEP, ACOE, NMFS, USF & W, SFWMD & Dade County (W.A.T.E.R. created by: Bill L. Maus)

Project: FPL Turkey Point Units 6&7

Parameter/ Function	Scoring Criteria	Ratings	Polygon		Polygon		Polygon		Polygon		Polygon	
			Mangrove / Willow - Pre	Mangrove /Willow - Impact	Mangrove - Pre	Mangrove - Impact						
4. Salinity Parameters *Apply to freshwater, saltwater, brackish, hypersaline and mitigation systems -* ***Choose 1***												
a. Optimum salinity for fresh systems during growing season based on mean high salinity for a normal year. *Apply to freshwater systems within 5 miles of the coast*	<2 parts per thousand (ppt)	3										
	2 to 3 parts per thousand (ppt)	2										
	4 to 5 parts per thousand (ppt)	1										
	>5 parts per thousand (ppt)	0										
a-1. Alternate to a. Optimum salinity for brackish systems during growing season based on mean high salinity for a normal year. *Apply to brackish (tidal) systems only*	6 to 8 parts per thousand (ppt)	3										
	9 to 13 parts per thousand (ppt)	2	2	0	2	0						
	14 to 16 parts per thousand (ppt)	1										
	>16 parts per thousand (ppt)	0										
a-2. Alternate to a. Optimum salinity for saline systems during growing season based on mean high salinity for a normal year. *Apply to saline marsh (tidal) systems only*	17 to 19 parts per thousand (ppt)	3										
	20 to 22 parts per thousand (ppt)	2										
	23 to 25 parts per thousand (ppt)	1										
	>25 parts per thousand (ppt)	0										
a-3. Alternate to a. Optimum salinity for hypersaline systems during growing season based on mean high salinity for a normal year. *Apply to hypersaline (tidal) systems only*	26 to 41 parts per thousand (ppt)	3										
	42 to 46 parts per thousand (ppt)	2										
	47 to 51 parts per thousand (ppt)	1										
	>51 parts per thousand (ppt)	0										
a-4 Alternate to a. Optimum salinity for riverine/tidal creek system during growing season based on mean high slainity for a normal year. *Apply to riverine systems only*	bottom (lower) third between 12 to 25 ppt middle third between 5 to 11 ppt. upper (top) third betweem 0 to 4 ppt.	3										
	bottom (lower) third between 25 to 32 ppt middle third between 6 to 24 ppt. upper (top) third betweem 0 to 5 ppt.	2										
	bottom (lower) third between 30 to 40 ppt middle third between 8 to 29 ppt. upper (top) third betweem 0 to 7 ppt.	1										
	bottom (lower) third between 35 to 50 ppt middle third between 10 to 34 ppt. upper (top) third betweem 0 to 9 ppt.	0										
	Cumulative Score (SC)		37.5	0.0	40.0	0.0						
	Maximum Possible Score (MPS)		54.00	54.00	54.00	51.00						
	W.A.T.E.R. = Cumulative Score/Maximum Possible Score		**0.69**	**0.00**	**0.74**	**0.00**						

W.A.T.E.R. created by: Bill L. Maus

11/1/1995

Mitigation Bank Wetland Function -- Evaluation Matrix

FPL Reclaimed Water Treatment Facility

Scoring conducted by: Karl Bullock & Colleen Cunningham

W.A.T.E.R. - Wetland Assessment Technique for Environmental Reviews

Based on WBI, WQI, WRAP, HGM and 4th Priority Project List (PPL) with technical advise from EPA, FDEP, ACOE, NMFS, USF & W, SFWMD & Dade County (W.A.T.E.R. created by: Bill L. Maus)

Project: FPL Turkey Point Units 6&7

Parameter/ Function	Scoring Criteria	Ratings	Polygon		Polygon		Polygon		Polygon		Polygon	
			Sawgrass Marsh/Dwarf Mangrove - Pre	Sawgrass Marsh/Dwarf Mangrove - Impact	Exotic Wetland Hardwoods - Pre	Exotic Wetland Hardwoods - Impact	Canals/Ditches - Pre	Canals/Ditches - Impact	Mixed Wetland Hardwoods - Pre	Mixed Wetland Hardwoods - Impact		
1. Fish & Wildlife Functions *Apply to freshwater, saltwater, brackish and mitigation systems*												
a. Waterfowl, wading birds, wetland dependent, or aquatic birds of prey. (Mit. Bank - High species count w/ low pop. #'s score 1	7 or more species commonly observed	3	3	0	1	0	2	0	3	0		
	3-6 species commonly observed	2										
	1-2 species commonly observed	1										
	0 species commonly observed	0										
b. Fish (Mit. Bank - High species count w/ low pop. #'s score 1 Restoration that causes 12% pop. Increases-higher score)	7 or more species commonly observed	3	2.5	0	1	0	2.5	0	2.5	0		
	3-6 species commonly observed	2										
	1-2 species commonly observed	1										
	0 species commonly observed	0										
c. Mammals (Mit. Bank - High species count w/ low pop. #'s score 1 Restoration that causes 12% pop. Increases-higher score)	Top predator (carnivore) &/or large mammals	3	2	0	2	0	2	0	2	0		
	Medium sized mammals , (adult weight > 6 ibs.)	2										
	Small animals (rodents, etc.) , (adult weight < 6 lbs.)	1										
	0 species present	0										
d. Aquatic macroinvertebrates, amphibians (Mit. Bank - High species count w/ low pop. #'s score 1 Restoration that causes 12% pop. Increases-higher score)	7 or more species commonly observed	3	3	0	2	0	2.5	0	3	0		
	3-6 species commonly observed	2										
	1-2 species commonly observed	1										
	0 species commonly observed	0										
e. Aquatic reptiles (Mit. Bank - High specie count w/ low pop. #'s score 1 Restoration that causes 12% pop. Increases-higher score)	Large species observed	3	2.5	0	1	0	2.5	0	2.5	0		
	Aquatic turtles	2										
	Snakes & lizards	1										
	No evidence of species present	0										
2. Vegetative Functions *Apply to freshwater, saltwater, brackish and mitigation systems*												
a. Overstory/shrub canopy	Desirable trees/shrub healthy & providing appropriate habitat (seedlings present) & no inappropriate species	3	2.5	0	1	0	2	0	2.5	0		
	Desirable trees/shrubs exhibit signs of stress (no seedlings) few inappropriate species present	2										
	Inappropriate trees/shrubs shading or overcoming desirable tree/shrubs	1										
	Very little or no desirable tree/shrubs present (evidence suggests there should be)	0										
b. Vegetative ground cover	Assessment area exhibits <2% inappropriate herbaceous ground cover for specific wetland systems and groundcover is present	3	3	0	1	0	2	0	3	0		
	Assessment area contains >2% but <30% inappropriate herbaceous groundcover, or lack of groundcover >2% but < 30%	2										
	Assessment area contains >30% to <70% inappropriate herbaceous groundcover, or lack of ground cover >30% to <70%	1										
	Assessment area >70% inappropriate herbaceous groundcover or lack of groundcover >70%	0										
c. Periphyton mat coverage	Periphyton (Blue-green algae) present with average mat thickness >1 1/4 in. (measure active & dead layer)	3	2.5	0	0.5	0	1.5	0	2.5	0		
	Periphyton (Blue-green algae) present with average mat thickness between 3/4 in. to 1 1/4 in. (active & dead layer)	2										
	Periphyton (Blue-green algae) present with average mat thickness between 1/4 in. to 3/4 in. (active & dead layer)	1										
	Periphyton (Blue-green algae) not present or if pressent with average thickness of 0.0 to 1/4 in. (active & dead layer)	0										
d. Category 1 and Category 2 exotic plants or (non-native) species	< (or = to) 1 % exotic plant cover	3	2.5	0	0	0	1	0	2.5	0		
	>1 % to 10 % exotic plant cover	2										
	>10 % to 65 % exotic plant cover	1										
	> 65 % exotic plant cover	0										
e. Habitat diversity (vegetative) *(within assessment area)*	>3 native species communities on site within assesssment area	3	2	0	2	0	2	0	3	0		
	2 or 3 native species communities on site within assessment area	2										
	1 native species community with 75 % to 90 % coverage within assessment area	1										

Mitigation Bank Wetland Function -- Evaluation Matrix

FPL Reclaimed Water Treatment Facility

Scoring conducted by: Karl Bullock & Colleen Cunningham

W.A.T.E.R. - Wetland Assessment Technique for Environmental Reviews

Project: FPL Turkey Point Units 6&7

Based on WBI, WQI, WRAP, HGM and 4th Priority Project List (PPL) with technical advise from EPA, FDEP, ACOE, NMFS, USF & W, SFWMD & Dade County (W.A.T.E.R. created by: Bill L. Maus)

Parameter/ Function	Scoring Criteria	Ratings	Polygon		Polygon		Polygon		Polygon		Polygon	
			Sawgrass Marsh/Dwarf Mangrove - Pre	Sawgrass Marsh/Dwarf Mangrove - Impact	Exotic Wetland Hardwoods - Pre	Exotic Wetland Hardwoods - Impact	Canals/Ditches - Pre	Canals/Ditches - Impact	Mixed Wetland Hardwoods - Pre	Mixed Wetland Hardwoods - Impact		
	1 native species community has > 90 % coverage within assessment area	0										
f. Biological diversity within 3000 feet *(approximately 1/2 mile from edge of assessment area)*	> 3 alternative habitats available (including upland)	3	2	0	2	0	2	0	3	0		
	2 to 3 alternative habitats	2										
	1 alternative habitat	1										
	Same habitat type, or inappropriate / impacted	0										
3. Hydrologic Functions												
a. Surface water hydrology / sheet flow *Apply to freshwater, saltwater, brackish and mitigation systems*	Major connection *(Flowing water/ river or floodplain/ uniform flow through natural systems)*	3	1.5	0	1.5	0	1.5	0	1.5	0		
	Moderate connection *(Natural restriction of flow or Flowing water due to hydrologic engineering)*	2										
	Minor connection *(Runoff collection point, or uneven flow due to berms, ditches, roadways etc.)*	1										
	Hydrologically isolated, no net lateral movement	0										
b. Hydroperiod (normal year) fresh systems	> 8 months inundated with no reversals & every year drydown	3	2	0	2	0	1.5	0	2	0		
	>5 months < 8 months or >5 years continuous inundation (look for strong water stains on persistent vegetation)	2										
	>1 month < 5 months, with possible reversals (look for soft or less distinct water stains on persistent vegetation)	1										
	< 4 weeks cumulative annual inundation or < 2 weeks continuous inundation	0										
b-1 Alternate to b. for Short Hydroperiod (normal year) fresh systems:	>10 weeks of continuous inundation including soil saturation	3										
	> 6 weeks but <10 weeks of continuous inundation including soil saturation	2										
	>2 weeks but <6 weeks of inudation, including soil saturation	1										
	<2 weeks of continuos inundation	0										
b-2 Alternate to b. for Saltwater, brackish (tidal) systems	Inundated by >90% high tides											
	Inundated by "spring" high tides (bi-monthly)	2										
	Inundated by "extreme high" tides only (biannually)	1										
	Inundated by storm surges only	0										
b-3 Alternate to b. for High Marsh (Juncus-Distichlis)	Inundated by high "spring" tides (monthly) and flushed by fresh water sheetflow every 10 days average	3										
	Inundated by high "spring" tides (monthly) and flushed by fresh water sheetflow every 30 days on the average	2										
	Inundated by high "spring" tides (monthly)and exposed to rain only	1										
	Inundated by >50% high tides and exposed to rain only	0										
b-4 Alternate to b. for Riverine systems	Inundated by high tides (daily) and/or recieves and maintains fresh water at least into first half of dry season	3										
	Inundated by high tides (daily) and/or recieves and maintains fresh water during rainy season only	2										
	Inundated by high tides (daily) and/or recieves fresh water but does not maintain (reversal) during rainy season	1										
	Inundated by spring tides (bi-monthly) and/or experiences frequent reversals of fresh water (flashy)	0										
3. Hydrologic Functions continued												
c. Hydropattern (fresh system)	>1 ft. water depth for at least 2.5 months and <6 in. for >1 month (measure water mark/ lichen line), or water depth ideal for specific wetland system.	3	2.5	0	1.5	0	0.5	0	2.5	0		
	>6 in to 1 ft. for at least 2.5 months (measure water mark/ lichen line) or water depth borderline over or under for specific wetland system	2										
	<6 in. for at least 2.5 months (measure water mark/ lichen line) or water depth incorrect for specific wetland system	1										

Mitigation Bank Wetland Function -- Evaluation Matrix

FPL Reclaimed Water Treatment Facility

Scoring conducted by: Karl Bullock & Colleen Cunningham

W.A.T.E.R. - Wetland Assessment Technique for Environmental Reviews

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Project: FPL Turkey Point Units 6&7

Parameter/ Function	Scoring Criteria	Ratings	Polygon		Polygon		Polygon		Polygon		Polygon	
			Sawgrass Marsh/Dwarf Mangrove - Pre	Sawgrass Marsh/Dwarf Mangrove - Impact	Exotic Wetland Hardwoods - Pre	Exotic Wetland Hardwoods - Impact	Canals/Ditches - Pre	Canals/Ditches - Impact	Mixed Wetland Hardwoods - Pre	Mixed Wetland Hardwoods - Impact		
	<6 in. in association with either canals, ditches, swales, culverts, pumps, and/or wellfields, or these factors cause water depth to be too deep for specific system.	0										
c-1 Alternate to c. for Saltwater, brackish (tidal) systems	>1 ft. water depth <2 ft. on 90% high tides	3										
	> 6 in. water depth <1 ft. on >50% high tides	2										
	< 6 in. water depth , but > than saturated	1										
	Saturated by saline water table only	0										
c-2 Alternate to c. for High Marsh (Juncus-Distichlis)	>10 in. water depth <2 ft. on regular basis during growing season	3										
	>5 in. to 10in. water depth on regular basis during growing season	2										
	>1 in. to 5 in. water depth on regular basis during growing season	1										
	>0.0 in. to 1 in. water depth sporadically during growing season	0										
c-3 Alternate to c. for Riverine systems	>2 ft. water depth (main channel) <6 ft. for 8 months	3										
	>2 ft. water depth (main channel) <4 ft. for 6 months	2										
	>1 ft. water depth (main channel) <2.5 ft. for 4 months	1										
	<1 ft. water depth, but dry for >4 weeks (dry season)	0										
3. Hydrologic Functions continued												
d. Water Quality	No indication of poor water quality (lab testing required, all values within acceptable range)	3										
	No visual indicators of poor water quality observed (1 value just over or under acceptable range)	2										
	Visual indicators of poor water quality questionable (2 values over or under acceptable range)	1	2.5	0	2.5	0	2	0	2.5	0		
	Visual indicators of poor water quailty observed or lab verified (values are out of acceptable range)	0										
e. Intactness of historic topography (soil disturbance)	Unaltered	3										
	Slightly altered soil disturbance, < 10% of assessment area	2										
	Moderately altered soil disturbance, < 25% of assessment area	1	2.5	0	1	0	0.5	0	2.5	0		
	Extremely altered soil disturbance, may exceed 50% of assessment area	0										
f. Soils, organic (fresh systems)	Organic soil classified hydric soil >12 in. or any thickness over bedrock/caprock with perched water table and either condition covering >90% of surface area	3										
	Organic soil classified hydric soil >6 in. but <12 in. and covering >90% of surface area	2										
	Organic soil classified hydric soil >1 in. but <6 in. and covering >50% but <90% of surface area	1										
	Organic soil classified non-hydric soil <1 in. for >50% of surface area	0										
f-1 Alternate to f. for *Freshwater, saltwater systems*	Sandy soil classified hydric soil with distinct mottling and concretions present in greater than 40% of horizon.	3										
	Sandy soil classified hydric soil with mottling and concretions present in > 20% but < 40% of horizon.	2										
	Sandy soil classified hydric soil with light or sparse mottling and concretions < 2 mm diameter or < 20% of horizon.	1										
	Sandy soil exhibits strong evidence of disturbance or mechanical manipulations or is fill material.	0										
f-2 Alternate to f. for *Freshwater, saltwater, brackish (tidal) systems*	Calcareous loam >12 in. and >90 % of surface area	3										
	Calcareous loam >6 in. to <12 in. and >90% of surface area	2	3	0	2	0	2	0	3	0		
	Calcareous loam >1 in. to <6 in. and covering >50% but <90% of surface area	1										
	Calcareous loam <1 in. for >50% of surface area	0										
4. Salinity Parameters *Apply to freshwater, saltwater, brackish, hypersaline and mitigation systems -* ***Choose 1***												
a. Optimum salinity for fresh systems during growing season based on mean high salinity for a normal year.	<2 parts per thousand (ppt)	3										
	2 to 3 parts per thousand (ppt)	2	2	0	2	0	2	0	2	0		
	4 to 5 parts per thousand (ppt)	1										

Mitigation Bank Wetland Function -- Evaluation Matrix

FPL Reclaimed Water
Treatment Facility

Scoring conducted by: Karl Bullock & Colleen Cunningham

W.A.T.E.R. - Wetland Assessment Technique for Environmental Reviews

Project: FPL Turkey Point Units 6&7

Based on WBI, WQI, WRAP, HGM and 4th Priority Project List (PPL) with technical advise from
EPA, FDEP, ACOE, NMFS, USF & W, SFWMD & Dade County (W.A.T.E.R. created by: Bill L. Maus)

Parameter/ Function	Scoring Criteria	Ratings	Polygon		Polygon		Polygon		Polygon		Polygon	
			Sawgrass Marsh/Dwarf Mangrove - Pre	Sawgrass Marsh/Dwarf Mangrove - Impact	Exotic Wetland Hardwoods - Pre	Exotic Wetland Hardwoods - Impact	Canals/Ditches - Pre	Canals/Ditches - Impact	Mixed Wetland Hardwoods - Pre	Mixed Wetland Hardwoods - Impact		
Apply to freshwater systems within 5 miles of the coast	>5 parts per thousand (ppt)	0										
a-1. Alternate to a.	6 to 8 parts per thousand (ppt)	3										
Optimum salinity for brackish systems during growing	9 to 13 parts per thousand (ppt)	2										
season based on mean high salinity for a normal year.	14 to 16 parts per thousand (ppt)	1										
Apply to brackish (tidal) systems only	>16 parts per thousand (ppt)	0										
a-2. Alternate to a.	17 to 19 parts per thousand (ppt)	3										
Optimum salinity for saline systems during growing	20 to 22 parts per thousand (ppt)	2										
season based on mean high salinity for a normal year.	23 to 25 parts per thousand (ppt)	1										
Apply to saline marsh (tidal) systems only	>25 parts per thousand (ppt)	0										
a-3. Alternate to a.	26 to 41 parts per thousand (ppt)	3										
Optimum salinity for hypersaline systems during growing	42 to 46 parts per thousand (ppt)	2										
season based on mean high salinity for a normal year.	47 to 51 parts per thousand (ppt)	1										
Apply to hypersaline (tidal) systems only	>51 parts per thousand (ppt)	0										
a-4 Alternate to a.	bottom (lower) third between 12 to 25 ppt	3										
Optimum salinity for riverine/tidal creek system during	middle third between 5 to 11 ppt.											
growing season based on mean high slainity for a normal	upper (top) third betweem 0 to 4 ppt.											
year.	bottom (lower) third between 25 to 32 ppt	2										
Apply to riverine systems only	middle third between 6 to 24 ppt.											
	upper (top) third betweem 0 to 5 ppt.											
	bottom (lower) third between 30 to 40 ppt	1										
	middle third between 8 to 29 ppt.											
	upper (top) third betweem 0 to 7 ppt.											
	bottom (lower) third between 35 to 50 ppt	0										
	middle third between 10 to 34 ppt.											
	upper (top) third betweem 0 to 9 ppt.											
	Cumulative Score (SC)		43.5	0.0	26.0	0.0	32.0	0.0	45.5	0.0		
	Maximum Possible Score (MPS)		54.00	54.00	54.00	54.00	54.00	54.00	55.00	54.00		
	W.A.T.E.R. = Cumulative Score/Maximum Possible Score		**0.81**	**0.00**	**0.48**	**0.00**	**0.59**	**0.00**	**0.83**	**0.00**		

W.A.T.E.R. created by: Bill L. Maus
11/1/1995

MITIGATION SITES

FPL Everglades Mitigation Bank

Mitigation Bank Site Suitability Evaluation (MBSE) Matrix

Parameters

(Site Suitability created by: Donaldson Hearing)

Sea Dade Crocodile Sanctuary

Parameter	Scoring Criteria	Ratings	Score
1. Adjacent to lands or waters of regional Importance and results in identifiable ecological benefits to adjacent lands or waters.	State Park, OFW, AP, and including but not limited to Special Waters on at least 1 boundary	1	
	Adjacent lands contain no special designation or undesignated special value	0	1
2. Property is within boundary of an acknowledged state, local or regional acquisition program	Property is within boundary of an acquisition program	1	
	Property is not within boundary of an acquisition program	0	1
3. Property contains ecological or geological features consistently considered by regional Scientist, or federal and state agencies to be unusual, unique or rare in the region and is of sufficient size	Property qualifies	1	
	Property does not qualify	0	1
4. Property designated as being of critical state or federal concern and/or contains special designations,	Property contains at least 1 special designation.	1	1
	Property contains no special designations.	0	
5. Property important to acknowledged restoration efforts	Property is important.	1	1
	Property is not important.	0	
6. Ownership and control of the property.	Property is privately owned.	1	1
	Property is publicly owned.	0	
7. Threatened , Endangered & Species of Special Concern Presence of animal species (faunal) found on site	Documented Presence of Species on site	1	1
	No documented Presence of species on site.	0	
8. Threatened , Endangered & Listed Species Presence of plant species (floral) found on site	Documented Presence of Species on site	1	1
	No documented Presence of species on site.	0	
9. Threat of loss or destruction from development activities. *(Development Pressure)*	High probability of development.	1	
	Low probability of development.	0	0
10. Extent to which lands are subject to Local, State, and Federal dredge and fill/ ERP Regulations	Property is regulated.	1	0
	Property is not regulated.	0	
	Value Cumulative Score (CS)		**8**

The Mitigation Bank Site Suitability Evaluation Matrix is designed to provide a quantifiable means of determining the number of mitigation credits that should be assigned to a bank for **"value"** related parameters. Value related parameters are human values determined to be important to society; and therefore are not measurable in a purely functional analysis. Functional analysis will only measure the degree of functional ecological improvement (degree of ecological improvement) resulting from mitigation activities. The SS Evaluation measures and provides credit for societal values that separate one mitigation bank from another as required by Ch. 62-342 .470 (a) (b) (e) (f) (g) (h) (i) F.A.C.. The SS evaluation is not to be utilized in conjunction with a functional analysis methodology which also utilizes value related parameters in its analysis.

Evaluation Scale

Site	Suitability
1.0	1.10
.9	1.09
.8	1.08
.7	1.07
.6	1.06
.5	1.05
.4	1.04
.3	1.03
.2	1.02
.1	1.01
0	0

Site Suitability Matrix		
Maximum Possible Score (MPS)		10
Cumulative Score (CS)		**8**
		0.8

EPA, USACOE, USF & W, FDEP, NMFS, SFWMD, Dade DERM, FPL, CH

3-Apr-96

After Calculating the Site Suitability Score determine the Site Suitability Multiplier by utilizing the Evaluation Scale to the left. The Site Suitability Multiplier is to be multiplied times the number of the Functional Mitigation Credits, resulting from the **(W.A.T.E.R.)** Functional Assessment of the Mitigation Bank, to determine the number of Site Suitability Credits to be assigned to the Mitigation Bank.

Mitigation Bank Wetland Function -- Evaluation Matrix

Sea Dade Canal Crocodile Sanctuary

Scoring conducted by: Karl Bullock

W.A.T.E.R. - Wetland Assessment Technique for Environmental Reviews

Project: FPL Turkey Point Units 6&7

Based on WBI, WQI, WRAP, HGM and 4th Priority Project List (PPL) with technical advise from
EPA, FDEP, ACOE, NMFS, USF & W, SFWMD & Dade County (W.A.T.E.R. created by: Bill L. Maus)

Parameter/ Function	Scoring Criteria	Ratings	Polygon		Polygon		Polygon		Polygon	
			Disturbed Open Land (FLUCFCS 744) pre	Disturbed Open Land (FLUCFCS 744) post	Mixed Wetland Hardwoods (FLUCFCS 617) pre	Mixed Wetland Hardwoods (FLUCFCS 617) post	Sawgrass/Dwarf Mangrove (FLUCFCS 6411/612-B) pre	Sawgrass/Dwarf Mangrove (FLUCFCS 6411/612-B) post	Borrow Pond (FLUCFCS 534) pre	Borrow Pond (FLUCFCS 534) post
1. Fish & Wildlife Functions *Apply to freshwater, saltwater, brackish and mitigation systems*										
	7 or more species commonly observed	3								
a. Waterfowl, wading birds, wetland dependent, or aquatic	3-6 species commonly observed	2	0	2.5	2	2	2	2.5	1.5	2.5
birds of prey.	1-2 species commonly observed	1								
(Mit. Bank - High species count w/ low pop. #'s score 1	0 species commonly observed	0								
	7 or more species commonly observed	3								
b. Fish	3-6 species commonly observed	2	0	2	2	2	2	2	1.5	2
(Mit. Bank - High species count w/ low pop. #'s score 1	1-2 species commonly observed	1								
Restoration that causes 12% pop. Increases-higher score)	0 species commonly observed	0								
	Top predator (carnivore) &/or large mammals	3								
c. Mammals	Medium sized mammals , (adult weight > 6 ibs.)	2	0	2	2	2	2	2	2	2
(Mit. Bank - High species count w/ low pop. #'s score 1	Small animals (rodents, etc.) , (adult weight < 6 lbs.)	1								
Restoration that causes 12% pop. Increases-higher score)	0 species present	0								
	7 or more species commonly observed	3								
d. Aquatic macroinvertebrates, amphibians	3-6 species commonly observed	2	0	3	2	2.5	2	2.5	2	3
(Mit. Bank - High species count w/ low pop. #'s score 1	1-2 species commonly observed	1								
Restoration that causes 12% pop. Increases-higher score)	0 species commonly observed	0								
	Large species observed	3								
e. Aquatic reptiles	Aquatic turtles	2	0	3	2	3	2	3	2	3
(Mit. Bank - High species count w/ low pop. #'s score 1	Snakes & lizards	1								
Restoration that causes 12% pop. Increases-higher score)	No evidence of species present	0								

Mitigation Bank Wetland Function -- Evaluation Matrix

Sea Dade Canal Crocodile Sanctuary

Scoring conducted by: Karl Bullock

W.A.T.E.R. - Wetland Assessment Technique for Environmental Reviews

Project: FPL Turkey Point Units 6&7

Based on WBI, WQI, WRAP, HGM and 4th Priority Project List (PPL) with technical advise from
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Parameter/ Function	Scoring Criteria	Ratings	Polygon		Polygon		Polygon		Polygon	
			Disturbed Open Land (FLUCFCS 744) pre	Disturbed Open Land (FLUCFCS 744) post	Mixed Wetland Hardwoods (FLUCFCS 617) pre	Mixed Wetland Hardwoods (FLUCFCS 617) post	Sawgrass/Dwarf Mangrove (FLUCFCS 6411/612-B) pre	Sawgrass/Dwarf Mangrove (FLUCFCS 6411/612-B) post	Borrow Pond (FLUCFCS 534) pre	Borrow Pond (FLUCFCS 534) post
2. Vegetative Functions *Apply to freshwater, saltwater, brackish and mitigation systems*										
a. Overstory/shrub canopy	Desirable trees/shrub healthy & providing appropriate habitat (seedlings present) & no inappropriate species	3	0	2	2.5	2.5	3	3	0	2
	Desirable trees/shrubs exhibit signs of stress (no seedlings) few inappropriate species present	2								
	Inappropriate trees/shrubs shading or overcoming desirable tree/shrubs	1								
	Very little or no desirable tree/shrubs present (evidence suggests there should be)	0								
b. Vegetative ground cover	Assessment area exhibits <2% inappropriate herbaceous ground cover for specific wetland systems and groundcover is present	3	0	2	2.5	2.5	3	3	0	2
	Assessment area contains >2% but <30% inappropriate herbaceous groundcover, or lack of groundcover >2% but < 30%	2								
	Assessment area contains >30% to <70% inappropriate herbaceous groundcover, or lack of ground cover >30% to <70%	1								
	Assessment area >70% inappropriate herbaceous groundcover or lack of groundcover >70%	0								
c. Periphyton mat coverage	Periphyton (Blue-green algae) present with average mat thickness >1 1/4 in. (measure active & dead layer)	3	0	2	2	2	2.5	2.5	2	2
	Periphyton (Blue-green algae) present with average mat thickness between 3/4 in. to 1 1/4 in. (active & dead layer)	2								
	Periphyton (Blue-green algae) present with average mat thickness between 1/4 in. to 3/4 in. (active & dead layer)	1								
	Periphyton (Blue-green algae) not present or if pressent with average thickness of 0.0 to 1/4 in. (active & dead layer)	0								
d. Category 1 and Category 2 exotic plants or (non-native) species	< (or = to) 1 % exotic plant cover	3	2	2.5	2	2.5	2	2.5	2	2.5
	>1 % to 10 % exotic plant cover	2								
	>10 % to 65 % exotic plant cover	1								
	> 65 % exotic plant cover	0								
e. Habitat diversity (vegetative) *(within assessment area)*	>3 native species communities on site within assesssment area	3	2	3	2	3	2	3	2	3
	2 or 3 native species communities on site within assessment area	2								
	1 native species community with 75 % to 90 % coverage within assessment area	1								
	1 native species community has > 90 % coverage within assessment area	0								
f. Biological diversity within 3000 feet *(approximately 1/2 mile from edge of assessment area)*	> 3 alternative habitats available (including upland)	3	3	3	3	3	3	3	3	3
	2 to 3 alternative habitats	2								
	1 alternative habitat	1								
	Same habitat type, or inappropriate / impacted	0								

Mitigation Bank Wetland Function -- Evaluation Matrix

Sea Dade Canal Crocodile Sanctuary

Scoring conducted by: Karl Bullock

W.A.T.E.R. - Wetland Assessment Technique for Environmental Reviews

Project: FPL Turkey Point Units 6&7

Based on WBI, WQI, WRAP, HGM and 4th Priority Project List (PPL) with technical advise from
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Parameter/ Function	Scoring Criteria	Ratings	Polygon		Polygon		Polygon		Polygon	
			Disturbed Open Land (FLUCFCS 744) pre	Disturbed Open Land (FLUCFCS 744) post	Mixed Wetland Hardwoods (FLUCFCS 617) pre	Mixed Wetland Hardwoods (FLUCFCS 617) post	Sawgrass/Dwarf Mangrove (FLUCFCS 6411/612-B) pre	Sawgrass/Dwarf Mangrove (FLUCFCS 6411/612-B) post	Borrow Pond (FLUCFCS 534) pre	Borrow Pond (FLUCFCS 534) post
3. Hydrologic Functions										
a. Surface water hydrology / sheet flow *Apply to freshwater, saltwater, brackish and mitigation systems*	Major connection *(Flowing water/ river or floodplain/ uniform flow through natural systems)*	3	0	2.5	2	2.5	2	2.5	1	2.5
	Moderate connection *(Natural restriction of flow or Flowing water due to hydrologic engineering)*	2								
	Minor connection *(Runoff collection point, or uneven flow due to berms, ditches, roadways etc.)*	1								
	Hydrologically isolated, no net lateral movement	0								
b. Hydroperiod (normal year) fresh systems	> 8 months inundated with no reversals & every year drydown	3								
	>5 months < 8 months or >5 years continuous inundation (look for strong water stains on persistent vegetation)	2								
	>1 month < 5 months, with possible reversals (look for soft or less distinct water stains on persistent vegetation)	1								
	< 4 weeks cumulative annual inundation or < 2 weeks continuous inundation	0								
b-1 Alternate to b. for Short Hydroperiod (normal year) fresh systems:	>10 weeks of continuous inundation including soil saturation	3								
	> 6 weeks but <10 weeks of continuous inundation including soil saturation	2								
	>2 weeks but <6 weeks of inudation, including soil saturation	1								
	<2 weeks of continuos inundation	0								
b-2 Alternate to b. for Saltwater, brackish (tidal) systems	Inundated by >90% high tides	3	0	2	2	2	2	2	1	2
	Inundated by "spring" high tides (bi-monthly)	2								
	Inundated by "extreme high" tides only (biannually)	1								
	Inundated by storm surges only	0								
b-3 Alternate to b. for High Marsh (Juncus-Distichlis)	Inundated by high "spring" tides (monthly) and flushed by fresh water sheetflow every 10 days average	3								
	Inundated by high "spring" tides (monthly) and flushed by fresh water sheetflow every 30 days on the average	2								
	Inundated by high "spring" tides (monthly)and exposed to rain only	1								
	Inundated by >50% high tides and exposed to rain only	0								
b-4 Alternate to b. for Riverine systems	Inundated by high tides (daily) and/or recieves and maintains fresh water at least into first half of dry season	3								
	Inundated by high tides (daily) and/or recieves and maintains fresh water during rainy season only	2								
	Inundated by high tides (daily) and/or recieves fresh water but does not maintain (reversal) during rainy season	1								
	Inundated by spring tides (bi-monthly) and/or experiences frequent reversals of fresh water (flashy)	0								

Mitigation Bank Wetland Function -- Evaluation Matrix

Sea Dade Canal Crocodile Sanctuary

Scoring conducted by: Karl Bullock

W.A.T.E.R. - Wetland Assessment Technique for Environmental Reviews

Project: FPL Turkey Point Units 6&7

Based on WBI, WQI, WRAP, HGM and 4th Priority Project List (PPL) with technical advise from
EPA, FDEP, ACOE, NMFS, USF & W, SFWMD & Dade County (W.A.T.E.R. created by: Bill L. Maus)

Parameter/ Function	Scoring Criteria	Ratings	Polygon		Polygon		Polygon		Polygon	
			Disturbed Open Land (FLUCFCS 744) pre	Disturbed Open Land (FLUCFCS 744) post	Mixed Wetland Hardwoods (FLUCFCS 617) pre	Mixed Wetland Hardwoods (FLUCFCS 617) post	Sawgrass/Dwarf Mangrove (FLUCFCS 6411/612-B) pre	Sawgrass/Dwarf Mangrove (FLUCFCS 6411/612-B) post	Borrow Pond (FLUCFCS 534) pre	Borrow Pond (FLUCFCS 534) post
3. Hydrologic Functions continued										
c. Hydropattern (fresh system)	>1 ft. water depth for at least 2.5 months and <6 in. for >1 month (measure water mark/ lichen line), or water depth ideal for specific wetland system.	3								
	>6 in to 1 ft. for at least 2.5 months (measure water mark/ lichen line) or water depth borderline over or under for specific wetland system	2								
	<6 in. for at least 2.5 months (measure water mark/ lichen line) or water depth incorrect for specific wetland system	1								
	<6 in. in association with either canals, ditches, swales, culverts, pumps, and/or wellfields, or these factors cause water depth to be too deep for specific system.	0								
c-1 Alternate to c. for Saltwater, brackish (tidal) systems	>1 ft. water depth <2 ft. on 90% high tides	3	0	2	2	2	2	2	1	2
	> 6 in. water depth <1 ft. on >50% high tides	2								
	< 6 in. water depth , but > than saturated	1								
	Saturated by saline water table only	0								
c-2 Alternate to c. for High Marsh (Juncus-Distichlis)	>10 in. water depth <2 ft. on regular basis during growing season	3								
	>5 in. to 10in. water depth on regular basis during growing season	2								
	>1 in. to 5 in. water depth on regular basis during growing season	1								
	>0.0 in. to 1 in. water depth sporadically during growing season	0								
c-3 Alternate to c. for Riverine systems	>2 ft. water depth (main channel) <6 ft. for 8 months	3								
	>2 ft. water depth (main channel) <4 ft. for 6 months	2								
	>1 ft. water depth (main channel) <2.5 ft. for 4 months	1								
	<1 ft. water depth, but dry for >4 weeks (dry season)	0								

Mitigation Bank Wetland Function -- Evaluation Matrix

Sea Dade Canal Crocodile Sanctuary

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3. Hydrologic Functions continued										
d. Water Quality	No indication of poor water quality (lab testing required, all values within acceptable range)	3	0	2	2	2	2	2	2	2
	No visual indicators of poor water quality observed (1 value just over or under acceptable range)	2								
	Visual indicators of poor water quality questionable (2 values over or under acceptable range)	1								
	Visual indicators of poor water quailty observed or lab verified (values are out of acceptable range)	0								
e. Intactness of historic topography (soil disturbance)	Unaltered	3	0	2	1.5	2	2.5	2.5	0	2
	Slightly altered soil disturbance, < 10% of assessment area	2								
	Moderately altered soil disturbance, < 25% of assessment area	1								
	Extremely altered soil disturbance, may exceed 50% of assessment area	0								
f. Soils, organic (fresh systems)	Organic soil classified hydric soil >12 in. or any thickness over bedrock/caprock with perched water table and either condition covering >90% of surface area	3								
	Organic soil classified hydric soil >6 in. but <12 in. and covering >90% of surface area	2								
	Organic soil classified hydric soil >1 in. but <6 in. and covering >50% but <90% of surface area	1								
	Organic soil classified non-hydric soil <1 in. for >50% of surface area	0								
f-1 Alternate to f. for *Freshwater, saltwater systems*	Sandy soil classified hydric soil with distinct mottling and concretions present in greater than 40% of horizon.	3								
	Sandy soil classified hydric soil with mottling and concretions present in > 20% but < 40% of horizon.	2								
	Sandy soil classified hydric soil with light or sparse mottling and concretions < 2 mm diameter or < 20% of horizon.	1								
	Sandy soil exhibits strong evidence of disturbance or mechanical manipulations or is fill material.	0								
f-2 Alternate to f. for *Freshwater, saltwater, brackish (tidal) systems*	Calcareous loam >12 in. and >90 % of surface area	3	0	2	2	2	2.5	2.5	1.5	2
	Calcareous loam >6 in. to <12 in. and >90% of surface area	2								
	Calcareous loam >1 in. to <6 in. and covering >50% but <90% of surface area	1								
	Calcareous loam <1 in. for >50% of surface area	0								

Mitigation Bank Wetland Function -- Evaluation Matrix

Sea Dade Canal Crocodile Sanctuary

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W.A.T.E.R. - Wetland Assessment Technique for Environmental Reviews

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Based on WBI, WQI, WRAP, HGM and 4th Priority Project List (PPL) with technical advise from
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4. Salinity Parameters *Apply to freshwater, saltwater, brackish, hypersaline and mitigation systems -* ***Choose 1***										
a. Optimum salinity for fresh systems during growing season based on mean high salinity for a normal year. *Apply to freshwater systems within 5 miles of the coast*	<2 parts per thousand (ppt)	3								
	2 to 3 parts per thousand (ppt)	2								
	4 to 5 parts per thousand (ppt)	1								
	>5 parts per thousand (ppt)	0								
a-1. Alternate to a. Optimum salinity for brackish systems during growing season based on mean high salinity for a normal year. *Apply to brackish (tidal) systems only*	6 to 8 parts per thousand (ppt)	3								
	9 to 13 parts per thousand (ppt)	2								
	14 to 16 parts per thousand (ppt)	1	0	2	2	2	2	2	2	2
	>16 parts per thousand (ppt)	0								
a-2. Alternate to a. Optimum salinity for saline systems during growing season based on mean high salinity for a normal year. *Apply to saline marsh (tidal) systems only*	17 to 19 parts per thousand (ppt)	3								
	20 to 22 parts per thousand (ppt)	2								
	23 to 25 parts per thousand (ppt)	1								
	>25 parts per thousand (ppt)	0								
a-3. Alternate to a. Optimum salinity for hypersaline systems during growing season based on mean high salinity for a normal year. *Apply to hypersaline (tidal) systems only*	26 to 41 parts per thousand (ppt)	3								
	42 to 46 parts per thousand (ppt)	2								
	47 to 51 parts per thousand (ppt)	1								
	>51 parts per thousand (ppt)	0								
a-4 Alternate to a. Optimum salinity for riverine/tidal creek system during growing season based on mean high slainity for a normal year. *Apply to riverine systems only*	bottom (lower) third between 12 to 25 ppt middle third between 5 to 11 ppt. upper (top) third betweem 0 to 4 ppt.	3								
	bottom (lower) third between 25 to 32 ppt middle third between 6 to 24 ppt. upper (top) third betweem 0 to 5 ppt.	2								
	bottom (lower) third between 30 to 40 ppt middle third between 8 to 29 ppt. upper (top) third betweem 0 to 7 ppt.	1								
	bottom (lower) third between 35 to 50 ppt middle third between 10 to 34 ppt. upper (top) third betweem 0 to 9 ppt.	0								
	Cumulative Score (SC)		7.0	41.5	37.5	41.5	40.5	44.5	26.5	41.5
	Maximum Possible Score (MPS)		54.00	54.00	54.00	54.00	54.00	54.00	54.00	54.00
	W.A.T.E.R. = Cumulative Score/Maximum Possible Score		**0.13**	**0.77**	**0.69**	**0.77**	**0.75**	**0.82**	**0.49**	**0.77**

W.A.T.E.R. created by: Bill L. Maus

11/1/1995

APPENDIX C

MITIGATION AREA PHOTOGRAPHS

Photograph 1. Aerial view of Northwest Restoration Site, facing north. Sawgrass marsh historically impacted by network of mosquito ditches dominated by exotic Australian pine. Transmission corridor, L-31E Canal, and Biscayne Bay visible to east. Areas of exotic vegetation control on SFWMD parcels visible to the north, adjacent to C-103 Canal.

Photograph 2. Aerial view of Northwest Restoration Site, facing east. L-31E Canal and Biscayne Bay in background.

Photograph 3. Northwest Restoration Site – sawgrass marsh, mangroves, and Australian pine.

Photograph 4. Northwest Restoration Site – sparsely vegetated open water area supporting thick periphyton mat. Red mangrove in foreground, Australian pine in background.

Photograph 5. Aerial view of SW 320th Street Restoration Site, facing west. 219 acre marsh restoration area and adjacent exotic wetland hardwoods dominated by Australian pine and Brazilian pepper.

Photograph 6. Aerial view of SW 320th Street Restoration Site, facing north. Exotic wetland hardwoods to north and south of C-103 Canal. Areas of exotic vegetation control on SFWMD owned parcels visible to the northeast.

Photograph 7. SW 320th Street Restoration Site – former palm tree nursery restored to freshwater marsh. Knotted spikerush (*Eleocharis interstincta*) and bushy broomsedge (*Andropogon glomeratus*) in foreground; exotic wetland hardwoods in background.

Photograph 8. SW 320th Street Restoration Site – sparsely vegetated mudflats within freshwater marsh restoration area.

Photograph 9. SW 320th Street Restoration Site – wading bird utilization of freshwater marsh restoration area.

Photograph 10. SW 320th Street Restoration Site – mixed wetland hardwoods/exotic wetland hardwoods on eastern edge of Site adjacent to C-103 Canal, facing north. SFWMD parcel with treated Australian pine to east, untreated Australian pine to west.

Photograph 11. Aerial photograph of Everglades Mitigation Bank crocodile sanctuary area prior to enhancement. Area dominated by the exotic species Australian pine. Industrial wastewater treatment facility in background.

Photograph 12. Aerial view of Everglades Mitigation Bank crocodile sanctuary area following creation of crocodile habitat. Exotic species of vegetation replaced with natives, freshwater ponds excavated and perimeter of peat/marl/sand nesting substrate installed.