APPENDIX A
FEDERAL MITIGATION BANK INSTRUMENT
FDEP MITIGATION BANK PERMIT

BREAKFAST POINT MITIGATION BANK

As part of the development of the U.S. Army Corps of Engineers' Regional General Permit SAJ-86 (SAJ-2004-1861)(RGP) and Florida Department of Environmental Protection's Ecosystem Management Agreement (EMA), the St. Joe Company elected to establish two mitigation banks to serve different basins within the RGP/EMA area. Both Federal and State agencies participated in the review of both the RGP/EMA and the mitigation banks as a Mitigation Bank Review Team (MBRT). The Breakfast Point Mitigation Bank (BPMB) will serve the Breakfast Point basin within the RGP/EMA. Authorizations for mitigation banks follow slightly different procedures and formats for the respective state and federal approvals. However, the actual activities, conditions and expected results are substantively the same. Therefore, this document will serve as both the federal Mitigation Bank Instrument (MBI) (SAJ-2004-1865) and the state Mitigation Bank Permit (0227473-001)(the "Permit"). The format of this document basically follows the federal MBI with some modifications to accommodate separate procedures. The state permit authorizes the mitigation bank implementation and operation, as well as, the dredge and fill activities associated with it. However, the federal MBI requires an additional authorization for the actual dredge and fill activities associated with the bank, which will be in the form of a Nationwide Permit 27. Therefore, there are portions of the document specific to the state or federal authorization. These items will be specifically identified by a preface of either U.S. Army Corps of Engineers (Corps) or Florida Department of Environmental Protection (FDEP).

Corps: This MBI regarding the establishment, use, operation, and maintenance of BPMB is made and entered into by and among The St. Joe Company (hereinafter, Sponsor), the Corps, the U.S. Environmental Protection Agency (EPA), the U.S. Fish and Wildlife Service (FWS), and National Marine Fisheries Service (NMFS). These agencies along with FDEP participated as the MBRT.

FDEP: This Permit is issued under the authority of Part IV of Chapter 373, Florida Statutes (F.S.) and Chapter 62-342, Florida Administrative Code (F.A.C.). It constitutes all necessary permits under Part IV of Chapter 373, Florida Statutes (F.S.). It also constitutes certification of compliance with state water quality standards pursuant to Section 401 of the Clean Water Act, 33 U.S.C. 1341. Where applicable (such as activities in coastal counties), issuance of the wetland resource permit also constitutes a finding of consistency with Florida's Coastal Zone Management Program, as required by Section 307 of the Coastal Management Act.

I. PREAMBLE

A. Purpose: The purpose of this MBI/Permit is to establish guidelines and responsibilities for the establishment, use, operation, and maintenance of the BPMB. The BPMB will be used for compensatory mitigation for unavoidable impacts to waters of the State and United States, including wetlands, which result from activities authorized under the RGP and/or EMA to compensate for the loss of wetland functions within the Breakfast Point basin.

B. Location and Ownership of Parcel: The St. Joe Company (Sponsor) owns 5,031 acres of land in Sections 1,11-15, 23-26, Township 3S, Range 16W and Sections 6-9, 16-21, 28, Township 3S, Range 15W in Bay County (FDEP Class III waters). The proposed project is located on the Breakfast Point Peninsula, which is north of Panama City Beach and extends northward into West Bay (Exhibit A-1-1). The proposed project site is surrounded by about 2,250 acres of conservation lands, which are along the West Bay shoreline.

C. Project Description: The Sponsor shall preserve, enhance and maintain the bank site by the removal of inappropriate vegetation and discontinuation of timber operations, the improvement of hydrology through ditch blocks and low-water crossing and culvert installation, and by the implementation of an interim and long-term restoration management plan including prescribed burns. The sponsor shall conduct these mitigation activities in accordance with the provisions of this MBI/Permit and its Attachments. The entire Bank consists of a total of 5,031 acres, but may be implemented in four discrete phases. The compensatory mitigation plan is expected to result in the restoration or enhancement of a mosaic of hydric and mesic pine flatwoods, cypress flats, mixed forested wetlands, and palustrine marsh.

D. Baseline Conditions: Historically, this site was a mosaic of predominately hydric pine and cypress flatwoods and prairie-marsh associations with a central, deep drainage area of predominantly mixed hardwood wetlands (Exhibit A-1-8). During the 1960s and 1970s, much of the proposed mitigation bank was planted in slash pine for silviculture. Approximately 87% of the site is currently planted in pine of various ages (~ 3 - 25 years)(Exhibit A-1-2). Most of the site was bedded during planting, and bed and furrow depths are typically 3 to 8 inches deep. In wetter areas, such as in cypress flats/swamps and palustrine marshes, many of the slash pines have died. Some of the older plantings have recently been thinned every third row. Some of the types of communities found on the site vary based on slight differences in topography. Where wetlands have been furrowed, distinctly different plant communities usually exist on the tops of the beds vs. in the furrows. The understory/ground cover varies from open herbaceous to very dense thickets of mesic or hydric shrubs. Due to fire suppression, shrub percent cover is much higher than would naturally occur in the historical natural communities. There has been no infrastructure constructed on the site other than logging roads and ditches to support silviculture.

In addition to the planted pine, other communities include hydric and mesic pine flatwoods, cypress flats, mixed forested wetland, wet prairie, and freshwater marsh (Table A-1 and Exhibit A-1-5). This exhibit also shows communities within the surrounding conservation area that are not included in the acreage calculations for the mitigation bank. The planted pines occur primarily in historical hydric and mesic pine flatwoods, cypress flats, wet prairie, and freshwater marsh. Habitats on the property vary in quality from excellent to poor depending on the effects of management for pine silviculture. The degree of infestation by exotic and nuisance plant species is minimal; Chinese tallow (*Sapium sebiferum*) and cattail (*Typha latifolia*) were observed in several on-site wetlands and in roadside drainage ditches.

In general, the current and historical communities at the bank site are typical of those in the RGP/EMA area. They are described in greater detail in Attachment A-1.

Table A-1. Breakfast Point Mitigation Bank Existing Land Use

FLUCFCS Code	FLUCFCS Description	Total Available Acres	Percent of Pre-Restoration Wetlands	Percent of Pre-Restoration Site
411	Mesic Pine Flatwoods	321.4	0.0	6.3
441H	Hydric Pine Plantation	3,396.5	86.8	67.5
441M	Mesic Pine Plantation	713.6	0.0	14.1
621	Cypress Swamp	207.4	5.4	4.2
630	Mixed Forested Wetland	102.4	2.7	2.0
641	Freshwater Marsh	166.7	4.3	3.4
643	Wet Prairie	32.9	0.8	0.7
814	Roads	90.5	0.0	1.8
Total	**TOTAL**	5,031.4	100.0	100.0

E. Establishment and Use of Credits: In accordance with the provisions of this MBI/Permit and upon satisfaction of the success criteria contained herein, a total of 998.03 freshwater credits will be available to be used as compensatory mitigation in accordance with all applicable requirements. Credits are in the form of functional units pursuant to the Wetland Rapid Assessment Procedure (WRAP), as described in *Technical Publication REG-001 Wetland Rapid Assessment Procedure (WRAP)(Miller and Gunsalus, September, 1997*), and as applied during the assessment of the wetlands within both the bank and RGP/EMA area. The credit assessment is described in detail in Attachment A-4.

F. The bank is for general use within the Breakfast Point permitting basin portion of the area covered by the RGP. The St. Joe Company is the sponsor of the BPMB.

G. The Mitigation Banking Review Team (MBRT) consists of:

1. U.S. Army Corps of Engineers, Jacksonville District (Corps), Chair.
2. U.S. Environmental Protection Agency, Region IV (EPA).
3. U.S. Fish and Wildlife Service, Panama City Field Office (FWS).
4. Florida Department of Environmental Protection, Pensacola and Tallahassee (FDEP), Co-chair

The bank sponsor has demonstrated through review by the MBRT that the BPMB meets both federal and state criteria for establishment of a mitigation bank.

H. Corps: Disclaimer: This MBI does not in any manner affect statutory authorities and responsibilities of the signatory parties.

I. Exhibits: The following exhibits are incorporated as attachments to this MBI/Permit:

Attachment A-1 Compensatory Mitigation Plan

- Exhibit A-1-1 Location and Service Area Map
- Exhibit A-1-2 2004 True Color Aerial Photograph Map
- Exhibit A-1-3 Quad Topography Map
- Exhibit A-1-4 Soils Map
- Exhibit A-1-5 Existing Land Use and Land Cover

Exhibit A-1-6	Proposed Land Use and Land Cover
Exhibit A-1-7	Phases, Hydrologic and Vegetative Monitoring Locations
Exhibit A-1-8	Historic Aerial Photo, 1953
Exhibit A-1-9	Turbidity Details
Exhibit A-1-10	Existing Land Use and Land Cover (11x17 color)
Exhibit A-1-11	Proposed Land Use and Land Cover (11x17 color)
Attachment A-2	Fire Management Plan
Attachment A-3	Security Plan
Attachment A-4	WRAP Analysis
Attachment A-5	Site Suitability Index
Attachment A-6	Ledger
Attachment A-7	Desirable Species Lists
Attachment A-8	Monitoring Plan
Attachment A-9	Hydrologic Restoration Plan
Attachment A-10	References
Attachment A-11	Real-Estate Provisions
Attachment A-12	Financial Assurance
Attachment A-13	Hunt Lease Conditions
Attachment A-14	Cost Estimate
Attachment A-15	Principles for Forest and Wildlife Management

II. AUTHORITIES

The establishment, use, operation and maintenance of the Bank is carried out in accordance with the following authorities:

A. Corps (Federal):
   1. Clean Water Act (33 USC 1251 et seq.)
   2. Rivers and Harbors Act (33 USC 403)
   3. Fish and Wildlife Coordination Act (16 USC 661 et seq.)
   4. Regulatory Programs of the Corps of Engineers, Final Rule (33 CFR Parts 320-330)
   5. Guidelines for Specification of Disposal Sites for Dredged and Fill Material (40 CFR Part 230)
   6. Memorandum of Agreement between the Environmental Protection Agency and FDEP concerning the Determination of Mitigation Under the Clean Water Act, Section 404 (b)(1) Guidelines (February 6, 1990)
   7. Federal Guidance for the Establishment, Use, Operation of Mitigation Banks (60 F.R. 58605 et seq.)

B. FDEP (State):
   1. Part IV of Chapter 373, Florida Statutes (F.S.)
   2. Chapter 62-342, Florida Administrative Code (F.A.C.)
   3. Section 401 of the Clean Water Act, 33 U.S.C. 1341
   4. Section 307 of the Coastal Management Act

These parties agree to the following:

III. ESTABLISHMENT OF THE BANK

A. The Sponsor agrees to perform all necessary work, in accordance with the provisions of this MBI/Permit and its Attachments, until it is demonstrated to the satisfaction of the authorizing agencies that the project meets the success criteria contained herein, and to maintain these conditions in perpetuity according to Part V Section G.

B. The Sponsor will obtain all appropriate environmental documentation, permits or other authorizations needed to establish and maintain the Bank. This MBI/Permit may not fulfill or substitute for all required authorizations.

C. Establishment of the Bank will be performed in four phases as described in the Compensatory Mitigation Plan (Attachment A-1), and the credits will become available in accordance with the schedule specified in Part IV, Section F of this MBI/Permit. In the event the Sponsor determines that modifications must be made in the MBI/Permit or the Compensatory Mitigation Plan to ensure successful establishment of habitat within the Bank, the Sponsor shall submit a written request for such modification to the MBRT for approval.

FDEP: For the state, this request shall be in the form of a major or minor modification with appropriate fee to be submitted to the FDEP Office of Submerged Lands and Environmental Resources in Tallahassee. The request will be reviewed in accordance to the procedures and timetables established in Ch. 120, F.S.

D. Financial Assurance Requirements.

1. Implementation Phase: The Sponsor shall provide FDEP with the financial responsibility mechanisms for the bank or phase thereof as required by Rule 62-342.700 F.A.C. The Sponsor shall secure financial assurance for construction activities, monitoring, maintenance and reporting prior to success, and for long-term management activities after the bank has reached success.

The Sponsor shall establish FDEP-approved financial assurance for the construction and implementation of each phase at least 30 days prior to initiation of construction or release of credits for that phase. This assurance shall be in the form of performance bonds payable into a contemporaneously established Standby Trust Account (Attachment A-12). The amount of the performance bonds is based on 110% the estimated costs for construction, monitoring and maintenance prior to success, as shown in the table below by phases. The Sponsor may request a partial reduction in the amount of the construction assurance after the successful completion of implementation activities and a revised cost estimate. The Sponsor may request a release from its construction financial assurance obligation upon the determination that the bank has reached success criteria and the long-term management has been properly funded.

Financial Assurance Costs per Phase		
Phase	**Implementation Cost Estimate**	**110% of Estimate**
1	$449,116	$494,028
2	$711,404	$782,544
3	$226,451	$249,096
4	$102,609	$112,870
Total	$1,489,580	$1,638,538

2. Perpetual Management Phase: Thirty days prior to the debit of mitigation credits, the bank sponsor shall establish a Standby Trust Fund Agreement (Attachment A-12) for the bank or phase thereof to be funded by either a bond, letter of credit or cash for each phase, in the amount of $305.80 per acre, that is in the form of FDEP's approved forms for such mechanisms to implement the terms of the perpetual management plan for the bank.

3. Adjustments. The Sponsor shall be the responsible party for long-term management until the permit and the fully funded long-term management trust are transferred to a different long-term manager. The Sponsor shall provide FDEP with proof of permit and trust compliance prior to this transfer.

All cost-estimates shall be reviewed and appropriate financial responsibility instruments adjusted every two years in accordance with Rule 62-342.700 (11) F.A.C. In addition, the Sponsor shall conduct another cost estimate during the establishment of final construction plans, accounting for any changes in construction and implementation costs required by other permits or conditions, weather, contractors costs, and other such costs. Any significant change in the cost estimate (>10%) may result in a modification to the required deposits into the financial responsibility instruments.

E. Real Estate Provisions: Prior to any construction activities or release of credits, the Sponsor shall cause the property on which the Breakfast Point Mitigation Bank or phase thereof is to be implemented to be preserved and protected in accordance with a conservation easement granted to FDEP and the Northwest Florida Water Management District, with rights of enforcement to the Corps, as well. A copy of the draft language to be used for this conservation easement has been approved by the MBRT (Attachment A-11). However, prior to recording the Conservation Easement, the sponsor shall submit a final draft of the CE to the FDEP Office of Submerged Lands and Environmental Resources in Tallahassee along with:

1. A title insurance policy for the easement to be updated to the date of conveyance.
2. Subordination, release, or joinder agreements for any lien on the property, as identified by the Title Commitment, unless such lien does not adversely affect the ecological viability of the Bank (Rule 62-342.650 F.A.C.).
3. Legal descriptions and sketches of the conservation easement certified by a Florida registered land surveyor.

After agency approval, the easement shall be recorded and a clerk-of-the-court certified copy of the conservation easement shall be submitted.

F. Harvesting Requirements: The Sponsor agrees to remove planted pine in accordance with the Compensatory Mitigation and Principles for Forest and Wildlife Management (Attachments A-1 and A-16) and consistent with the restoration goals and timing defined in this MBI/Permit and Attachments. While traditional timber equipment may be used and marketable pine may be sold, the primary consideration for methods, species and density harvested, and timing of harvesting activities shall be for a restoration goal. All harvesting activities within a phase shall be completed and documented with harvest records, ground and aerial photographs, and a site visit prior to the release of credits associated with this activity.

G. Fire Management: The Sponsor agrees to implement a fire management plan in accordance with the Compensatory Mitigation and Fire Management Plans (Attachments A-1 and A-2) and consistent with the restoration goals and timing defined in this MBI/Permit and Attachments. At least 80% of the acreage in appropriate communities within a phase shall have

been burned and documented with prescribed burn records, ground and aerial photographs, and a site visit prior to the release of credits associated with this activity.

H. Construction Requirements: The Sponsor shall conduct the construction activities defined in Attachment A-9 and Exhibit A-1-7 to deter drainage from the site and enhance hydrologic connections. The activities planned for the site are installation of hardened low water crossings and equalizer culverts, and modification of existing drainage culverts and ditches (Exhibit A-1-7). The Sponsor shall conduct all construction activities in accordance with best management practices (BMPs) with regard to turbidity (Exhibit A-1-9), including timing these operations for low water conditions. Based on continued field data collection results during the first few years of the project, invert elevations of the structures will be manipulated, in consultation with the authorizing agencies to verify the final elevations for each structure. If these elevations differ from the as-built certification, a minor modification of the permit will be required.

The Sponsor agrees to submit as-built certifications, prepared by an engineer licensed in the State of Florida for each phase of the Bank within 60 days following completion of the construction portion of that phase of bank. The as-built report will describe in detail any deviation from the construction plans and figures (Attachment A-9) and a plan showing finished grades, and surface and groundwater elevations, as appropriate. Approval of the as-built report shall be required prior to the credit release associated with Hydrologic Improvements on the Credit Release Table in Part IV, Section F(1).

I. Schedule: Restoration activities will be performed in phases, which are defined by geographical areas (Exhibit A-1-7) and would be stand-alone projects should the entire bank not be completed. Work begins on Phase 1 in year 1 with selective logging, shrub and brush removal, and initial burning, then installation of the hydrologic improvements and exotic control activities as detailed below. Other phases are anticipated to follow a similar schedule, with each successive phase being initiated on a yearly basis, as presented in the following table. However, the Sponsor, in consultation with the authorizing agencies, may elect to postpone the initiation of a phase. Conversely, the conservation easement and financial assurances may be implemented in advance of other implementation steps. Once initiated, the physical mitigation activities in the phase shall proceed in a timely manner, in accordance with the attached schedule (Attachment A-1).

IV. OPERATION OF THE BANK

A. Mitigation Service Area (MSA): The bank is established to provide compensatory mitigation to compensate for impacts to waters of the State and United States, including wetlands, within the Breakfast Point basin of the geographic area covered by the RGP area. The MSA for the Breakfast Point Mitigation Bank is located within Bay County as shown in Exhibit A-1-1.

B. The Sponsor will allow, or otherwise provide for, access to the site by the MBRT, as necessary, for the purpose of inspection and compliance monitoring consistent with the terms and conditions of this MBI/Permit. Inspecting parties shall provide reasonable notice, of not less than 24 hours, to the Sponsor, prior to inspection of Bank.

C. Projects Eligible to Use the Bank. Projects within the MSA authorized by the RPG and/or the EMA may use credits from this mitigation bank. The Corps and FDEP, in consultation with the other regulatory and resource agencies, will determine, on a case-by-case basis, the eligibility of projects within the MSA that do not qualify for either the RGP or EMA.

D. Assessment Methodology: Credits and debits will be assessed using WRAP.

1. Credits. The total number of potential of credits was determined by the WRAP methodology and the application of a Mitigation Bank Suitability Index (MBSI), and then assessed for time-lag and risk, with methodologies detailed in Attachments A-4 and A-5. A total potential of 998.03 freshwater credits can be allocated to the bank. These credits will be released and withdrawn in accordance with Part IV, Section F.

2. Debits. For purposes of offsetting impacts to low quality wetlands as identified within the RGP and EMA, 0.65 credits per acre of impact must be debited from the bank. For purposes of offsetting impacts to high quality wetlands, 0.92 credits per acre of impact must be debited from the bank. Because the credits from this mitigation bank have been assessed for time lag and risk, these factors shall not be considered for impact permits.

E. Success Criteria: The compensatory mitigation for each phase shall be determined to be successful when all of the performance standards defined below have been met. Upon the determination of success, the phase may be released from the monitoring requirements in Part V, Section B, and the long-term management plan and inspections may be implemented as described in Part V, Section G.

1. Procedures.

a. Whenever the bank sponsor believes the mitigation bank or phase thereof has attained full success, as defined herein, they shall request a determination of success.

   FDEP: For the State, this request shall be in the form of a minor modification with an appropriate fee, which shall be reviewed in accordance with Ch 120 FS.

   Corps: The notice shall be sent by certified mail to the Corps, Panama City and Jacksonville offices.

b. The request for success determination shall be supported by documentation provided by the bank sponsor that the implementation of the project has been in accordance with the plans herein. The bank sponsor shall afford MBRT members the opportunity to schedule and conduct an on-site inspection of the mitigation area under review to verify that the criteria are met.

c. Corps: Within thirty (30) days of receipt of this notice (except with good cause), the Corps shall notify the bank sponsor by certified mail that the Corps determined either that the compensatory mitigation has been successfully completed; or that the compensatory mitigation is not successful, identifying specifically those elements of the compensatory mitigation that do not meet the performance standards.

2. Final Success Criteria. The bank or phase thereof shall be deemed successful when all of the following criteria have been met after a period of at least one full year without intervention in the form of artificial manipulation of water levels or replanting of desirable vegetation. The bank shall enhance or restore the following polygon types: mixed forested wetland, cypress flats, hydric and mesic pine flatwoods, and palustrine marsh as shown on Exhibit A-1-6. This plan was developed using historical aerial photographs, soils maps and existing condition observations. As such, the expectation of actual area for each type of system is approximate.

The ultimate goal of the plan is to restore natural processes to the site such that a self-sustaining, functioning ecosystem results. This concept shall override the specific acreage requirements in a general fashion.

a. Community Requirements

Palustrine Marsh

1. Approximately 402 acres (+/- 20%) shall be restored or enhanced to jurisdictional palustrine marsh as described in Attachment A-1 and documented by monitoring data and ground and aerial photography.
2. Herbaceous cover, of species listed in Attachment A-7,plant list, and excluding all woody shrub species, shall be 75% or greater. Woody shrub species shall exhibit no greater than 10% cover.
3. The plants are reproducing naturally, either by normal, healthy vegetative spread (in ways that would be normal for each wetland species) or though seedling establishment, growth and survival.

Hydric Pine Flatwoods and Cypress Flats

1. Approximately 2121 and 1185 acres(+/- 20%) shall be restored or enhanced to jurisdictional hydric pine flatwoods and cypress flats, respectively, as described in Attachment A-1 and documented by monitoring data and ground and aerial photography.
2. Gallberry, yaupon, wax myrtle, titi, fetterbush, and other woody shrubs shall be no taller than the coppice sprouts that could have arisen from root crowns following the most recent fire.
3. Each sampling quadrat shall contain at least 75 desirable species (Attachment A-7, plant list). Some species not listed may be determined to be desirable for the purpose of this condition by providing a citation and/or third party professional botanist/ecologist determination, and, upon concurrence by the MBRT, will thereafter be added to the list.
4. The average cover of graminoids shall be 75% or greater, with no one monitoring quadrat having less than 50% cover, and the collective cover of pioneer *Andropogon spp*. (except *A. liebmannii*) shall not exceed 25% of the graminoids found in each polygon. Additionally, each quadrat shall either attain at least 85% coverage with graminoid species or shall exhibit a clear trend over time of increasing graminoid coverage.
5. The plants are reproducing naturally, either by normal, healthy vegetative spread (in ways that would be normal for each wetland species) or though seedling establishment, growth and survival.
6. For the hydric pine flatwoods, the desirable canopy trees are trending toward a basal area of 40 to 70 sq.ft./ac., as evidenced by annual increase, which is expected to be contained in an average of about 60 to 112 trees per acre as basal area increases.
7. For the cypress flats, the trees shall be gaining basal area annually and trending toward a stand of 5 to 20 canopy trees on average.

Mixed Forested Wetland

1. Approximately 462 acres (+/- 20%) shall be restored or enhanced to jurisdictional mixed forested wetland, as described in Attachment A-1 and documented by monitoring data and ground and aerial photography.

2. Non-nuisance, native wetland ground and shrub species are healthy, reproducing naturally and exhibiting the cover and diversity typical of the habitat as described in Attachment A-1 and reference wetland data, such as found in Florida Natural Areas Inventory natural community descriptions or other such literature. This cover shall be 75% or greater (except in open water area) when canopy cover is less than 30% due to immature trees. As canopy matures, lower percentage cover may be appropriate due to shading, and this decrease will not preclude a success determination.
3. The desirable canopy tree cover is increasing annually. Success will be considered achieved when at least 30% canopy cover has been achieved, not including shrub species, such as titi.
4. The plants are reproducing naturally, either by normal, healthy vegetative spread (in ways that would be normal for each wetland species) or though seedling establishment, growth and survival.

Mesic Pine Flatwoods

1. Approximately 770 acres (+/- 20%) shall be restored or enhanced to mesic pine flatwoods, as described in Attachment A-1 and documented by monitoring data and ground and aerial photography.
2. Each sampling quadrat shall contain at least 25 desirable species (Attachment A-7, plant list). Some species not listed may be determined to be desirable for the purpose of this condition by providing a citation and/or third party professional botanist/ecologist determination, and, upon concurrence by MBRT, will thereafter be added to the list.
3. The average cover of graminoids shall be at least 30% with no one monitoring quadrat having less than 20% cover. The collective cover of pioneer *Andropogon* spp. (except *A. liebmannii*) shall not exceed 25% of the graminoids found in each polygon. Additionally, each quadrat shall either attain at least 50% coverage with graminoid species or shall exhibit a clear trend over time of increasing graminoid coverage.
4. The plants are reproducing naturally, either by normal, healthy vegetative spread (in ways that would be normal for each wetland species) or through seedling establishment, growth and survival.
5. The desirable canopy trees are trending toward a basal area of 40 to 70 square feet per acre, as evidenced by annual increase, which is expected to be contained in an average of about 60 to 112 trees per acre.

b. Compliance: All of the graded areas in the bank are stabilized. The low water crossing areas are effectively curtailing any channelized drainage from the site, culverts are providing increased hydrologic connectivity with no signs of erosion or piping, and ditch blocks are curtailing drainage as designed, and these structures have required no repairs beyond minor maintenance specified in Part V, Section A.2.e for at least three years. The Sponsor is in material compliance with the terms of this MBI/Permit.

c. WRAP Assessment: The Sponsor and the MBRT shall inspect the site and, utilizing the monitoring data and reports, conduct a WRAP analysis to determine that, under the permitted maintenance requirements, all polygons have reached, or are expected to reach and maintain, the criteria required to attain the “with bank” scores, as shown in Attachment A-4, that were used to determine the potential credits for the bank.

d. Nuisance species: Nuisance and exotic species are limited to 5% or less cover/acre out of which exotic species are limited to 1% or less cover/acre.

3. Interim Success Criteria: Prior to achieving the final success criteria described in Section E.2. above, and in order to qualify for the interim credit releases associated with "Performance Standards, Year X" in the release schedule in Section F.1. below, the standards that must be attained are:

a. All communities have reached their respective success criteria or are progressively and clearly trending toward these criteria, as supported by monitoring data and ground and aerial photography and verified by an on-site inspection by the MBRT.

b. At a minimum, the herbaceous ground cover of hydric pine flatwoods and cypress flat communities shall attain the following standards:

-Year 1: Monitoring quadrats shall average at least 25 species from the list of desirable species and attain at least 40% cover with non-nuisance vegetation, of which 20% or more shall be graminoid species.

-Year 2: Monitoring quadrats shall average at least 40 species from the list of desirable species and attain at least 50% cover with non-nuisance vegetation, of which 30% or more shall be graminoid species.

-Year 3: Monitoring quadrats shall average at least 50 species from the list of desirable species and attain at least 60% cover with non-nuisance vegetation, of which 40% or more shall be graminoid species.

-Year 4: Monitoring quadrats shall average at least 60 species from the list of desirable species and attain at least 70% cover with non-nuisance vegetation, of which 60% or more shall be graminoid species.

c. At a minimum, the herbaceous ground cover of mesic pine flatwoods shall attain the following standards:

-Year 1: Monitoring quadrats shall average at least 10 species from the list of desirable species and attain at least 30% cover with non-nuisance vegetation, of which 20% or more shall be graminoid species.

-Years 2 and 3: Monitoring quadrats shall average at least 15 species from the list of desirable species and attain at least 40% cover with non-nuisance vegetation, of which 25% or more shall be graminoid species.

-Year 4: Monitoring quadrats shall average at least 20 species from the list of desirable species and attain at least 50% cover with non-nuisance vegetation, of which 30% or more shall be graminoid species.

d. The bank is in compliance with the terms of this agreement.

F. Schedule of Credit Availability: Upon submittal of all appropriate documentation by the Sponsor, and subsequent approval by the Corps and FDEP, in consultation with the other members of the MBRT, it is agreed that credits will become available for use by the Sponsor or for transfer to a third party in accordance with the following schedule:

1. Credit Release Schedule. Mitigation credits shall be released from the bank or phase thereof when the financial assurance requirements described in this document are in place and a recorded conservation easement has been received by the Corps/FDEP. Mitigation credits will become available for impacts according to the credit release schedules below.

Credit releases shall be supported by documentation provided by the bank sponsor of the implementation of the project in accordance with the plans herein, attainment of the criteria, and upon the approval of the MBRT.

Credit Release Schedule

Release Activity	***Permit Section***	***% Credits Released***	***Credits Phase 1***	***Credits Phase 2***	***Credits Phase 3***	***Credits Phase 4***
Record Conservation Easement, Financial Assurances	III-D, III-E	10%	16.63	59.66	17.09	6.41
Logging, Selective Clearing, Brush Reduction, Exotic Control	III-F	20%	33.32	119.32	34.18	12.84
Prescribed Burn	III-G	15%	24.91	89.49	25.64	9.64
Hydrologic Improvements	III-H	5%	8.32	29.84	8.56	3.23
Performance Standards, Year 1 attained	IV-E(3)	10%	16.63	59.66	17.09	6.41
Performance Standards, Year 2 attained	IV-E(3)	10%	16.63	59.66	17.09	6.41
Performance Standards, Year 3 attained	IV-E(3)	10%	16.63	59.66	17.09	6.41
Performance Standards, Year 4 attained	IV-E(3)	10%	16.63	59.66	17.09	6.41
Performance Standards, Final attained	IV-E(2)	10%	21.96	59.66	17.09	6.41
Total (998.03 credits)		100%	166.33	596.61	170.92	64.17

2. Release procedure. Whenever the bank sponsor believes the mitigation bank or phase thereof has attained the criteria for a credit release, as defined herein, they shall request a determination of achievement and release of credits. The requests for credit releases shall be supported by documentation provided by the Sponsor that the release conditions and criteria have been met. The Sponsor shall afford MBRT members personnel the opportunity to schedule and conduct an on-site inspection of the mitigation area under review to verify that the criteria are met.

FDEP: For the State, this request shall be in the form of a minor modification with an appropriate fee, which shall be reviewed in accordance with Chapter 120, FS. FDEP shall review the documentation, conduct a site visit to determine if the documentation is representative of on-site conditions, and perform a compliance review of the permit, prior to the issuance or denial of the minor modification to release credits. An updated ledger indicating the additional available credits shall be attached to the minor modification.

Corps: The notice shall be sent by certified mail to the Corps, Panama City and Jacksonville offices. Within 30 days (except for good cause), the Corps shall make a determination that the criteria are met and credits may be released, or, if not, will specifically identify those elements not meeting criteria.

G. Conditions on Debiting:

Corps: A ledger listing available and potential credits shall be maintained by the Sponsor and updated with each transfer of credits. An updated copy of the ledger shall be provided to the Corps following each debit or release.

FDEP: Withdrawal of the mitigation bank credits as compensatory mitigation for wetland impacts shall be accomplished though a minor modification of the FDEP permit. Modification requests for credit withdrawal shall not require a modification fee. Modification requests shall be made in writing to the Office of Submerged Lands and Environmental Resources in Tallahassee. Minor modification requests shall only be submitted by the bank Sponsor. The modification request shall include:

1. a complete list of all permits (or other applicable regulatory actions) that require mitigation credits from the Breakfast Point Mitigation Bank,
2. the permit number, issue date and wetland resource permit processor/reviewer,
3. an identification of the number of wetland credits required under each of these permits.

Minor modification approvals for credit withdrawal shall be issued only to the bank Sponsor. An updated official credit ledger shall be included by FDEP as an attachment to each minor modification approval for credit withdrawal.

H. Provisions For Uses of the Mitigation Bank Area: The Sponsor shall not:

1. Grant additional easements, right of way, or any other property interest in or to the project areas without the written consent of the Corps, FDEP and the Northwest Florida Water Management District (NWFWMD), in consultation with the MBRT.
2. Use or authorize the areas within the Bank for any purpose which interferes with its conservation purposes other than those specified within this MBI/Permit.
3. The Sponsor may continue to allow hunting for legal game on the mitigation bank site in accordance with the attached Hunting Lease Conditions (Attachment A-13), so long as these hunting activities in no way negatively affect the ongoing restoration and rehabilitation effort or any conditions of this MBI/Permit, as determined by the MBRT.

V. MAINTENANCE AND MONITORING OF THE BANK

A. Maintenance Provisions: The Sponsor agrees to perform all necessary work to maintain the Bank consistent with the success criteria and restoration goals established in Sections A(2) and G below and in the Compensatory Mitigation, Fire Management, and Security Plans (Attachments A-1, A-2, and A-3, respectively). The Sponsor shall continue with such maintenance activities in perpetuity or until such time as the sponsor transfers this permit, management responsibilities and the fully funded long-term management trust fund to another entity.

<u>1. Monitoring and Management During Construction.</u> Monitoring during construction activities is intended to ensure compliance with BMPs, to minimize wetland impacts and to ensure that there are no turbidity plumes or violations of state water quality standards (Exhibit A-1-9). Whenever possible, the Sponsor shall conduct construction and timbering activities in dry conditions such that there is no turbid discharge into open water systems. If activities must be conducted in or near open water systems, the Sponsor shall use turbidity and/or silt screens (Exhibit A-1-9 and Attachment A-9) in accordance with BMPs, and to monitor the open waters upstream (or out of influence of the activity) and downstream of the activity. If, at any time, turbidity at the downstream site is 29 NTU or greater than the upstream site, the Sponsor shall discontinue the activity and rectify the problem. It is the responsibility of the Sponsor to rectify any unauthorized wetland impacts or water quality problems found and to inform FDEP within

24 hours by phone, FAX or e-mail (with follow-up written memo) of the cause and remedies implemented.

2. Management for Success and Maintenance. The wetlands are expected to trend to success once the planted pine and other inappropriate species are removed and the hydrology and fire regime are restored. Prior to a success determination, monitoring data, observation, professional judgment, and the adaptive management plan will dictate the type and frequency of short-term maintenance activities required to meet and maintain the restoration goals described in the Compensatory mitigation Plan. Regular bank management and maintenance activities shall include, but are not limited to:

a. Conducting prescribed burns on a 2-3 year schedule in accordance with the goals and procedures described in the Fire Management Plan (Attachment A-2);
b. Annual treatment of vegetation, as necessary, to meet the interim success criteria in Part IV, Section E(3);
c. Removing feral/exotic animals that threaten the mitigation activities or success, such as feral hogs;
d. Planting of supplemental wetland vegetation as necessary to achieve and maintain the success criteria in Part IV, Section E;
e. Ensuring stability of all graded areas;
f. Maintaining site security (fencing and signage) and inspecting for poaching or dumping (Attachment A-3);
g. Collecting monitoring data as required in Part V, Section B, and submitting all required reports.

In addition to the regular maintenance activities, the Sponsor is responsible for quickly reporting and repairing any damage to the site, security or equipment as well as repairing any failure of the ditch blocks or stabilization.

B. Monitoring Provisions: The Sponsor agrees to perform all necessary work to monitor the Bank to demonstrate compliance with the success criteria established in this MBI/Permit. The proposed monitoring plan (Attachment A-8) has been determined to be substantively adequate to evaluate progress toward restoration goals, identify potential roadblocks or impacts that may hamper attaining those goals, provide opportunities for scientific assessment of wetland functions and processes, and ultimately demonstrate that the Bank's success criteria have been met. However, in order to accommodate any changes necessitated by permitting conditions and/or operational restrictions, the Sponsor shall submit, for MBRT written approval, a final monitoring plan 60 days prior to conducting monitoring associated with the determination of success for this permit. The MBRT shall complete such approval within 60 days of receipt of a written submittal of the final monitoring plan. This plan shall include the following attributes:

1. a figure showing all sampling and photographic locations;
2. a table indicating all sampling and photographic frequencies and/or dates;
3. a detailed description of all sampling methodologies to be utilized;
4. samples of field and data tables;
5. photographic information.

In addition, this monitoring plan shall include a section detailing the proposed analyses and reporting that will be conducted utilizing the collected data. This section shall include:

6. proposed reporting format;

7. sample data summary tables and graphs;
8. proposed analytical assessments and discussion contents; and
9. a success/progress assessment.

C. Reports: The Sponsor shall submit to MBRT the following reports:

1. Progress Reports. Beginning after permit issuance until final success determination of the bank or phase thereof, the Sponsor shall submit semi-annual progress reports, by January 1 and June 1 of each year, containing the following information regarding the bank or phase:

a. Date permitted activities were begun or are anticipated to begin;
b. Brief description and extent of work completed since the previous report or since permit was issued;
c. Copies of permit drawings indicating areas where work has been completed;
d. A description of problems encountered and solutions undertaken;
e. A brief description of the work and/or site management the Sponsor anticipates commencing, continuing or completing in the next six months; and
f. Site management undertaken, including type of management and dates each type was undertaken.

2. Annual Reports. The Annual Report is a summary of the annual monitoring for success and an assessment of the degree to which the bank is attaining success. This report shall be submitted by January 1 each year and shall be prepared according to the format required and approved in accordance with Part V, Section B. This report shall be submitted annually until the Bank site or phase thereof has been determined to be successful. The Sponsor may synchronize the reporting required in Part V, Section C.1 such that alternate progress reports may be included as a section in the Annual Report. The Annual Report that requests a determination of final success in accordance with Part V, Section E shall also include the following information:

a. a summary of all previous Annual Reports, including, as appropriate, timeline graphics;
b. a list of each success criterion and documentation of how and when it was attained;
c. a notation of problems encountered in attaining the success criteria and how the problems were solved, and a notation of any exceptionally successful management activity;
d. a summary of compliance and/or enforcement submittals or actions during the implementation of the bank; and
e. any other information helpful for the continued success of the mitigation.

D. Accounting Procedure: In order to track credit releases and withdrawals, a ledger shall be kept by both the Sponsor and FDEP indicating all potential, released, withdrawn and available credits. The format for the ledger, indicating potential credits, is attached as Attachment A-6.

E. Adaptive Management: The MBRT accepts that all ecological restoration projects are site specific, that multiple endpoints are possible owing to the stochastic nature inherent ecological processes, and that human activities offsite and beyond the control of the mitigation bank may influence the course of restoration. For these reasons, the MBRT may, in consultation with the Sponsor, change the restoration strategy, modify the objectives, and adjust the performance standards and monitoring protocols at any time prior to full project release. Such changes must be made in writing and must qualify as adaptive management toward the ultimate restoration goals in response to site-specific conditions. The mitigation bank must demonstrate good-faith

efforts to comply with restoration requirements and cannot invoke an alleged need for adaptive management as a pretext for slovenliness. Likewise, changes made by the MBRT shall not prolong the project or cause and increase in the overall cost of restoration to the mitigation bank.

F. Contingency Plans/Remedial Actions: In the event the Bank or a specific phase of the Bank fails to achieve the success criteria specified in Part IV, Section E, of this MBI/Permit, the Sponsor shall develop necessary contingency plans and implement appropriate remedial actions for the Bank or that phase in coordination with the MBRT. In the event the Sponsor fails to implement necessary remedial actions in a timely manner after notification by the Corps or FDEP of necessary remedial action to address any failure in meeting the success criteria, the authorizing agency(ies) will notify the Sponsor and recommend appropriate remedial actions.

If the authorizing agency(ies) determines that the Bank is selling credits prior to their release or are not in compliance with the terms of this agreement, debiting of credits will immediately cease, and the authorizing agency(ies), in consultation with the MBRT and the Sponsor, will determine what remedial actions are necessary to correct the situation. As determined by the FDEP or the Chair in coordination with the MBRT and the Sponsor, if conditions at the bank site do not improve or continue to deteriorate within a reasonable time frame from the date that the need for remediation was first identified in writing to the Sponsor by FDEP or the Chair of the MBRT, the financial assurance funds required in Part III, Section D. shall be transferred to the fund manager to undertake corrective measures at the project site.

At the request of the Sponsor, the MBRT will perform a final compliance visit to determine whether all success criteria have been satisfied. Upon satisfaction of the success criteria, the construction and implementation trust fund will be released to the Sponsor, and the Sponsor will be allowed to use the long-term management trust fund to implement the management plan.

G. Long-Term Management: After the banking operations are complete and the bank has been determined to be fully successful according to Part V, Section E, the Sponsor shall initiate the long-term management responsibilities as follows:

1. Quarterly inspection of the property for signs of trespassing, poaching or dumping and to ensure that the structures, ditch blocks and security features are in good working order;
2. Immediate reporting and timely maintenance, restoration or repair of any damaged equipment, systems or property identified in the quarterly inspection;
3. Conducting exotic and nuisance plant control, as necessary, to maintain success criteria. At no time shall the cover of these species exceed 5% cover/acre prior to remedial eradication activities;
4. Conducting prescribed burns at a frequency and season optimal to promote desirable vegetation and wildlife, as specified in the mitigation plan;
5. Submitting an annual end-of-the-year report/letter summarizing the activities conducted during the year and describing the current conditions of the property.

VI. RESPONSIBILITIES OF THE MBRT

A. The agencies represented on the MBRT agree to provide appropriate oversight in carrying out provisions of this MBI/Permit.

B. The agencies represented on the MBRT agree to review and provide comments on all project plans, monitoring reports, credit review reports, contingency plans, and necessary

permits for the Bank in a timely manner. Comments on the monitoring reports and credit review reports will be reviewed within 30 calendar days from the date of complete submittal, or, for minor modification requests, in accordance with Chapter 120 F.S. guidelines, except for good cause.

C. The agencies represented on the MBRT agree to review and confirm reports on evaluation of success criteria prior to approving credits within each phase of the bank.

D. The agencies represented on the MBRT shall conduct compliance inspections, as necessary, as determined by the authorizing agencies in consultation with the Sponsor, to verify credits available in the mitigation bank, recommend corrective measures (if any), until the terms and conditions of this MBI/Permit have been determined to be fully satisfied.

VII. OTHER CORPS PROVISIONS

A. Force Majeure: The sponsor will not be responsible for bank failure that is attributed to natural catastrophes such as flood, drought, disease, regional pest infestation, etc., that the MBRT, acting through the Chair, determine is beyond the control of the Sponsor to prevent or mitigate.

B. Dispute Resolution: Resolution of disputes about application of this Banking Instrument shall be in accordance with those stated in the Federal Guidance for the Establishment, Use and Operation of Mitigation Banks (60 F.R. 58605 et seq., November 28, 1995).

C. Validity, Modification, and Termination of the Banking Instrument: This Banking Instrument will become valid on the date of the last signatory's signature. This Banking Instrument may be amended or modified with the written approval of all signatory parties. Any of the MBRT members may terminate their participation upon written notification to all signatory parties. Participation of the MBRT members will terminate 15 days after written notification.

D. Specific Language of Banking Instrument Shall Be Controlling: To the extent that specific language in this document changes, modifies, or deletes terms and conditions contained in those documents that are incorporated into the Banking Instrument by reference, and that are not legally binding, the specific language within the Banking Instrument shall be controlling.

VIII. ADDITIONAL FDEP REQUIREMENTS

A. Commencement requirements. At least 48 hours prior to commencement of work authorized by this permit, the Sponsor shall notify FDEP of Environmental Protection, Office of Submerged Lands and Environmental Resources, MS 2500, 2600 Blair Stone Road, Tallahassee, Florida, 32399, and the Submerged Lands and Environmental Resources Compliance and Enforcement Section, Suite 308, Northwest District Office, 160 Governmental Center, Pensacola, Florida 32502-5794, in writing of this commencement.

B. Notices. Unless otherwise specified, all reports and other information required for this permit shall be submitted to the Florida FDEP of Environmental Protection, Office of Submerged Lands and Environmental Resources, MS 2500, 2600 Blair Stone Road, Tallahassee, Florida 32399-2400.

C. The Sponsor shall not commence any construction activities authorized by this permit until the following requirements are completed and FDEP has been notified in writing:

1. A copy of the recorded clerk-of-the-court certified Conservation Easement has been received by FDEP as required in Part III, Section E;

2. A Qualified Mitigation Supervisor is retained as required in Part VIII, Section 5; and

3. Proof of financial responsibility is obtained as required in Part III, Section D.

D. This mitigation bank permit shall automatically expire five years from the date of issuance if the Sponsor has not recorded a conservation easement in accordance with the permit and Rule 62-342750 (2) F.A.C. Except as provided above, this mitigation bank permit shall be perpetual unless revoked or modified.

E. Project Oversight. Prior to commencement of any construction activities, the Sponsor shall retain a Qualified Mitigation Supervisor (QMS) (a person or persons) to oversee all aspects of mitigation bank site implementation, management, monitoring, and corrective actions in this permit until final success criteria are met.

1. The QMS shall have the responsibility to ensure that the mitigation bank work is conducted in accordance with the permit.

2. Within 30 days of issuance of this permit, the Sponsor shall submit the name of the QMS retained to oversee the mitigation work and provide supporting documentation demonstrating that the QMS is qualified to oversee this work. FDEP must approve the QMS prior to commencement of the mitigation bank work. FDEP shall complete such approval within 30 days of receipt of a written request from the Sponsor for QMS approval.

3. Within 30 days of the discharge of any approved QMS, the Sponsor shall submit the name and supporting documentation of a new QMS to FDEP for its review and approval.

4. The Sponsor shall have the approved qualified QMS review the conditions of this permit that pertain to environmental improvement. The purpose of this review is to ascertain whether any criteria need to be modified to ensure ecological success. If FDEP concurs that any proposed modifications would improve the likelihood of mitigation success, these changes shall be incorporated into this permit as a minor modification.

Federal Agency Signature Page

Date: _____

By: _____
John R. Hall
Chief, Regulatory Division
U.S. Army Corps of Engineers, Jacksonville District, Chair

Date: _____

By: _____
Ronald Mikulak
Section Chief, Wetlands Regulatory Section
U.S. Environmental Protection Agency, Region IV

Date: _____

By: _____
Gail A. Carmody
Field Office Supervisor
U.S. Fish and Wildlife Service, Panama City

Date: _____

By: _____
Robert M. Rhodes
Executive Vice President
The St Joe Company, Sponsor

This Mitigation Banking Instrument is in effect commencing on _____.

Mitigation Plan Documentation
Breakfast Point Mitigation Bank

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ATTACHMENT A-1 – COMPENSATORY MITIGATION PLAN

1. Introduction

The St. Joe Company (SJC) wishes to restore and enhance approximately 5,031 acres of wetlands and uplands that are primarily in silviculture, within a portion of their property in Bay County, Florida. The proposed project is located on the Breakfast Point Peninsula, which is north of Panama City Beach and extends northward into West Bay (Exhibit A-1-1). The proposed project, known as the Breakfast Point Mitigation Bank (herein referred to as the "BPMB"), is surrounded by about 2,250 acres of conservation lands along the shoreline.

The mitigation plan contained herein provides technical documentation in support of issuance of a U.S. Army Corps of Engineers (the Corps) Section 404 Regional General Permit (RGP) and a Florida Department of Environmental Protection (FDEP) Ecosystem Management Agreement (EMA) for the West Bay to East Walton County GP/EMA Project.

2. Goals and Objectives

The objective of this mitigation plan is to compensate for the loss of wetland functions within the West Bay watershed basin associated with the RGP/EMA Project, which may result in the permanent loss of up to 1,033 acres of low quality and about 60 acres of high quality Corps/FDEP-jurisdictional areas, representing only 9.5% of the jurisdictional areas in the West Bay watershed within the RGP/EMA area.

The majority of the proposed impacts in the RGP/EMA project area will be to hydric pine plantation and wetlands that have been disturbed by silviculture and silviculture-related activities such as bedding, fire suppression, ditching, and road building and maintenance. These wetlands are considered to be low quality wetlands as defined in the RGP/EMA. About 94% of possible impacts to wetlands would be to these low quality wetlands that have been disturbed by silvicultural or other anthropogenic activities.

The remaining proposed impacts in the RGP/EMA project area will be to relatively undisturbed wetlands. These wetlands have not been planted in pine as part of silvicultural or other anthropogenic activities unlike the low quality wetlands. These unplanted wetland types include cypress swamps, slash pine swamp, and hydric pine flatwoods, and are considered high quality wetlands. About 8% of the wetland impacts (60 acres) would be to these high quality wetlands.

Functions that would be lost due to the development of disturbed on-site wetlands would be primarily to water quality and quantity, wildlife habitat, essential fish habitat (EFH) in West Bay, and flood storage capacity provided by the impact sites.

The ecological restoration project at the BPMB is designed to restore the pre-pine plantation/historical communities to the project site. Specifically, it entails the restoration[1] of a total of a mosaic of natural communities.

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[1] Terminology follows the Corps of Engineers' Regulatory Guidance Letter for Wetlands And Interagency National Wetlands Mitigation Action Plan, released 12/27/02. Restoration: The manipulation of the physical, chemical, or biological characteristics of a site with the goal of returning natural or historic functions to a former or degraded wetland. For the purpose of tracking net gains in wetland acres, restoration is divided into: a.) Re-establishment: The manipulation of the physical, chemical, or biological characteristics of a site with the goal of returning natural or historic functions to a former wetland. Re-establishment results in rebuilding a former wetland and results in a gain in wetland acres; and b.) Rehabilitation: The manipulation of the physical, chemical, or biological characteristics of a site with the goal of repairing natural or historic functions of a degraded wetland. Rehabilitation results in a gain in wetland function but does not result in a gain in wetland acres. Under FDEP's rules "Re-establishment" equals "Creation" and "Rehabilitation" equals "Enhancement."

The proposed ecological goals for fulfilling the mission at the BPMB are threefold:

1. Recreate the landscape mosaic as it appeared on 1953 aerial photographs. The 1953 landscape was that which existed immediately preceding conversion activities.
2. Re-establish the species composition and structure of the 1953 plant communities. The communities will resemble reference communities in the coastal counties of panhandle Florida on similar soils and at similar elevations above sea level with respect to life form distribution, vertical stratification, overall species abundance, and patterns of dominance.
3. Within the practical limits of future management requirements, rehabilitation efforts will return natural patterns of surface run-off by filling ditches and erosion areas, eliminating roads, installing equalizer culverts under and creating hardened low water crossings in permanent roads, and will implement a “natural” prescribed fire regime at the site.

The project site contains hydric and mesic pine flatwoods, cypress flats, mixed forested wetland, and palustrine marsh communities, most of which require rehabilitation.

3. Existing Conditions

3.1 Landscape Setting

The 5,031-acre BPMB is entirely within property owned by SJC. Surrounding and nearby land uses include silviculture, conservation, residential, and commercial. The BPMB is located north of Panama City Beach and extends northward into West Bay (Exhibit A-1-1).

The shoreward edge of the BPMB consists of conservation lands, comprised of expansive salt marshes, tidal flats and pine islands that surround the peninsula. These conservation lands and the BPMB will effectively buffer approximately 11 miles of West Bay shoreline.

The BPMB is located within five drainage basins: Direct Runoff to Bay, Botheration Bayou, Basin Bayou, Harrison Bayou, and Unnamed Bayou, which are within the St. Andrews Bay watershed (FGDL 2003; Fernald and Purdum 1998). This large estuarine watershed incorporates the interconnected St. Andrew, West, East, and North Bays; St. Joseph Bay; Deer Point Reservoir; and the respective surface water basins of these water bodies (NWFWMD 2000). The watershed covers approximately 750,000 acres in six Florida counties; 61 percent of which is in Bay County. The dominant land use in the watershed is upland forest, which is primarily in silviculture.

3.2 Topography and Hydrology

Topography across the BPMB varies from about 0 foot NGVD along the West Bay shoreline to about 12 feet NGVD along the southern boundary. Natural drainage on the property varies from the interior, where flows are to the center of the site and then west into Botheration Bayou and the outer rim of the site, which generally flows toward West Bay (Attachment A-9 and Exhibit A-1-3). There are ridges from ancient shorelines running generally northwest to southeast through the site, which tend to separate the lower-lying areas from one another. The remainder of the site is quite flat and is pockmarked throughout by small rises and depressions.

3.3 Soils

According to the Natural Resources Conservation Service (NRCS) soil survey for Bay County, Florida (USDA 1981), eight soil units are present on the property. A general description of each soil unit present on the site is provided below. Locations of soil units are depicted on Exhibit A-1-4.

Table A-1. USDA NRCS Soil Types within the Breakfast Point Mitigation Bank

Soil Number	Soil Type	Hydric or Not Hydric
13	Leon Sand	Hydric - Not Primary
22	Pamlico-Dorovan Complex	Hydric – Primary
23	Chipley Sand, 0 to 5 percent slopes	Not Hydric
27	Mandarin Sand	Hydric - Not Primary
29	Rutlege Sand	Hydric – Primary
30	Pottsburg Sand	Hydric - Not Primary
41	Dirego Muck	Hydric – Primary
52	Bayvi Loamy Sand	Hydric – Primary

Leon Sand: This poorly drained, nearly level soil occurs in pine flatwoods areas where the natural vegetation consists of a canopy of longleaf, pond, and slash pine; water oak and an understory of wax myrtle, saw palmetto, running oak, fetterbush, gallberry, and pineland threeawn. The unit has a water table within a depth of 10 inches for 1 month to 4 months and at a depth of 10 to 40 inches for about 9 months in most years. The NRCS Ecological Community typical for this soil type is north Florida flatwoods.

Pamlico-Dorovan Complex: This complex of very poorly drained soils occurs in depressional areas along low gradient drainageways. The vegetation consists mostly of water-tolerant hardwoods such as water oak, sweetbay, back gum, red maple, black willow, alder, and cypress. The Pamlico soils have a water table within a depth of 10 inches most of the time, and are ponded after flooding for 4 to 8 months in most years. The Dorovan soils have a water table within a depth of 10 inches most of the time, and are ponded after flooding for 6 to 12 months in most years. The NRCS Ecological Communities typical for this soil type are often swamp hardwoods and sometimes shrub bog.

Chipley Sand, 0 to 5: This somewhat poorly drained, nearly level to gently sloping soil occurs between higher upland soils and wet flatwoods. Natural vegetation consists of slash and longleaf pines; post, bluejack, and turkey oaks; huckleberry; dogwood; native shrubs; saw palmetto; bluestem; and wiregrass. This soil has a water table at a depth of 30 to 40 inches for 1 month to 3 months and at a depth of 40 to 60 inches for 3 to 6 months in most years. The NRCS Ecological Community typical for this soil type is mixed hardwood & pine.

Mandarin Sand: This somewhat poorly drained, nearly level soil is on low ridges and knolls in the flatwoods. Natural vegetation consists of longleaf pine, slash pine, water oak, bluejack oak, turkey oak, and post oak in the canopy and an understory of wax myrtle, saw palmetto, running oak, fetterbush, and pineland threeawn. The soil has a water table at a depth of 20 to 30 inches for 1 month to 3 months and at a depth of 30 to 60 inches for about 9 months in most years. The NRCS Ecological Community typical for this soil type are sand pine scrub and north Florida flatwoods.

Rutlege Sand: This very poorly drained soil is on nearly level or slightly depressional areas along drainageways. The natural vegetation is buckwheattree [black titi], sweetbay, blackgum, cypress, and scattered slash pine. The understory is gallberry, wax myrtle, pineland threeawn, and various reeds and sedges. The Rutlege sand has a water table at or near the surface for 4 to 6 months during most years and is under ponded conditions for 4 to 6 months annually. The NRCS Ecological Community typical for this soil type are cypress swamp, swamp hardwoods, shrub bog, and pitcher plant bog.

Pottsburg Sand: This poorly drained soil is on nearly level, low-lying areas of the flatwoods. The natural vegetation consists of sweetbay, buckwheattree, blackgum, water oak, scattered slash and longleaf pine, inkberry, gallberry, saw palmetto, wax myrtle, and pineland threeawn. The soil unit has a water table within a depth of 10 inches for 4 to 6 months during most years. Some low-lying inclusions are ponded for 2 to 6 months annually. The NRCS Ecological Community typical for this soil type is north Florida flatwoods.

Dirego Muck: This level to nearly level, very poorly drained soil occur in tidal marshes. The natural vegetation is dominantly needlerush, cordgrass, and torpedograss. The Dirego soil has a water table at a depth of less than 10 inches, or the soil is ponded for 6 to 12 months, during most years. The NRCS Ecological Community typical for this soil type is salt marsh.

Bayvi Loamy Sand: This level or nearly level, very poorly drained soil is in the tidal marshes and is inundated daily by normal high tides. The natural vegetation is dominantly needlerushes, cordgrass, and torpedograss. The unit has a water table at a depth of less than 10 inches, or the soil is ponded for 6 to 12 months, during most years. The NRCS Ecological Community typical for this soil type is salt marsh.

3.4 Vegetation Associations/Land Uses

Much of the proposed mitigation bank has been planted in slash pine; slash pine plantation, of various ages from about 3 years to 25 years, comprises approximately 87% of the site. In wetter areas, such as in cypress flats/swamps and freshwater marshes, many of the slash pines have died. Some of the older plantings have recently been thinned every third row. Most of the site was bedded during planting, and bed and furrow depths range from about 3 to 12 inches, typically 3 to 8 inches deep. Some of the types of communities found on the site vary based on slight differences in topography. Where wetlands have been furrowed, distinctly different plant communities usually exist on the tops of the beds vs. in the furrows. The understory/ground cover strata varies from open herbaceous to very dense thickets of mesic or hydric shrubs. Due to fire suppression, shrub percent cover is much higher than would naturally occur in the historical natural communities. There has been no infrastructure constructed on the site other than logging roads and ditches to support silviculture.

Other vegetative communities include pine flatwoods, cypress swamp, mixed forested wetland, wet prairie, freshwater marsh and saltwater marsh (Table A-2 and Exhibit A-1-5). This exhibit also shows communities within the surrounding conservation area, that are not included in acreage calculations in Table A-2.

The planted pines occur primarily in historical hydric and mesic pine flatwoods, cypress flats, wet prairie, and freshwater marsh. Habitats on the property vary in quality from excellent to poor depending on the effects of management for pine silviculture. The degree of infestation by exotic and nuisance plant species is minimal; Chinese tallow (*Sapium sebiferum*) and cattail (*Typha latifolia*) were observed in several on-site wetlands and in roadside drainage ditches. Section 3.4 presents more detailed descriptions of the on-site vegetative community types.

Table A-2. Breakfast Point Mitigation Bank Existing Land Use Characteristics

FLUCFCS Code	FLUCFCS Description	Total Available Acres	Percent of Pre-Restoration Wetlands	Percent of Pre-Restoration Site
411	Mesic Pine Flatwoods	321.4	0.0	0.0
441H	Hydric Pine Plantation	3,396.5	86.8	67.5
441M	Mesic Pine Plantation	713.6	0.0	14.1
621	Cypress Swamp	207.4	5.4	4.2
630	Mixed Forested Wetland	102.4	2.7	2.0
641	Freshwater Marsh	166.7	4.3	3.4
643	Wet Prairie	32.9	0.8	0.7
814	Roads	90.5	0.0	1.8
Total	**TOTAL**	5,031.4	100.0	100.0

Fire suppression has encouraged increased woody plant cover in all four communities of the southeastern pine savanna ecosystem. Herbaceous plants have been suppressed to varying degrees by woody competition, including a denser than natural canopy cover. Stresses from competition include shading, increased evapotranspiration rates, and competition for nutrients. Organic litter accumulation due to planted slash pines is somewhat greater than in natural systems. The most abundant woody colonizers were inkberry wax myrtle (*Myrica cerifera*), gallberry (*Ilex glabra*), large gallberry (*Ilex coriacea*), yaupon (*Ilex vomitoria*), fetterbush (*Lyonia lucida*), bamboo-vine (*Smilax laurifolia*), and in wetter areas myrtle-leaf holly (*Ilex myrtifolia*), swamp bay (*Persea palustris*), sweet bay (*Magnolia virginiana*), and black gum (*Nyssa biflora* and *N. ursina*). Some sites have developed thick understory vegetation of shrub thickets or, on wetter soils, shrub thickets/swamps. Numerous young slash pines have appeared spontaneously throughout the tract from seeds produced by planted slash pines.

Fire-suppressed cypress flats have been colonized to varying degrees by pond cypress (*Taxodium ascendens*), swamp tupelo (*Nyssa biflora*), slash pine (*Pinus elliottii*), sweet bay (*Magnolia virginiana*), swamp bay (*Persea palustris*), red maple (*Acer rubrum*), Carolina ash (*Fraxinus caroliniana*), and several species of woody shrubs and vines.

Water cover, depth, and flow direction across the site have been affected by activities related to silviculture – construction of ditches and logging roads, and bedding and furrowing. In some areas, the density of pine plantings and shrub cover has undoubtedly increased evapotranspiration.

3.4.1 Mesic Pine Flatwoods (FLUCFCS 411)

Areas of the site mapped as pine flatwoods represent native flatwoods habitat that has not been converted to silviculture. The canopy in on-site mesic pine flatwoods is predominantly *Pinus elliottii* but may also contain *Pinus palustris*. The understory has a wide diversity of mesic-hydric shrubs such as *Ilex glabra, Lyonia lucida, L. ferruginea, Serenoa repens, Kalmia hirsuta, Quercus minima, Rhus copallina, Gaylussacia dumosa, Vaccinium darrowii, Cyrilla racemiflora, Aronia arbutifolia, Conradina canescens, Vitis rotundifolia,* and *Pteridium aquilinum, Aristida stricta*.

Animals observed in on-site mesic flatwoods include Florida box turtle, pileated woodpecker, and prothonotary warbler.

3.4.2 Mesic Pine Plantation (FLUCFCS 441M)

The species occurring in the subcanopy, understory, and ground cover are similar to those occurring in mesic pine flatwoods. The canopy is planted slash pine that ranges in ages from about 3 to 25 years old. Pine rows were approximately 3 to 5 meters apart and furrows were less than 6 inches to 12 inches deep. The mesic pine plantations generally support facultative to upland species as the dominant species in the understory/shrub and ground cover layers; however, on the Breakfast Point Mitigation Bank, mesic and hydric areas intermix so that hydric species may be frequent in mesic areas.

The shrub layer in mesic pine plantations typically is dominated by Ilex glabra, Lyonia lucida, L. ferruginea, Myrica cerifera, and Serenoa repens, and may also contain Juniperus silicicola, Quercus minima, Q. pumila, Kalmia hirsuta, Conradina canescens, Vaccinium darrowii, Aronia arbutifolia, Hypericum crux-andreae, H. hypericoides, H. microsepala, Rhus copallina, Cyrilla racemiflora, Gaylussacia mosieri, G. frondosa, Ilex vomitoria, Vaccinium corymbosum elliottii, Toxicodendron radicans, Smilax auriculata, S. laurifolia, S. pumila, and Vitis rotundifolia. Where planting was recent, a shrub layer was nonexistent.

The ground cover under pines 15 years old and older may be sparse because of pine duff and shading. Ground cover species observed in on-site mesic pine plantations include *Andropogon glomeratus, Aristida stricta, Carphephorus odoratissimus, Cladonia spp., Pteridium aquilinum, Verbesina chapmanii*, and *Asclepias lanceolata*.

Wildlife species observed within this area include cedar waxwing (*Bombycilla cedrorum*), cricket frog (*Acris gryllus*), eastern towhee (*Pipilo erythrophthalmus*), and armadillo.

3.4.3 Hydric Pine Plantation (FLUCFCS 441H)

Pine plantations in wet areas have been bedded and furrowed to facilitate drainage into ditches, nearby wetlands, or other water bodies. The difference between the bottom of a furrow and top of a bed on the site ranges from about 6 to 12 inches, and the soil conditions and plant species occurring in a furrow usually differ from those occurring on an adjacent bed. Hydric pine plantation intergrades with and contains numerous inclusions of mesic pine plantation, wet prairie, cypress swamp, and freshwater marshes. The recent and historical aerial photography both illustrate the ”pockmarked” landscape signature formed by the frequent occurrence of depressions and rises within the overall landscape.

The understory in hydric pine plantation areas consists of hydric species of small trees, shrubs, grasses, and forbs; however, on the Breakfast Point Mitigation Bank, mesic and hydric areas intermix so that mesic species may be frequent in hydric areas. Commonly, the understory is dense hydric shrubs; however, where the water table is at the ground surface or ponded for several months during most years, the understory is typically freshwater marsh or sedge bog species. In these wettest areas, slash pine growth is usually retarded and some to many have died.

Small trees and shrubs include Taxodium ascendens, Magnolia virginiana, Nyssa sylvatica, var. biflora, Nyssa ursina, Albizzia julibrissin, Cliftonia monophylla, Cyrilla racemiflora, Acer rubrum, and Ilex myrtifolia, I. glabra, I. vomitoria, I. cassine, Myrica cerifera, M. heterophylla, Aronia arbutifolia, Stillingia aquatica, Baccharis spp., Hypericum brachyphyllum, H. fasciculatum, H. tetrapetalum, H. exile, H. crux-andreae, Sapium sebiferum, Toxicodendron radicans, Rubus spp., Smilax laurifolia, Lyonia lucida, Clethra alnifolia, Serenoa repens.

Ground cover species observed include Sphagnum spp., Osmunda regalis, Woodwardia virginiana, W. areolata, A. glomeratus, A. capillipes, A. ternarius, Aristida stricta, Panicum virgatum, P. amarum, P. repens, Paspalum spp., Muhlenbergia capillaris, Spartina patens, Sporobolus floridana, Schizacharium spp., Amphicarpum muhlenbergianum, Cladium jamaicense, Juncus roemerianus, J. megacephalus, J. marginatus, Typha latifolia, Dichromena latifolia, Rhynchospora spp., Eleocharis spp., Scleria spp., Xyris spp., Eriocaulon compressum, Lachnocaulon spp., Iris virginica, Sisyrinchium atlanticum, Hymenocallis rotata, Spiranthes praecox, Sagittaria lancifolia, S. isoetiformis, Aletris lutea, Lobelia spp., Verbesina chapmanii, Solidago rugosa, S. sempervirens, Euthamia minor, Pluchea odorata, P. rosea, Mikania scandens, Bigelowia spp., Erigeron spp., Rumex spp., Polygala lutea, P. cymosa, P. cruciata, Rhexia lutea, R. parviflora, Ludwigia maritima, Lachnanthes caroliniana, Lophiola americana, Proserpinaca pectinata, Centella asiatica, Ipomoea sagittata, Utricularia purpurea, Drosera capillaris, Sarracenia flava, and S. psitticina.

Wildlife species observed within this area include crayfish, *Hyla femoralis*, leopard frog, bronze frog, *Bufo americana*, broad-headed skink (*Eumeces laticeps*), green anole, American alligator, black racer, common nighthawk (*Chordeiles minor*), northern cardinal (*Cardinalis cardinalis*), eastern towhee, common yellowthroat, red-winged blackbird, mockingbird, little blue heron, great blue heron, green heron, snowy egret, white-eyed vireo, blue jay (*Cyanocitta cristata*), catbird, yellow-breasted chat, ground dove, mourning dove, red-tailed hawk (*Buteo lineatus*), turkey vulture, rabbit, white-tailed deer, armadillo.

3.4.4 Cypress Swamp (FLUCFCS 621)

This community on site typically has a freshwater marsh, saltwater marsh, or wet prairie/bog understory; some are open ponds. Cypress swamps grade into freshwater marsh, cypress flats/wet prairie, and hydric pine plantation. Cypress swamps are composed primarily of *Taxodium ascendens* in the canopy, with some natural *Pinus elliottii, Magnolia virginiana, Acer*

rubrum, and *Nyssa biflora*. Canopy cover in on-site cypress swamps typically ranges from slightly more than 10% up to about 50%. Understory species include *Nyssa ursina, Myrica cerifera, Stillingia aquatica, Hypericum fasciculata, Aronia arbutifolia, Cephalanthus occidentalis*, and *Fraxinus caroliniana*. Ground cover species include *Juncus roemerianus, J. megacephalus, Cladium jamaicense, Andropogon glomeratus, Spartina patens, Sporobolus spp., Cyperus spp., Rhynchospora spp., Osmunda regalis, O. cinnamomea, Sphagnum spp., Sagittaria lanceolata, Pluchea spp.,* and *Ludwigia spp*.

Animals observed include crayfish, *Hyla femoralis*, leopard frog, Eastern garter snake (*Thamnophis sirtalis sirtalis*), common nighthawk, common yellowthroat, prothonotary warbler, green heron, bluebird, hooded warbler, little blue heron, pileated woodpecker, mosquitofish (*Gambusia affinis*), *Lepomis spp*., and wild pig (*Sus scrofa*).

3.4.5 Mixed Forested Wetlands (FLUCFCS 630)

These systems contain a mixture of coniferous and hardwood wetland canopy species in which neither type is 60% or more dominant. Mixed forested wetlands occur primarily in the southern portion of the site and may grade into cypress swamp or hydric pine plantation. Canopy species include *Pinus elliottii, Taxodium ascendens, Magnolia virginiana, Persea palustris, Acer rubrum*, and *Nyssa biflora*. Subcanopy species include *Cliftonia monophylla, Cyrilla racemiflora, Lyonia lucida, Ilex coriacea, Hypericum chapmanii, Persea palustris, Ilex myrtifolia, Aronia arbutifolia*, and *Myrica cerifera*. Ground cover species include many of the same species observed in cypress swamps. Ground cover may be almost nonexistent where canopy cover is dense.

3.4.6 Freshwater Marshes (FLUCFCS 641)

On the Breakfast Point Mitigation Bank, the freshwater and salt marshes intergrade near coastal areas and along the tidal creeks. Freshwater marshes are typically dominated by *Cladium jamaicense* or *Spartina patens*, but also support substantial and sometimes dominant populations of *Juncus roemerianus*. Small trees and shrubs occur sporadically throughout and fringing the edges of the marsh. These species include *Taxodium ascendens, Magnolia virginiana, Fraxinus caroliniana, Myrica cerifera, Baccharis halimifolia, Stillingia aquatica, Acer rubrum*, and *Aronia arbutifolia*. These marshes also support *Panicum amarum, Typha spp., Osmunda regalis, Polygala cymosa, P. lutea, Sagittaria lanceolata, Iris spp., Spiranthes spp., Hymenocallis rotata, Utricularia purpurea, Solidago sempervirens, Pluchea spp., Dichromena spp., Fuirena spp., Drosera capillaris, Rhexia lutea, Pterocaulon pycnostachyum*, and *Rhynchospora spp*.

Animals observed include crayfish, cricket frog, leopard frog, broad-headed skink, mud turtle, moccasin, blue jay, Carolina chickadee, eastern bluebird, eastern towhee, northern cardinal, nighthawk, ground dove, and feral pig.

3.4.7 Wet Prairies (FLUCFCS 643)

On the Breakfast Point Mitigation Bank, wet prairies are typically upland from freshwater marshes and occur on site under planted pine as well as intergrading with freshwater marshes, hydric pine plantation, and cypress swamps. Wet prairies on this site typically exhibit a diversity of ground cover species including *Panicum amarum, Osmunda regalis, Polygala cymosa, P. lutea, Asclepias lanceolata, Sagittaria lanceolata, Sarracenia flava, Iris tridentata, I. virginica, Aletris lutea, Spiranthes spp., Lachnanthes caroliniana, Lophiola americana, Hymenocallis rotata, Pluchea rosea, Dichromena spp., Fuirena spp., Drosera capillaris, Rhexia lutea, Coreopsis nudata, Verbesina chapmanii, Pterocaulon pycnostachyum, Rhynchospora spp., Eriocaulon compressum, Xyris spp., Cladium jamaicense, Spartina patens, Juncus roemerianus, Sporobolus floridana*, and *Aristida stricta*. Small trees and shrubs occur sporadically throughout and fringing the edges of the marsh. These species include *Taxodium ascendens, Magnolia virginiana, Fraxinus caroliniana, Myrica cerifera, M. heterophylla, Stillingia aquatica, Acer rubrum, Aronia arbutifolia, Hypericum chapmanii, H. exile, H. brachyphyllum*, and *H. fasciculatum*.

Animals observed include crayfish, cricket frog, leopard frog, broad-headed skink, mud turtle, moccasin, blue jay, Carolina chickadee, eastern bluebird, eastern towhee, northern cardinal, nighthawk, ground dove, and feral pig.

3.4.8 Roads (FLUCFCS 814)

Several unpaved logging roads traverse both upland and wetland communities on site. Most roads are 30 to 40 feet wide. The north-south road that is relatively prominent on the aerial is bordered its entire length by a wide a deep ditch which flows north. Side roads from this main north-south road cross the ditch; these crossings are culverted. Another fairly prominent road on the aerial is the loop road, which curves north into the site and rejoins Powerline Road at both ends. Road crossings of wetlands are often culverted; where crossings are not culverted, they flood frequently. Some on-site "roads" appear to serve a dual purpose as drainage swales; these roads are lower than the surrounding wetlands and frequently wetter. Herbaceous marsh species occur throughout these road-swales. These road-swales appear as dark bands on the aerial photograph.

3.5 Protected Species

Survey Methods

Before beginning field surveys, lists of threatened and endangered species and species of special concern that occur in Bay County were obtained from various sources, including the Florida Natural Areas Inventory (FNAI), the Florida Department of Agriculture and Consumer Services (FDACS), Florida Fish and Wildlife Conservation Commission (FFWCC), the United States Fish and Wildlife Service (USFWS), and the Northwest Florida Water Management District (NWFWMD). WilsonMiller conducted comprehensive biological surveys of the project site using survey methodologies that were generally consistent with FFWCC guidelines (FFWCC 1988).

The survey teams typically consisted of one to two biologists performing meandering pedestrian transects through the site. These transects were conducted in the mornings, afternoons, and evenings by WilsonMiller personnel in April 2003 and by both WilsonMiller and Biological Research Associates personnel in May 2003. The biologists periodically stopped, looked for protected plants and wildlife, signs of wildlife, and listened for wildlife vocalizations.

Protected Species Observed on Site

Several protected species, including two federally protected animals, have been observed in the BPMB. The federally protected species are the American alligator, which is federally listed as threatened[2] and state listed as a species of special concern, and the bald eagle, which is federally and state listed as threatened. Other state-listed animals include the snowy egret and little blue heron, species of special concern.

State-protected plants include white meadowbeauty (*Rhexia parviflora*), state listed as endangered, and parrot pitcher plant (*Sarracenia psitticina*) and Chapman's crownbeard (*Verbesina chapmanii*), both state listed as threatened.

American alligator (*Alligator mississippiensis*): Two individuals were observed in drainage ditches in the BPMB, and suitable habitat exists throughout the mitigation bank. The alligator typically inhabits most permanent bodies of freshwater, including marshes, swamps, lakes, and rivers. They may occasionally wander into brackish and saltwater environments, but rarely remain there. Alligators are most active from spring through fall and nesting occurs in late spring with hatchlings emerging in summer.

[2] The American alligator is listed as threatened at the federal level because of its similarity of appearance to the American crocodile (*Crocodylus acutus*).

Bald eagle (*Haliaeetus leucocephalus*): One bald eagle nest is located near the center of the BPMB. The proposed restoration and enhancement plan will improve and protect the terrestrial, palustrine, and estuarine/marine (West Bay) bald eagle habitat. All USFWS regulations regarding activities around bald eagles' nests will be followed (USFWS 1987).

White meadowbeauty (*Rhexia parviflora*): White meadowbeauty occurs in seepage slopes, and along the margins of dome swamps, depression marshes, and evergreen shrub ponds. This species was observed in hydric planted pine in the southeastern corner of the BPMB. *Rhexia parviflora* flowers from June to August.

Parrot pitcher plant (*Sarracenia psitticina*): The parrot pitcher plant occurs in bogs, wet prairies, and ecotonal areas of swamps. Within the BPMB, it was observed in hydric pine plantation in the western portion of the site.

Chapman's Crownbeard (*Verbesina chapmanii*): Chapman's crownbeard was observed on site in numerous locations in pine plantation, wet flatwoods, cypress flats, wet prairies, and edges of freshwater marsh. This species flowers from May to August.

4. Historical Conditions

4.1 Landscape Setting

The BPMB is located it in extreme southern Bay County, Florida. The project site lies exclusively within the Gulf Coastal Lowlands geomorphic division upon the coastal, Pleistocene–Miocene formed Silver Bluff Terrace. It occurs as a broad coastal peninsula exerted into and surrounded on the west, northwest, north, northeast and east by a band of conservation land that is surrounded by the open waters of West Bay. It occurs 3 miles north of the Gulf of Mexico. The primary stratigraphic areas of the tract occur from 0 to 12 feet above sea level and are contiguous within its landward margin and to its limits by the conservation area.

High annual precipitation, high average temperatures, consistently high humidity, and persistent sea breezes have influenced soil formation and conditions of the proposed BPMB. Rainfall averages about 60 inches annually, with summer being the wettest period. The area has a warm, humid climate that is moderated by its proximity to the water bodies of West Bay and the Gulf of Mexico. The area has an average of 273 frost-free days. Periodic tropical hurricanes with significant physical and chemical influences are reasonably common during summer and early fall seasons. Due to the warm climate and abundance of rainfall, chemical and biological actions are rapid. The abundant rainfall leaches much of the nutrients from the sandy soils leaving them relatively infertile and acidic. Vegetation structure and composition have also been and remain influenced by these climatic factors.

4.2 Site

The interior sections of the larger project site represent nearly flat topography and basin depressions, which contain or are dissected by broad, sheet flow drainages and minor streams and strands. The majority of the project site hydrology exhibited low infiltration and slow water transmission. Hydrology is essentially vertical within many areas of the broader flats. Depth to seasonally high water table is generally within the surface 6 inches. During periods of seasonal or heavy precipitation, surface water frequently stands above the subsoil strata and inundates the surface soil matrix for extended periods of time. Surface drainage is generally low due to the extent of topographic gradients less than 1%. Conspicuous landscape drainages are evident on current and historical 1942 aerial photographs involving the tidally influenced Botheration Bayou flowing to the northwest, Johnson and Little Johnson Bayou to the northeast and an unnamed tertiary creek flowing to Shell Point in the east. As well, during droughts and seasonal drier periods, ground water is unobtainable and below the subsoil levels. Plant and soil communities are under heavy stress from saturation during wet seasons and from dehydration during dry seasons. This change can often occur with rapid frequency during the year.

The soils on the tract consist of beds of sandy and loamy materials that were transported and deposited by waters of the Gulf, which covered the area a number of times during the Mio-Pleistocene Epochs. Sediments were eroded and reworked to form this marine terrace caused by changes in sea level and level plain topography. The dominant geological materials are inert. The sands are almost pure quartz and highly resistant to weathering. The difference in the soils occurring on the tract resulted from periodic deposition over time, site topography and broad landscape drainage, high soils water table, the influences of silt and organic material accumulations, chemical translocation and salt accumulations and mineral leaching. Soils of the tract are deeply underlain by Suwannee Limestone.

Naturally occurring fire events maintained the integrated mosaic of vegetation communities and ecotypes that influenced and defined the biotic composition of the project site and surrounding landscape. The variation within the landscape, resulting from soil composition and topography, occasioned the development of persistent vegetation types and regular, periodic fire established or maintained mesic pine flatwood, hydric pine flatwood, wet prairie, cypress swamp, mixed forested wetlands, palustrine marsh, and salt marsh vegetation communities. Historical aerial photographs from 1953 revealed that the project site was once a broad wet prairie and cypress flat landscape mosaic containing scattered clusters of slash and longleaf pines on higher ground (as islands or low ridges), strands of pond cypress along incipient streams, mixed hardwood and shrub depression swamps and peripheral salt marsh. Inclusive of salt marshes, small ponds and isolated depression wetlands, each of the vegetation communities existing within the BPMB landscape are fire dependent, fire maintained or fire influenced. Ecosystem integrity is dependent on the occurrence of regular fires. Fire frequency intervals, or return periodicity, probably occurred every two to four years, or possibly longer during wetter years.

5. Proposed Conditions

The planned mitigation and restoration efforts involve restoring the site to the pre-pine plantation/historical communities. Specifically, efforts entails the restoration[3] of approximately 4,170 acres of wetlands and 860 acres of uplands within the BPMB to the historical natural vegetation communities discussed below. Table A-3 presents the pre and post vegetation communities and acreages; To the extent possible, the rehabilitated BPMB will contain the indigenous vascular plant and wildlife species that are characteristic of these communities as they occur throughout the coastal counties of the region on similar soils and at similar elevations above sea level. To attain success, the rehabilitated communities will resemble reference communities with respect to life form distribution, vertical stratification, overall plant size, species abundance, and patterns of dominance, and will substantively conform to the descriptions below. The rehabilitation will concentrate on three levels of diversity: (1) landscape mosaic, (2) plant community structure, and (3) plant species composition.

This section provides a synopsis of the communities that are proposed for rehabilitation within the BPMB.

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[3] Terminology follows the Corps of Engineers' Regulatory Guidance Letter for Wetlands And Interagency National Wetlands Mitigation Action Plan, released 12/27/02. Restoration: The manipulation of the physical, chemical, or biological characteristics of a site with the goal of returning natural or historic functions to a former or degraded wetland. For the purpose of tracking net gains in wetland acres, restoration is divided into: a.) Re-establishment: The manipulation of the physical, chemical, or biological characteristics of a site with the goal of returning natural or historic functions to a former wetland. Re-establishment results in rebuilding a former wetland and results in a gain in wetland acres; and b.) Rehabilitation: The manipulation of the physical, chemical, or biological characteristics of a site with the goal of repairing natural or historic functions of a degraded wetland. Rehabilitation results in a gain in wetland function but does not result in a gain in wetland acres. Under FDEP's rules "Re-establishment" equals "Creation" and "Rehabilitation" equals "Enhancement."

Table A-3. Matrix of Existing to Post-Restoration Land

	Post-Restoration Land Use						
Existing FLUCFCS	**Cypress Flats**	**Hydric Pine Flatwoods**	**Mesic Pine Flatwoods**	**Palustrine Marsh**	**Roads**	**Mixed Forested Wetlands**	**Total**
Mesic Pine Flatwoods			2.6				2.6
Hydric Pine Plantation	1063.3	2,036.5		234.8		225.0	3,559.6
Mesic Pine Plantation	8.4	47.8	767.9	4.9			829.0
Cypress Swamp	113.3					129.4	242.7
Mixed Forested Wetland						107.9	107.9
Freshwater Marsh		37.2		127.9			165.1
Wet Prairie				34.0			34.0
Roads					90.5		90.5
Total (Acres)	**1185.0**	**2121.5**	**770.5**	**401.6**	**90.5**	**462.3**	**5,031.4**

The actual acreage of each type is less important than achieving a healthy, integrated mosaic of communities with approximately these percentages of component communities, as described below.

5.1 Hydric Pine Flatwoods

Hydric Pine Flatwoods occur as open forests of scattered pines with a dense ground cover of grasses, sedges, and forbs with patches of saw palmetto and low, hydrophytic shrubs. The understory, when present consists of irregular shrubby patches of tall shrubs and saplings. Hydric pine flatwoods occur on nearly level topography with poorly drained acidic sands, often overlaying hardpan or clay subsoil. This community type characteristically occurs as expansive seepage areas. The dominant canopy species is slash pine (*Pinus elliottii*). The community type and its species are fire dependent and similar to mesic pine flatwoods except for a longer hydroperiod and the increased presence of hydrophytic vegetation. Hydric pine flatwoods intergrade with and contain numerous inclusions of mesic pine plantation, wet prairie, cypress flats, mixed forested wetlands, and marshes. The historical photograph illustrates the ”pockmarked” landscape signature formed by the frequent occurrence of depressions and rises within the landscape.

Because of the historic land use as plantation the restored communities may retain some of the characteristic of bedding; however, these topographic disturbances will gradually erode to a level topography. It is likely that slightly different plant associations will be present on the beds and furrows, but groundcover shall be native and appropriate to the overall community and function to convey fire. In order to be determined successful, the bed and furrow topography shall not convey waters in such a way as to drain the site. Additionally, the bedding has disturbed the soils and as such there may be some differences between the restored site and reference communities, but soils shall exhibit hydric indicators and be trending toward a hydric condition.

5.2 Cypress Flats

Cypress flats, also termed wet prairie, herb bog, wet savannah, or grass-sedge savannah, are flat, poorly drained communities, which support a sparse and widely spaced canopy of pond

cypress (*Taxodium ascendens*) and occasionally swamp tupelo (*Nyssa biflora*), slash pines (*Pinus elliottii*) and other hydric trees. Characteristic species tolerate both flooding and extensive dry periods. Plant composition varies with soils, fire regime, and hydroperiod. The ground cover is dense, diverse, and species-rich, particularly with monocots. Beakrush species, and other members of the *Cyperaceae*, are dominant, abundant and prolific. Legumes are conspicuously absent but several showy vascular plants characterize cypress flats. Hydrophytic shrubs and trees are absent, widely scattered, or confined to the ground cover as coppice sprouts. Occasionally, isolated pines establish on sandy knolls with improved aeration and represent small distinctive and isolated flatwood "islands" within this community. In wetter areas, pond cypress, black gum, sweet bay, and red maple may establish as isolated patches or coppicing groups. Shrubs such as St. John's-wort and bayberry (*Myrica heterophylla*) are significant and rarely survive the frequent fires essential for the maintenance of this community. The community type and its species are fire dependent.

Soils are generally infertile, sandy loams with some clay component particularly in the lower profile. Where soils have a peaty sand in the upper soil horizon, the soils remain saturated during wet periods and maintain marginally wetter conditions during the growing season. Fire periodically reduces this peat substrate. The flat terrain prevents appreciable surface runoff and soils prohibit internal percolation. Hydrology is essentially vertical. Cypress flats commonly grade into hydric and mesic pine flatwoods, cypress swamps, mixed forested wetlands, and palustrine marsh.

Because of the historic land use as plantation the restored communities may retain some of the characteristic of bedding; however, these topographic disturbances will gradually erode to a level topography. It is likely that slightly different plant associations will be present on the beds and furrows, but groundcover shall be native and appropriate to the overall community and function to covey fire. In order to be determined to be successful, the bed and furrow topography shall not convey waters in such a way as to drain the site.

5.3 Palustrine Marsh

Also termed freshwater marsh, wet weather depressions, wet savannahs, and coastal wetlands, palustrine marsh is the open coastal community type consisting of grasses, rushes, sedges and hydrophytic herbs occurring interior to brackish marsh and extending as a transitional area from wet prairies and cypress flats (where terrestrially occurring), acid swamps and flatwood depressions or as other shallow depressions. Annual and perennial species tolerate and are adapted to a wide range of moisture conditions. On the other hand, inundation or flooding is too brief for aquatic plants to become established. Erect emergent herbs, a few hydrophytic shrubs, and recumbent and mat-forming herbs, all defined by water regime within the depression basin or the flat elevation gradient, represent the common life forms of this community. Species richness is moderate and is composed of species common to other wetland types, such as graminoid-dominated freshwater marshes that occupy shallow depressions in pine flatwoods (lacking titi and other woody shrubs) and wet prairies.

Soils are typically infertile, acidic, peaty sands. Fire is common during droughts and periodically burns through dense emergent vegetation, even over the water's surface. Fire, combined with the prolonged hydroperiod or inundations occurring in the typically terrestrial areas, prevents invasion of upland vegetation from other systems. Palustrine marsh communities converge with brackish marsh, acid and pond cypress swamps, and intergrade with wet prairies and sedge-dominated flatlands.

5.4 Mixed Forested Wetlands

Mixed forested wetlands on the BPMB project are typical of acid forested basin swamps (FNAI and FDNR 1990). Some of these swamps on site occur along drainages or streams, primarily in the south and southwest portions of the site. These swamps are evident in the 1942 aerial photos throughout the BPMB tract. In this ecosystem, pond cypress (*Taxodium ascendens*) and slash

pine (*Pinus elliottii*) are often an important component, as well as several broadleaf tree and shrub species tolerant of hydric conditions, such sweet bay (*Magnolia virginiana*), myrtle-leaf holly (*Ilex myrtifolia*), and swamp tupelo (*Nyssa biflora*). Community composition varies, with no single species or species group exhibiting canopy dominance and includes various combinations of these large and small tree species. Herbaceous cover is sparse and composed of sedges, ferns and minor grasses. These forested wetlands support low species richness (few species present) and express a similar composition from one swamp area to another. On-site, these systems tend to be bay-dominated swamps with a ubiquitous, but never dominant, canopy of slash pine and pond cypress.

Soils are infertile, strongly acidic, highly organic sands sometimes too often overlain with peat accumulations, supporting evergreen or semi-evergreen, hydrophytic shrubs, tree saplings, and woody vines. The soil is densely shaded, consistently waterlogged or shallowly inundated during the growing season and only occasionally dries during extended droughts.

Fires more often occur at the ecotones adjacent to fire-maintained communities (e.g., pine flatwoods and cypress flats) and influence the mixed forested wetlands with unequal intensities, leaving an uneven peaty substrate and allowing a few trees and shrubs to survive. Differentiation between fire-maintained communities and mixed forested wetlands is usually distinct and abrupt due to the lack of fine fuels within the acid swamp and the increased available hydrology. Titi-dominated edges serve as a buffer zone that protects the trees of the sweet bay-dominated interior areas from the fires that occasionally burn peripherally into these acid swamps.

The mixed forested wetland community type commonly grades into hydric pine flatwoods and cypress flats.

5.5 Mesic Pine Flatwoods

Mesic Pine Flatwoods occur as open forests of scattered pines with a moderate to dense ground cover of grasses (principally wiregrass) and forbs, with a low stratum of sometimes dense saw palmetto and other low shrubs. An understory is limited to a few shrubs and shrub oaks?). Mesic pine flatwoods occur on nearly level topography with moderately to poorly drained acidic sands, often overlaying hardpan or clay subsoil. The dominant canopy species is usually slash pine or longleaf pine. Both pines may be present, but the occurrence of both together is restricted to second-growth pinewoods. The shrub species of the ground cover may be more conspicuous than the herbaceous species, except during the early period following a fire. The community type and its species are fire dependent.

Because of the historic land use as plantation the restored communities may retain some of the characteristic of bedding; however, these topographic disturbances will gradually erode to a level topography. It is likely that slightly different plant associations will be present on the beds and furrows, but groundcover shall be native and appropriate to the overall community and function to covey fire. In order to be determined to be successful, the bed and furrow topography shall not convey waters in such a way as to drain the site.

6. Restoration Implementation

6.1 Plan implementation

Restoration of the site generally entails conversion from a plantation land use through appropriate tree removal and restoring the primary abiotic processes that mold this type of landscape: hydrology and fire. Short-term activities will focus on hydrologic restoration and re-establishment of wetland communities. Restoration of a natural fire regime will help in restoring the vegetation and habitat dynamics of the site. Long-term management activities will continue to enhance the health and viability of the restored wetlands and to maintain the high ecological value of the restored ecosystem. Table A-4 presents the proposed restoration activities by target vegetation community and the associated acreages.

To ensure that the performance standards are met, an adaptive management approach will be an integral part of project implementation. If the Corps/FDEP decides, based on the selected performance standards and the annual monitoring reports, that the mitigation project is not meeting its goals, SJC will coordinate with the Corps/FDEP and professional ecologists to develop and implement remedial measures. SJC has set aside financial assurances to provide for such an effort.

The plan is divided into post-project community types with sections on proposed future conditions, thinning and clearing for community objectives, burning and hydrology.

6.1.1 Hydric Pine Flatwoods

Proposed Conditions. Hydric Pine Flatwoods occur as open forests of scattered pines with a dense ground cover of grasses, sedges, and forbs with patches of saw palmetto and low, hydrophytic shrubs. The understory, when present consists of irregular shrubby patches of tall shrubs and saplings. Hydric pine flatwoods occur on nearly level topography with poorly drained acidic sands, often overlaying hardpan or clay subsoil. This community type characteristically occurs as expansive seepage areas. The dominant canopy species on this site is slash pine (*Pinus elliottii*). The community type and its species are fire dependent and similar to mesic pine flatwoods except for a longer hydroperiod and the increased presence of hydrophytic vegetation. Hydric pine flatwoods intergrade with and contain numerous inclusions of mesic pine plantation, wet prairie, cypress flats, mixed forested wetlands, and fresh and salt water marshes. The historical photograph illustrates the ”pockmarked” landscape signature formed by the frequent occurrence of depressions and rises within the landscape.

Existing Conditions. Hydric pine plantation, mesic pine plantation, and freshwater marsh.

Acreage. 2,121.5 acres.

Restoration. Restoration of this community type will focus on canopy management, prescribed burning, and hydrologic restoration.

Canopy. The pines will be thinned to achieve a more typical flatwoods tree density, about 60 to 112 trees per acre (<25% cover) to achieve a basal area of 40 to 70 ft^2/acre. The removal of canopy trees will be done mechanically with typical logging equipment when site conditions warrant its use. During times when site conditions are not conducive to use of such equipment, other appropriate means will be used to remove the trees such that impacts to the substrate will not occur. In areas where the pines are too small to harvest, the site will be roller chopped and then the pines cut with a hydro-axe.

Burn Prescription. Growing season burns every 2 to 8 years (growing season is April through July based on James et al. (2003)). Initial years will be on a 2 to 4 year schedule to foster redevelopment of the ground cover. See Fire Management Plan (Attachment A-2).

Ground Cover. Plant species observations collected during field activities within the BPMB site indicate that sufficient species and individuals presently exist in the ground cover to regenerate the desired communities. Ground cover species are expected to seed in from surrounding areas and from the seed bank. The proposed prescribed fire should stimulate many dormant species in the ground cover seed bank. If after three years the species diversity and density are not clearly trending toward successful establishment of target conditions, then native sod plugs, seeding or plantings will be done.

Exotic Species Control. Chinese tallow (*Sapium sebiferum*) and cattail (*Typha latifolia*) were observed in several on-site wetlands and in roadside drainage ditches. Chinese tallow and cattails will be removed from the site during the first phases of the restoration.

Hydrology. The site will be roller chopped at periodic intervals to restore a more natural internal drainage pattern. The road and drainage network will be re-engineered to retain water on

portions of the site for longer periods of time, enhancing hydroperiod and hydrologic processes. Some minor expansion of wetland jurisdictional area may occur. Attachment A-9 and Exhibit A-1-7 shows the locations of the hydrologic work proposed at the BPMB. The activities planned for the site are installation of hardened low water crossings, equalizer culverts, modification of existing drainage culverts and ditches (Exhibit A-1-7). Surface and ground water level data and field-verification that the appropriate elevation has been set will be used to verify the invert elevations at each crossing. If the invert elevations of the structures are found to be too high or low, they will be manipulated based on the field data collection results during the first few years of the project. That data will be used to verify the final elevations for each structure. Those portions of the existing roadway network that will not be used as part of the proposed road and trail network may be leveled out to surrounding grade if necessary to restore the flow patterns, using appropriate erosion control measures to protect the adjacent waters and wetlands.

6.1.2 Cypress Flats

Proposed Conditions. Cypress flats, also termed wet prairie, herb bog, wet savannah, or grass-sedge savannah, are flat, poorly drained communities that support a sparse and widely spaced canopy of pond cypress (*Taxodium ascendens*) and occasionally swamp tupelo (*Nyssa biflora*), slash pines (*Pinus elliottii*), and other hydric trees. Characteristic species tolerate both flooding and extensive dry periods. Plant composition varies with soils, fire regime, and hydroperiod. The ground cover is dense, diverse, and species-rich, particularly with monocots. Beakrush species and other members of the *Cyperaceae* are dominant, abundant and prolific. Hydrophytic shrubs and trees are absent, widely scattered, or confined to the ground cover as coppice sprouts. Occasionally, isolated pines establish on sandy knolls with improved aeration and represent small distinctive and isolated flatwood “islands” within this community. In wetter areas, pond cypress, black gum, sweet bay, and red maple may establish as isolated patches or coppicing groups. The community type and its species are fire dependent.

Existing Conditions. Hydric pine plantation, mesic pine plantation, and cypress swamp.

Acreage. 1185.0 acres.

Restoration. Restoration of this community type will focus on canopy management, prescribed burning, and hydrologic restoration.

Canopy. Existing stands of pond cypress will be retained. Planted pines will be removed by thinning. In areas where the pines are too small to harvest, the site will be roller chopped and then the pines cut with a hydro-axe. The density goal for these systems is 5 to 20 trees per acre as a mix of pines and cypress (Haddock 2001). If pond cypress are not present or are under-represented to the extent that natural re-seeding is not expected to be effective, they will be planted randomly at a density of 50 trees per acre on irregular centers; trees will be 1-gallon size specimens.

Burn Prescription. Growing season burns every 2 to 8 years (growing season is April through July based on James et al. (2003)). Initial years will be on a 2 to 4 year schedule to foster redevelopment of the ground cover. See Fire Management Plan (Attachment A-2).

Ground Cover. Plant species observations collected during field activities within the BPMB site indicate that sufficient species and individuals presently exist in the ground cover to regenerate the desired communities. Ground cover species are expected to seed in from surrounding areas and from the seed bank. The proposed prescribed fire should stimulate many dormant species in the ground cover seed bank. If after three years the species diversity and density are not clearly trending toward successful establishment of target conditions, then native sod plugs, seeding or plantings will be done.

Exotic Species Control. Chinese tallow (*Sapium sebiferum*) and cattail (*Typha latifolia*) were observed in several on-site wetlands and in roadside drainage ditches. Chinese tallow and cattails will be removed from the site during the first phases of the restoration.

Hydrology. Where necessary, the site will be roller chopped at periodic intervals to restore a more natural internal drainage pattern. The road and drainage network will be re-engineered to retain water on the site for longer periods of time, restoring historical hydroperiod and hydrologic processes. Some minor expansion of wetland jurisdictional area may occur. Exhibit A-1-7 shows the locations of the hydrologic work proposed at the BPMB. The activities planned for the site are installation of hardened low water crossings, equalizer culverts, modification of existing drainage culverts and ditches (Exhibit A-1-7). Surface and ground water level data and field-verification that the appropriate elevation has been set will be used to verify the invert elevations at each crossing. If the invert elevations of the structures are found to be too high or low, they will be manipulated based on the field data collection results during the first few years of the project. That data will be used to verify the final elevations for each structure. Those portions of the existing roadway network that will not be used as part of the proposed road and trail network may be leveled out to surrounding grade if necessary to restore the flow patterns, using appropriate erosion control measures to protect the adjacent waters and wetlands.

6.1.3 Palustrine Marsh

Proposed Conditions. Also termed freshwater marsh, wet weather depressions, wet savannahs, and coastal wetlands, palustrine marsh is the open coastal community type consisting of grasses, rushes, sedges and hydrophytic herbs occurring interior to brackish marsh and extending as a transitional area from wet prairies and cypress flats (where terrestrially occurring), acid swamps and flatwood depressions or as other shallow depressions. These sites are often dominated by sawgrass (*Cladium jamaicense*). Annual and perennial species tolerate and are adapted to a wide range of moisture conditions. On the other hand, inundation or flooding is too brief for aquatic plants to become established. Species richness is moderate and is composed of species common to other wetland types, such as graminoid-dominated freshwater marshes that occupy shallow depressions in pine flatwoods (lacking titi and other woody shrubs) and wet prairies. Palustrine marsh communities converge with brackish marsh, acid and pond cypress swamps, and intergrade with wet prairies and sedge-dominated flatlands.

Existing Conditions. Hydric pine plantation, mesic pine plantation, freshwater marsh, and wet prairie.

Acreage. 401.6 acres.

Restoration. Restoration of this community type will focus on pine removal, prescribed burning, and hydrologic restoration.

Canopy. Pines will be removed mechanically with typical logging equipment when site conditions warrant its use. During times when site conditions are not conducive to use of such equipment, other appropriate means will be used to remove the trees such that impacts to the substrate will not occur. In areas where the pines are too small to harvest, the site will be roller chopped and then the pines cut with a hydro-axe.

Burn Prescription. Growing season burns every 2 to 4 years (growing season is April through July based on James et al. (2003)). See Fire Management Plan (Attachment A-2).

Ground Cover. Plant species observations collected during field activities within the BPMB site indicate that sufficient species and individuals presently exist in the ground cover to regenerate the desired communities. Ground cover species are expected to seed in from surrounding areas and from the seed bank. The proposed prescribed fire should stimulate many dormant species in the ground cover seed bank. If after three years the species diversity and density are not clearly trending toward successful establishment of target conditions, then native sod plugs, seeding or plantings will be done.

Exotic Species Control. Chinese tallow (*Sapium sebiferum*) and cattail (*Typha latifolia*) were observed in several on-site wetlands and in roadside drainage ditches. Chinese tallow and cattails will be removed from the site during the first phases of the restoration.

Hydrology. The site will be roller chopped at periodic intervals to restore a more natural internal drainage pattern. The road and drainage network will be re-engineered to retain water on the site for longer periods of time, restoring historical hydroperiod and hydrologic processes. Some minor expansion of wetland jurisdictional area may occur. Exhibit A-1-7 shows the locations of the hydrologic work proposed at the BPMB. The activities planned for the site are installation of hardened low water crossings, equalizer culverts, modification of existing drainage culverts and ditches (Exhibit A-1-7). Surface and ground water level data and field-verification that the appropriate elevation has been set will be used to verify the invert elevations at each crossing. If the invert elevations of the structures are found to be too high or low, they will be manipulated based on the field data collection results during the first few years of the project. That data will be used to verify the final elevations for each structure. Those portions of the existing roadway network that will not be used as part of the proposed road and trail network may be leveled out to surrounding grade if necessary to restore the flow patterns, using appropriate erosion control measures to protect the adjacent waters and wetlands.

6.1.4 Mixed Forested Wetlands

Proposed Conditions. Mixed forested wetlands on the BPMB project are typical of acid forested basin swamps (FNAI and FDNR 1990). Some of these swamps on site occur along drainages or streams, primarily in the south and southwest portions of the site. In this ecosystem, pond cypress (*Taxodium ascendens*) and slash pine (*Pinus elliottii*) are often an important component, as well as several broadleaf tree and shrub species tolerant of hydric conditions, such sweet bay (*Magnolia virginiana*), myrtle-leaf holly (*Ilex myrtifolia*), and swamp tupelo (*Nyssa biflora*). Community composition varies, with no single species or species group exhibiting canopy dominance and includes various combinations of these large and small tree species. Herbaceous cover is sparse and composed of sedges, ferns and minor grasses. These forested wetlands support low species richness (few species present) and express a similar composition from one swamp area to another. On-site, these systems tend to be bay-dominated swamps with a ubiquitous, but never dominant, canopy of slash pine and pond cypress. The mixed forested wetland community type commonly grades into hydric pine flatwoods and cypress flats.

Existing Conditions. Hydric pine plantation, cypress swamp, and mixed forested wetland.

Total Acreage. 462.3 acres.

Restoration. Restoration of this community type will focus on canopy management, prescribed burning, and hydrologic restoration.

Canopy. Excessive cover by shrubs will be suppressed and the development of an appropriate canopy stratum encouraged. If necessary to reduce shrub density and where soil conditions would allow use of the equipment, these wetlands will be partially cleared using the Gyro-Trac; otherwise hand clearing will be used. If pond cypress (*Taxodium ascendens*) or hardwoods such as *Nyssa sylvatica* var. *biflora*, are not present or are under-represented to the extent that natural re-seeding is not expected to be effective, they will be planted randomly at a density of 100 trees per acre on irregular centers; trees will be 1-gallon size specimens.

Burn Prescription. Fire will be allowed to burn in from surrounding communities from their prescribed burns. See Fire Management Plan (Attachment A-2).

Ground Cover. Plant species observations collected during field activities within the BPMB site indicate that sufficient species and individuals presently exist in the ground cover to regenerate the desired communities. Ground cover species are expected to seed in from surrounding areas and from the seed bank. The proposed prescribed fire should stimulate many dormant species in the ground cover seed bank. These areas are forested and should not need any planting

Exotic Species Control. Chinese tallow (*Sapium sebiferum*) and cattail (*Typha latifolia*) were observed in several on-site wetlands and in roadside drainage ditches. Chinese tallow and cattails will be removed from the site during the first phases of the restoration.

Hydrology. The site will be roller chopped at periodic intervals to restore a more natural internal drainage pattern. The road and drainage network will be re-engineered to retain water on the site for longer periods of time, restoring historical hydroperiod and hydrologic processes. Some minor expansion of wetland jurisdictional area may occur. Exhibit A-1-7 shows the locations of the hydrologic work proposed at the BPMB. The activities planned for the site are installation of hardened low water crossings, equalizer culverts, modification of existing drainage culverts and ditches (Exhibit A-1-7). Surface and ground water level data and field-verification that the appropriate elevation has been set will be used to verify the invert elevations at each crossing. If the invert elevations of the structures are found to be too high or low, they will be manipulated based on the field data collection results during the first few years of the project. That data will be used to verify the final elevations for each structure. Those portions of the existing roadway network that will not be used as part of the proposed road and trail network may be leveled out to surrounding grade if necessary to restore the flow patterns, using appropriate erosion control measures to protect the adjacent waters and wetlands.

6.1.5 Mesic Pine Flatwoods

Proposed Conditions. Mesic Pine Flatwoods occur as open forests of scattered pines with a moderate to dense ground cover of grasses (principally wiregrass) and forbs, with a low stratum of saw palmetto and other low shrubs. An understory is absent. Mesic pine flatwoods occur on nearly level topography with moderately to poorly drained acidic sands, often overlaying hardpan or clay subsoil. The dominant canopy species is usually slash pine or longleaf pine. Both species are present on this site. The shrub species of the ground cover may be more conspicuous than the herbaceous species, except during the early period following a fire. The community type and its species are fire dependent.

Existing Conditions. Mesic pine flatwoods and mesic pine plantation.

Total Acreage. 770.5 acres.

Restoration. Restoration of this community type will focus on canopy management, prescribed burning, and hydrologic restoration.

Canopy. Existing longleaf pines will not be cut. The planted pines will be thinned to achieve a more typical flatwoods tree density, about 60 to 112 trees per acre (<25% cover) to achieve a basal area of 40 to 70 ft^2/acre. The removal of canopy trees will be done mechanically with typical logging equipment when site conditions warrant its use. During times when site conditions are not conducive to use of equipment, other appropriate means will be used to remove the trees such that impacts to the substrate will not occur. In areas where the pines are too small to harvest, the site will be roller chopped and then the pines cut with a hydro-axe. Longleaf pines may be planted if needed to restore appropriate canopy cover.

Burn Prescription. Growing season burns every 2 to 8 years (growing season is April through July based on James et al. (2003)). Initial years will be on a 2 to 4 year schedule to foster redevelopment of the ground cover. See Fire Management Plan (Attachment A-2).

Ground Cover. Plant species observations collected during field activities within the BPMB site indicate that sufficient species and individuals presently exist in the ground cover to regenerate the desired communities. Ground cover species are expected to seed in from surrounding areas and from the seed bank. The proposed prescribed fire should stimulate many dormant species in the ground cover seed bank. If after three years the species diversity and density are not clearly trending toward successful establishment of target conditions, then native sod plugs, seeding or plantings will be done.

Exotic Species Control. Chinese tallow (*Sapium sebiferum*) and cattail (*Typha latifolia*) were observed in several on-site wetlands and in roadside drainage ditches. Chinese tallow and cattails will be removed from the site during the first phases of the restoration.

Hydrology. The site will be roller chopped at periodic intervals to restore a more natural internal drainage pattern. The road and drainage network will be re-engineered to retain water on the site for longer periods of time, restoring historical hydroperiod and hydrologic processes. Some minor expansion of wetland jurisdictional area may occur. Exhibit A-1-7 shows the locations of the hydrologic work proposed at the BPMB. The activities planned for the site are installation of hardened low water crossings, equalizer culverts, modification of existing drainage culverts and ditches (Exhibit A-1-7). Surface and ground water level data and field-verification that the appropriate elevation has been set will be used to verify the invert elevations at each crossing. If the invert elevations of the structures are found to be too high or low, they will be manipulated based on the field data collection results during the first few years of the project. That data will be used to verify the final elevations for each structure. Those portions of the existing roadway network that will not be used as part of the proposed road and trail network may be leveled out to surrounding grade if necessary to restore the flow patterns, using appropriate erosion control measures to protect the adjacent waters and wetlands.

Table A-4. BPMB Proposed Restoration Activities by Post Restoration Land Use

Polygon Category	Category Description	Acres	Planned Restoration Activities		
			Burn Prescription	Altering Canopy, Subcanopy	Planting
1	411 to Mesic Pine Flatwoods	2.6	Initial dormant season burn followed by a spring burn about 14 months later, then growing season burns every 2-8years. Initial years will be on a 2 to 4 year schedule.		
2	441H to Cypress Flats	1063.3	Initial dormant season burn followed by a spring burn about 14 months later, then growing season burns every 2-8years. Initial years will be on a 2 to 4 year schedule.	Remove planted pines.	Ground cover planting after 3 years, as needed to attain success criteria
3	441H to Hydric Pine Flatwoods	2,036.5	Initial dormant season burn followed by a spring burn about 14 months later, then growing season burns every 2-8years. Initial years will be on a 2 to 4 year schedule.	Thin pine canopy to ~25% cover	Ground cover planting after 3 years, as needed to attain success criteria
4	441H to Palustrine Marsh	234.8	Initial dormant season burn followed by a spring burn about 14 months later, then growing season burns every 2 to 4 years.	Remove all pines	Ground cover planting after 3 years, as needed to attain success criteria
5	441H to Mixed Forested Wetlands	225.0	Fire will be allowed to burn in from surrounding communities during prescribed burns.	Thin pine canopy to <25% cover.	Hardwoods (such as *Nyssa biflora*) and pond cypress (*Taxodium ascendens*)
6	441M to Cypress Flats	8.4	Initial dormant season burn followed by a spring burn about 14 months later, then growing season burns every 2-8years. Initial years will be on a 2 to 4 year schedule.	Remove planted pines	Pond cypress (*Taxodium ascendens*)

Table A-4. BPMB Proposed Restoration Activities by Post Restoration Land Use

Polygon Category	Category Description	Acres	Planned Restoration Activities		
			Burn Prescription	Altering Canopy, Subcanopy	Planting
7	441M to Hydric Pine Flatwoods	47.8	Initial dormant season burn followed by a spring burn about 14 months later, then growing season burns every 2-8years. Initial years will be on a 2 to 4 year schedule.	Thin pine canopy to ~25% cover	
8	441M to Mesic Pine Flatwoods	767.9	Initial dormant season burn followed by a spring burn about 14 months later, then growing season burns every 2-8years. Initial years will be on a 2 to 4 year schedule.	Thin pine canopy to ~25% cover	
9	441M to Palustrine Marsh	4.9	Initial dormant season burn followed by a spring burn about 14 months later, then growing season burns every 2 to 4 years.	Remove all pines	
10	621 to Cypress Flats	113.3	Initial dormant season burn followed by a spring burn about 14 months later, then growing season burns every 2-8years. Initial years will be on a 2 to 4 year schedule.		
11	621 to Mixed Forested Wetlands	129.4	Fire will be allowed to burn in from surrounding communities during prescribed burns.		Hardwoods (such as *Nyssa biflora*), if necessary
12	630 to Mixed Forested Wetlands	107.9	Fire will be allowed to burn in from surrounding communities during prescribed burns.	Remove all pines	None at this time.
13	641 to Hydric Pine Flatwoods	37.2	Initial dormant season burn followed by a spring burn about 14 months later, then growing season burns every 2-8years. Initial years will be on a 2 to 4 year schedule.	Not applicable.	Slash pine (*Pinus elliottii*) or longleaf pine (*Pinus palustris*), as appropriate
14	641 to Palustrine Marsh	127.9	Initial dormant season burn followed by a spring burn about 14 months later, then growing season burns every 2 to 4 years.	Not applicable	None at this time.
15	643 to Palustrine Marsh	34.0	Initial dormant season burn followed by a spring burn about 14 months later, then growing season burns every 2 to 4 years.	Not applicable.	None at this time.
16	814 to Roads	90.5	Not applicable.	Not applicable.	Not applicable.

6.2 Schedule

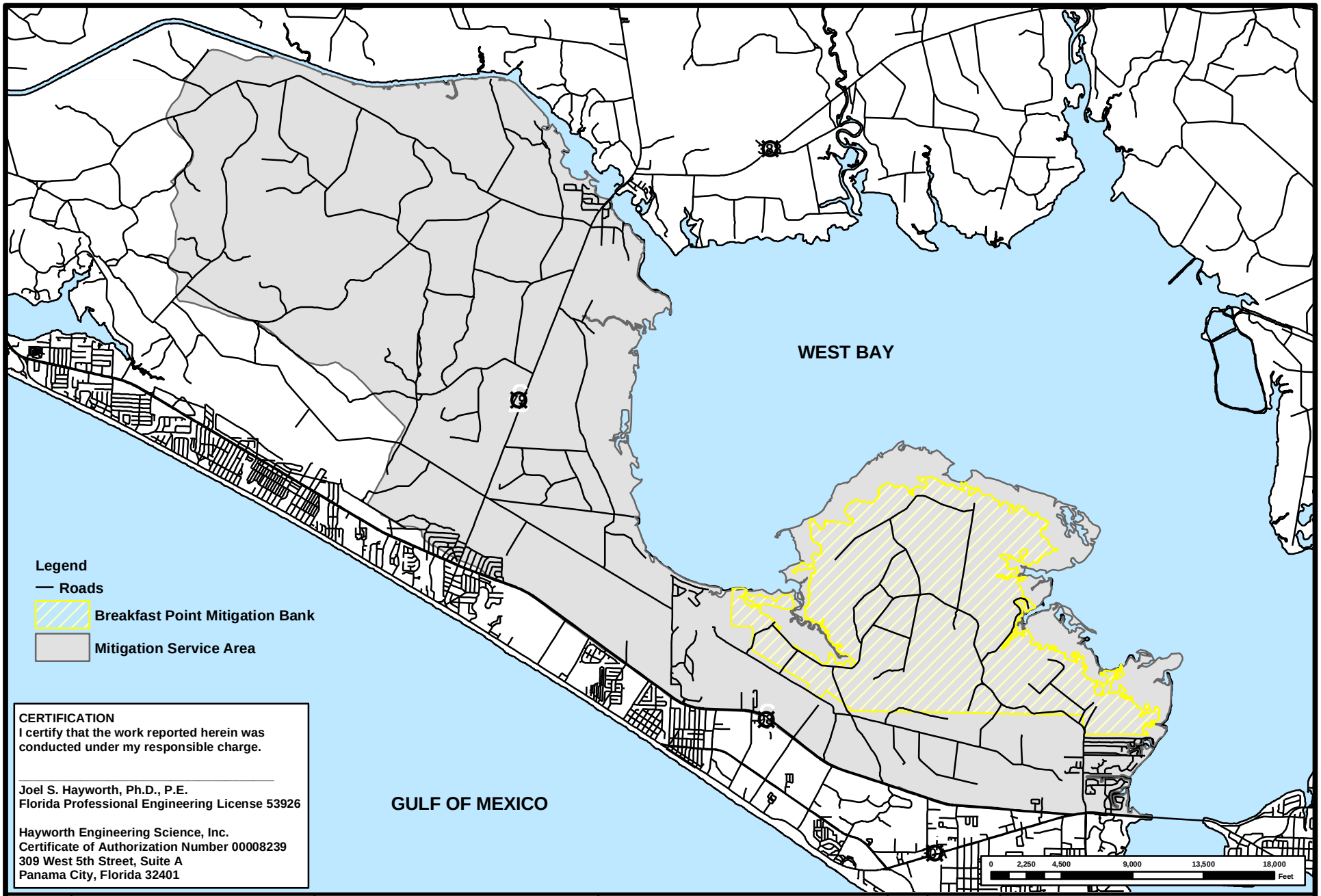
Restoration activities will be performed in phases, which are defined by geographical areas (Exhibit A-1-7) and would be stand-alone projects should the entire bank not be completed. Work begins on Phase 1 in year 1 with selective logging, shrub and brush removal, and initial burning, then installation of the hydrologic improvements and exotic control activities as detailed below. Other phases are anticipated to follow a similar schedule, with each successive phase being initiated on a yearly basis, as presented in the following table. However, the Sponsor, in consultation with the authorizing agencies, may elect to postpone the initiation of a phase. Conversely, the conservation easement and financial assurances may be implemented in advance of other implementation steps.

Table A-5. Schedule for Implementation of Restoration and Monitoring Activities

Phase	Task	Years							
		2004	2005	2006	2007	2008	2009	2010	2011
1	Financial Assurance & Conservation Easement		x						
1	Selective Logging\ Vegetation Removal		Mar-Oct	Mar-Oct	Mar-Oct	Mar-Oct	Mar-Oct	Mar-Oct	
1	Hazard Reduction Burn		Jan-March		Jan-March		Jan-March		
1	Photodocument Prescribed Burn		Jan - Dec		March-Dec		March-Dec		
1	Prescribed Burn		March-Sept		March-Sept		March-Sept		
1	Hydrologic Improvments				Jan-Dec	Jan-Dec	Jan-Dec	Jan-Dec	
1	Exotic Species Identification and Location		Sept-Dec	Sept-Dec	Sept-Dec	Sept-Dec	Sept-Dec	Sept-Dec	
1	BMP Development & Training for both BPMB & DSMB	Dec	Mar-Sept						
1	Exotic Control and Removal		Jan-Dec	Jan-Dec	Jan-Dec	Jan-Dec	Jan-Dec	Jan-Dec	
1	Establish Community Type Reference Sites/ Prepare Final Monitoring Plan for both BPMB &		Mar-Sept						
1	Establish Quantitative Vegetative Monitoring Transects	Sept-Dec							
1	Bi-Monthly Permit Compliance Inspections		Jan-Dec	Jan-Dec	Jan-Dec	Jan-Dec	Jan-Dec	Jan-Dec	
1	Annual Vegetative Monitoring	Sept-Dec	Sept-Dec	Sept-Dec	Sept-Dec	Sept-Dec	Sept-Dec	Sept-Dec	
1	Biannual Progress Report		Jan, July	Jan, July	Jan, July	Jan, July	Jan, July	Jan, July	
1	Annual Report		Jan	Jan	Jan	Jan	Jan	Jan	
1	Hydrologic Monitoring		Baseline Jan-Dec	Baseline Jan-Dec	Jan-Dec	Jan-Dec	Jan-Dec	Jan-Dec	
2	Financial Assurance & Conservation Easement		x						
2	Selective Logging\ Vegetation Removal		Mar-Oct	Mar-Oct	Mar-Oct	Mar-Oct	Mar-Oct	Mar-Oct	
2	Hazard Reduction Burn		Jan-March		Jan-March		Jan-March		
2	Photodocument Prescribed Burn		Jan - Dec		March-Dec		March-Dec		
2	Prescribed Burn		March-Sept		March-Sept		March-Sept		
2	Hydrologic Improvments				Jan-Dec	Jan-Dec	Jan-Dec	Jan-Dec	
2	Exotic Species Identification and Location		Sept-Dec	Sept-Dec	Sept-Dec	Sept-Dec	Sept-Dec	Sept-Dec	
2	Exotic Control and Removal		Jan-Dec	Jan-Dec	Jan-Dec	Jan-Dec	Jan-Dec	Jan-Dec	
2	Establish Quantitative Vegetative Monitoring Transects	Sept-Dec							
2	Bi-Monthly Permit Compliance Inspections		Jan-Dec	Jan-Dec	Jan-Dec	Jan-Dec	Jan-Dec	Jan-Dec	
2	Annual Monitoring	Sept-Dec	Sept-Dec	Sept-Dec	Sept-Dec	Sept-Dec	Sept-Dec	Sept-Dec	
2	Biannual Progress Report		Jan, July	Jan, July	Jan, July	Jan, July	Jan, July	Jan, July	
2	Annual Report		Jan	Jan	Jan	Jan	Jan	Jan	
2	Hydrologic Monitoring		Baseline Jan-Dec	Baseline Jan-Dec	Jan-Dec	Jan-Dec	Jan-Dec	Jan-Dec	
3	Financial Assurance & Conservation Easement			x					
3	Selective Logging\ Vegetation Removal		Mar-Oct	Mar-Oct	Mar-Oct	Mar-Oct	Mar-Oct	Mar-Oct	
3	Hazard Reduction Burn			Jan-March		Jan-March		Jan-March	
3	Photodocument Prescribed Burn		Feb	March-Dec		March-Dec		March-Dec	
3	Prescribed Burn			March-Sept		March-Sept		March-Sept	
3	Hydrologic Improvments				Jan-Dec	Jan-Dec	Jan-Dec	Jan-Dec	Jan-Dec
3	Exotic Species Identification and Location			Sept-Dec	Sept-Dec	Sept-Dec	Sept-Dec	Sept-Dec	Sept-Dec
3	Exotic Control and Removal			Jan-Dec	Jan-Dec	Jan-Dec	Jan-Dec	Jan-Dec	Jan-Dec
3	Establish Quantitative Vegetative Monitoring Transects	Sept-Dec							
3	Bi-Monthly Permit Compliance Inspections			Jan-Dec	Jan-Dec	Jan-Dec	Jan-Dec	Jan-Dec	Jan-Dec
3	Annual Monitoring	Sept-Dec		Sept-Dec	Sept-Dec	Sept-Dec	Sept-Dec	Sept-Dec	
3	Biannual Progress Report			Jan, July	Jan, July	Jan, July	Jan, July	Jan, July	Jan, July
3	Annual Report			Jan	Jan	Jan	Jan	Jan	Jan
3	Hydrologic Monitoring			Baseline Jan-Dec	Jan-Dec	Jan-Dec	Jan-Dec	Jan-Dec	Jan-Dec
4	Financial Assurance & Conservation Easement			x					
4	Selective Logging\ Vegetation Removal		Mar-Oct	Mar-Oct	Mar-Oct	Mar-Oct	Mar-Oct	Mar-Oct	
4	Hazard Reduction Burn			Jan-March		Jan-March		Jan-March	
4	Photodocument Prescribed Burn		Feb	March-Dec		March-Dec		March-Dec	
4	Prescribed Burn			March-Sept		March-Sept		March-Sept	
4	Hydrologic Improvments				Jan-Dec	Jan-Dec	Jan-Dec	Jan-Dec	Jan-Dec
4	Exotic Species Identification and Location			Sept-Dec	Sept-Dec	Sept-Dec	Sept-Dec	Sept-Dec	Sept-Dec
4	Exotic Control and Removal			Jan-Dec	Jan-Dec	Jan-Dec	Jan-Dec	Jan-Dec	Jan-Dec
4	Establish Quantitative Vegetative Monitoring Transects	Sept-Dec							
4	Bi-Monthly Permit Compliance Inspections			Jan-Dec	Jan-Dec	Jan-Dec	Jan-Dec	Jan-Dec	Jan-Dec
4	Annual Monitoring	Sept-Dec		Sept-Dec	Sept-Dec	Sept-Dec	Sept-Dec	Sept-Dec	
4	Biannual Progress Report			Jan, July	Jan, July	Jan, July	Jan, July	Jan, July	Jan, July
4	Annual Report			Jan	Jan	Jan	Jan	Jan	Jan
4	Hydrologic Monitoring			Baseline Jan-Dec	Jan-Dec	Jan-Dec	Jan-Dec	Jan-Dec	Jan-Dec

ATTACHMENT A-1 – EXHIBITS

Exhibit A-1-1	Location & Service Area Map
Exhibit A-1-2	2004 True Color Aerial Photograph Map
Exhibit A-1-3	Quad Topography Map
Exhibit A-1-4	Soils Map
Exhibit A-1-5	Existing Land Use and Land Cover
Exhibit A-1-6	Proposed Land Use and Land Cover
Exhibit A-1-7	Phases, Hydrologic and Vegetative Monitoring Locations
Exhibit A-1-8	Historic Aerial Photo, 1953
Exhibit A-1-9	Turbidity Details
Exhibit A-1-10	Existing Land Use and Land Cover (11x17 color)
Exhibit A-1-11	Proposed Land Use and Land Cover (11x17 color)

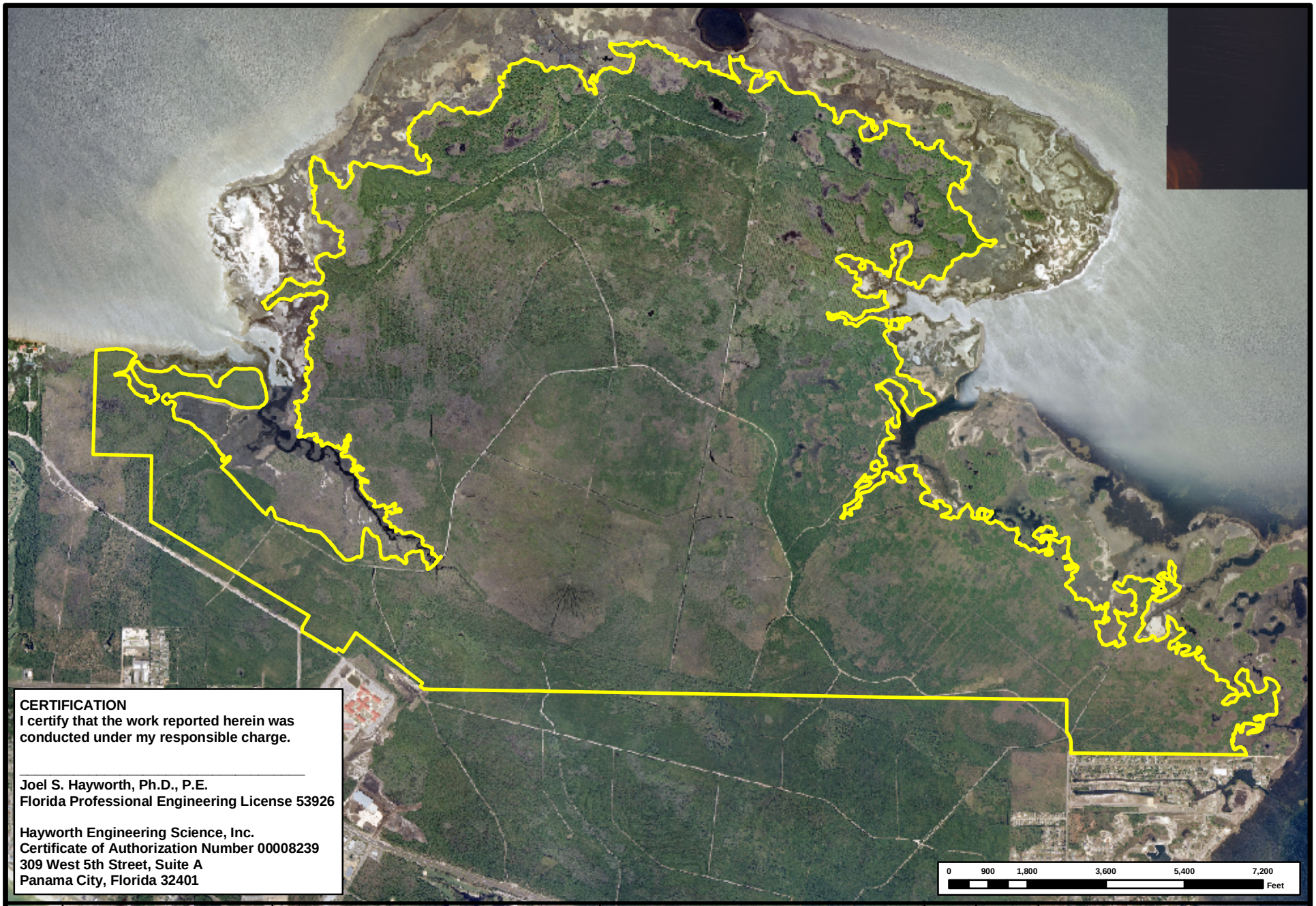


CERTIFICATION
I certify that the work reported herein was conducted under my responsible charge.

Joel S. Hayworth, Ph.D., P.E.
Florida Professional Engineering License 53926

Hayworth Engineering Science, Inc.
Certificate of Authorization Number 00008239
309 West 5th Street, Suite A
Panama City, Florida 32401

SCALE:	1 : 100000	Ecological Resource Consultants, Inc. / Hayworth Engineering Science, Inc.	LOCATION AND SERVICE AREA MAP	PROJECT:	BREAKFAST POINT MITIGATION BANK
DATE:	07/15/2005			CLIENT:	ST. JOE COMPANY
DRAWN BY:	JPB			PROJECT #:	04-310
SHEET #:	1 OF 9			EXHIBIT:	A-1-1



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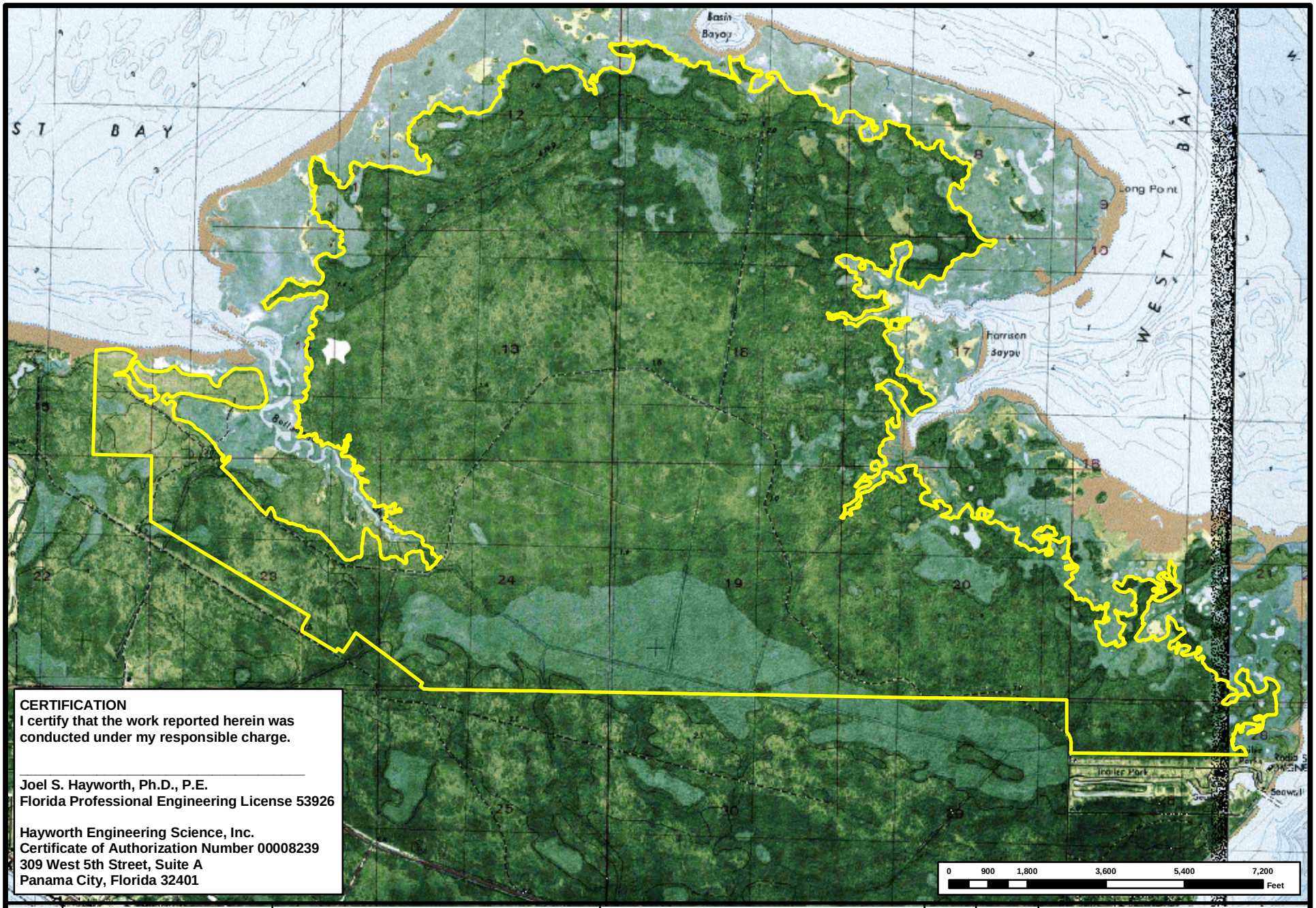
SCALE:	1" = 3000'
DATE:	07/15/2005
DRAWN BY:	JPB
SHEET #:	2 OF 9

Ecological Resource Consultants, Inc.

Hayworth Engineering Science, Inc.

2004 TRUE COLOR AERIAL PHOTOGRAPH MAP

PROJECT:	BREAKFAST POINT MITIGATION BANK
CLIENT:	ST. JOE COMPANY
PROJECT #:	04-310
EXHIBIT:	A-1-2



CERTIFICATION
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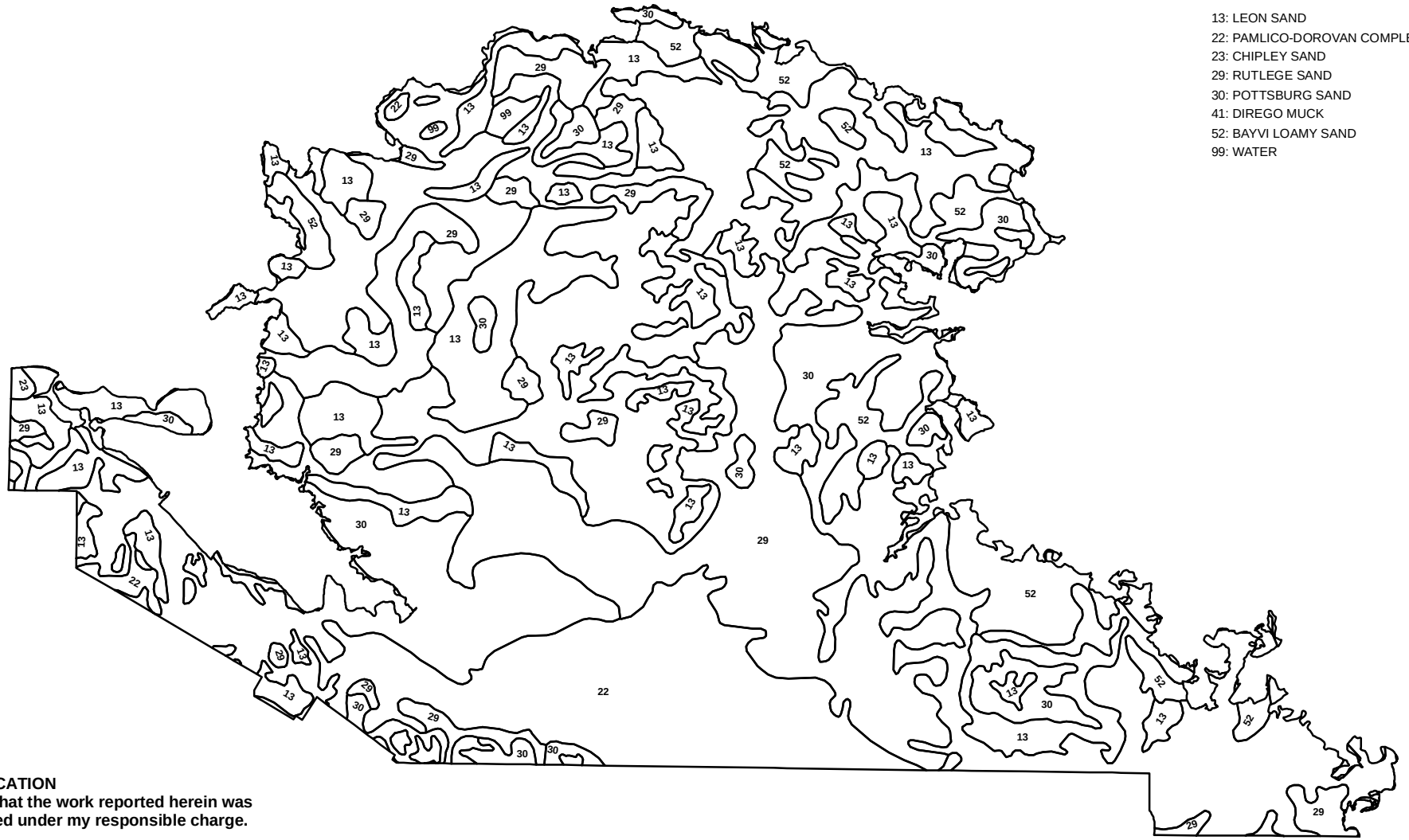
Panama City, Florida 32401

SCALE:	1" = 3000'	Ecological Resource Consultants, Inc. / Hayworth Engineering Science, Inc.	QUAD TOPOGRAPHY MAP	PROJECT:	BREAKFAST POINT MITIGATION BANK
DATE:	07/15/2005			CLIENT:	ST. JOE COMPANY
DRAWN BY:	JPB			PROJECT #:	04-310
SHEET #:	3 OF 9			EXHIBIT:	A-1-3



Legend

13: LEON SAND
22: PAMLICO-DOROVAN COMPLEX
23: CHIPLEY SAND
29: RUTLEGE SAND
30: POTTSBURG SAND
41: DIREGO MUCK
52: BAYVI LOAMY SAND
99: WATER

CERTIFICATION
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_____
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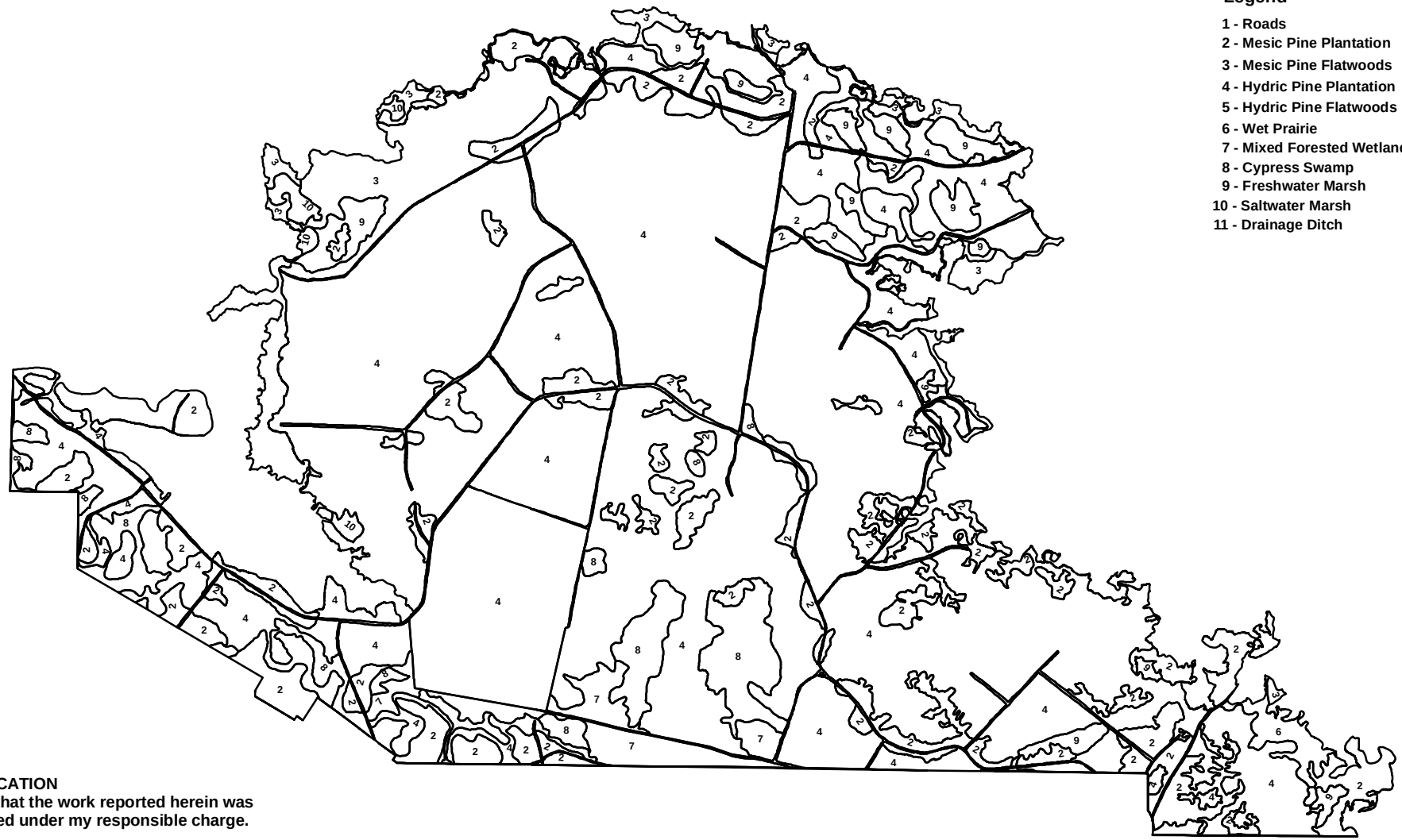
0 850 1,700 3,400 5,100 6,800 Feet

SCALE:	1" = 3000'	Ecological Resource Consultants, Inc. / Hayworth Engineering Science, Inc.	**SOILS MAP**	PROJECT:	BREAKFAST POINT MITIGATION BANK
DATE:	07/15/2005			CLIENT:	ST. JOE COMPANY
DRAWN BY:	JPB			PROJECT #:	04-310
SHEET #:	4 OF 9			EXHIBIT:	A-1-4



Legend

1 - Roads
2 - Mesic Pine Plantation
3 - Mesic Pine Flatwoods
4 - Hydric Pine Plantation
5 - Hydric Pine Flatwoods
6 - Wet Prairie
7 - Mixed Forested Wetland
8 - Cypress Swamp
9 - Freshwater Marsh
10 - Saltwater Marsh
11 - Drainage Ditch

CERTIFICATION
I certify that the work reported herein was conducted under my responsible charge.

_____
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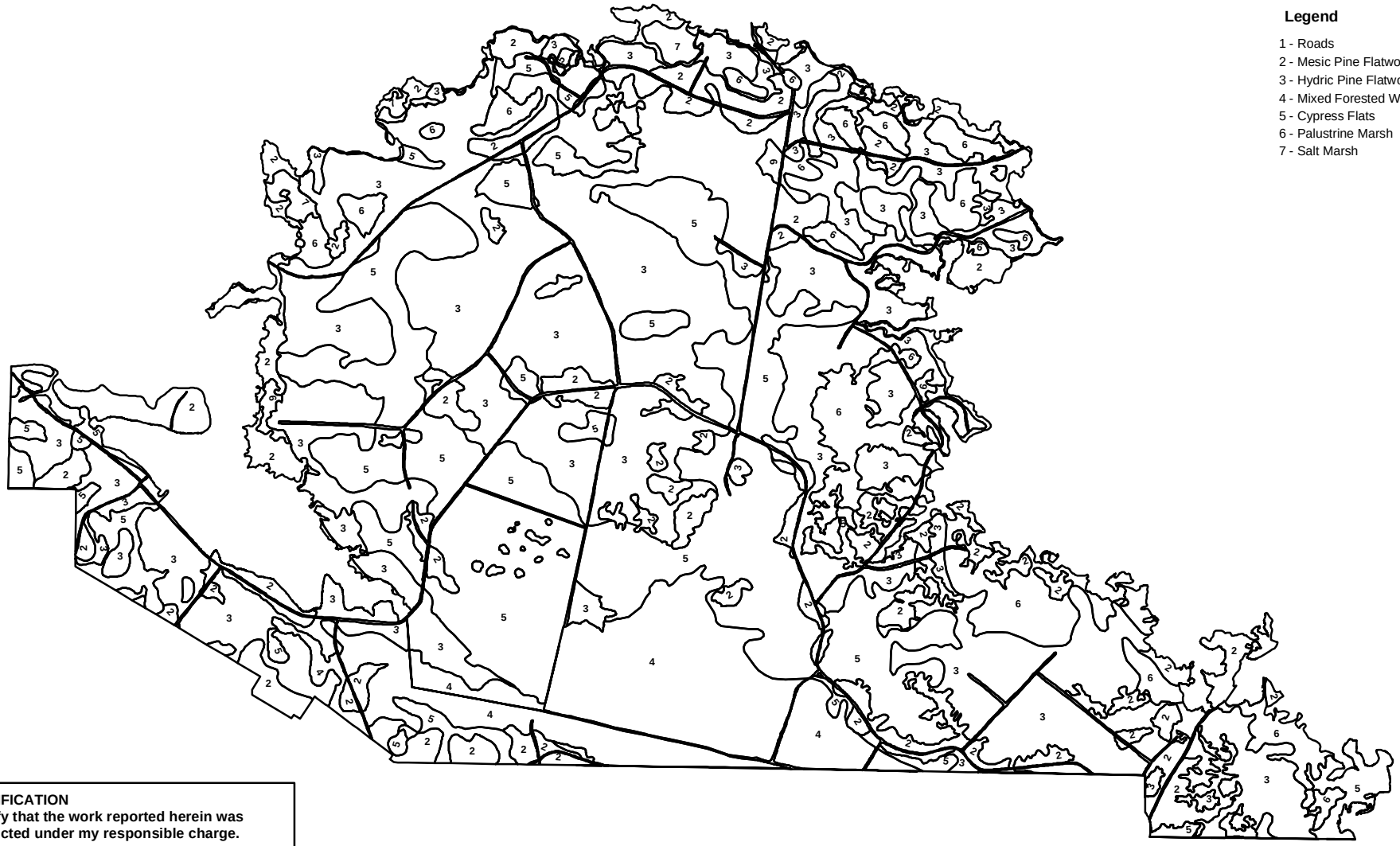
Florida Professional Engineering License 53926

Hayworth Engineering Science, Inc.
Certificate of Authorization Number 00008239
309 West 5th Street, Suite A
Panama City, Florida 32401

0 850 1,700 3,400 5,100 6,800 Feet

SCALE:	1" = 3000'	Ecological Resource Consultants, Inc. / Hayworth Engineering Science, Inc.	**EXISTING LAND USE AND LAND COVER**	PROJECT:	BREAKFAST POINT MITIGATION BANK
DATE:	07/15/2005			CLIENT:	ST. JOE COMPANY
DRAWN BY:	JPB			PROJECT #:	04-310
SHEET #:	5 OF 9			EXHIBIT:	A-1-5



Legend

1 - Roads
2 - Mesic Pine Flatwoods
3 - Hydric Pine Flatwoods
4 - Mixed Forested Wetland
5 - Cypress Flats
6 - Palustrine Marsh
7 - Salt Marsh

CERTIFICATION
I certify that the work reported herein was conducted under my responsible charge.

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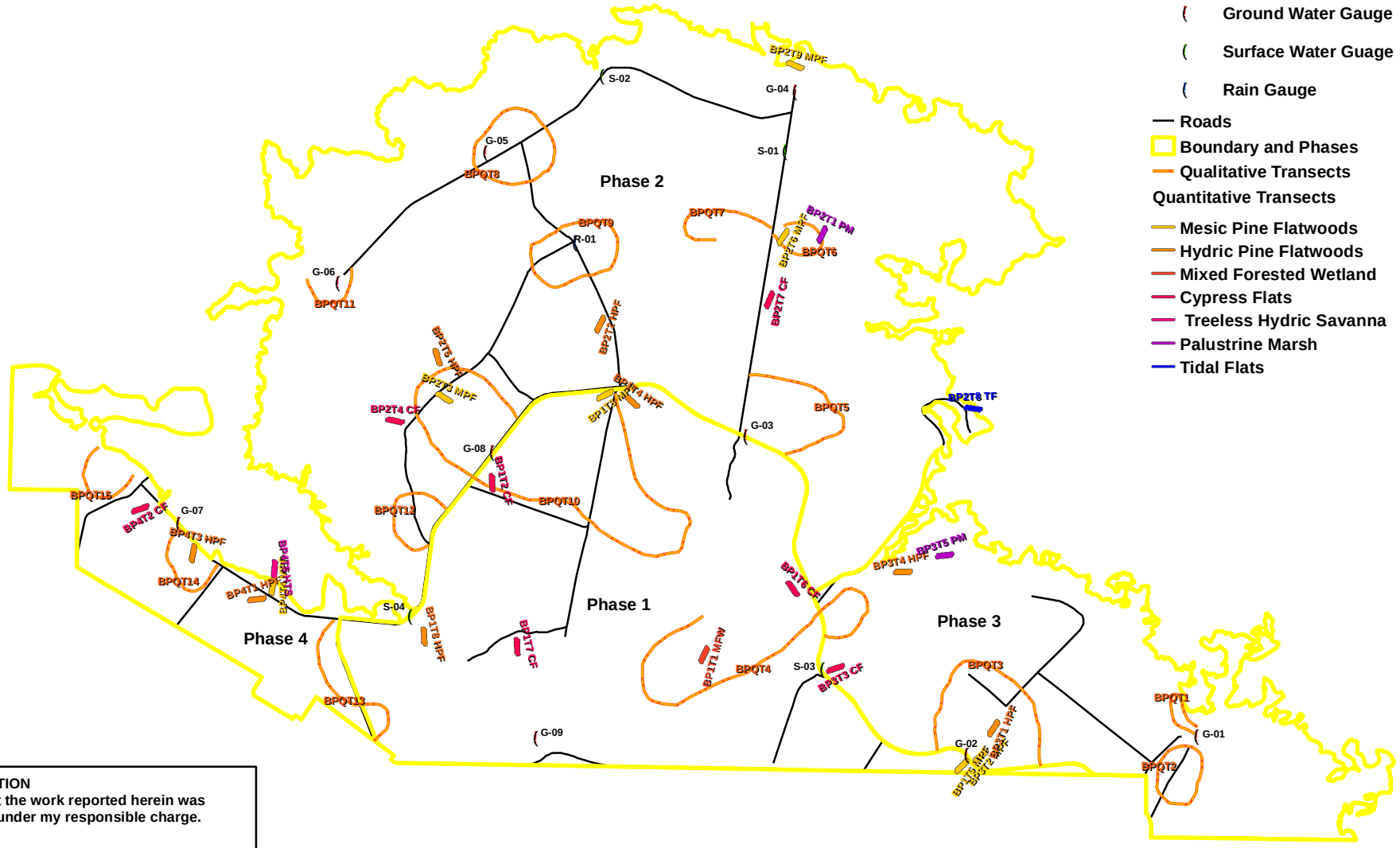
Hayworth Engineering Science, Inc.
Certificate of Authorization Number 00008239
309 West 5th Street, Suite A
Panama City, Florida 32401

0 800 1,600 3,200 4,800 6,400 Feet

SCALE:	1" = 3000'	Ecological Resource Consultants, Inc. / Hayworth Engineering Science, Inc.	PROPOSED LAND USE AND LAND COVER	PROJECT:	BREAKFAST POINT MITIGATION BANK
DATE:	07/15/2005			CLIENT:	ST. JOE COMPANY
DRAWN BY:	JPB			PROJECT #:	04-310
SHEET #:	6 OF 9			EXHIBIT:	A-1-6



CERTIFICATION
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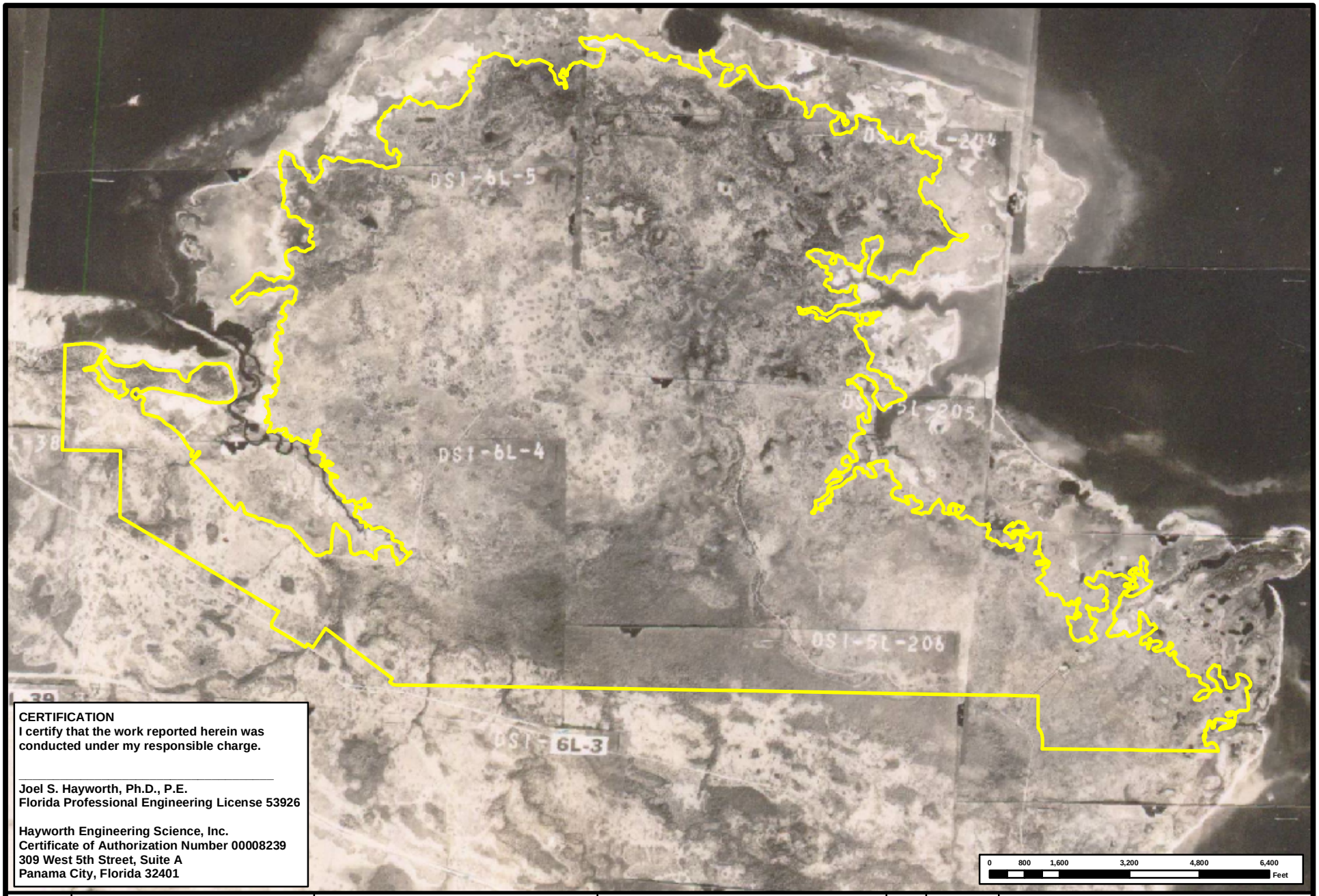
Florida Professional Engineering License 53926

Hayworth Engineering Science, Inc.
Certificate of Authorization Number 00008239
309 West 5th Street, Suite A
Panama City, Florida 32401

SCALE:	1" = 3000'	Ecological Resource Consultants, Inc. / Hayworth Engineering Science, Inc.	PHASES, HYDROLOGIC AND VEGETATIVE MONITORING LOCATIONS	PROJECT:	BREAKFAST POINT MITIGATION BANK
DATE:	07/15/2005			CLIENT:	ST. JOE COMPANY
DRAWN BY:	JPB			PROJECT #:	04-310
SHEET #:	7 OF 9			EXHIBIT:	A-1-7



CERTIFICATION
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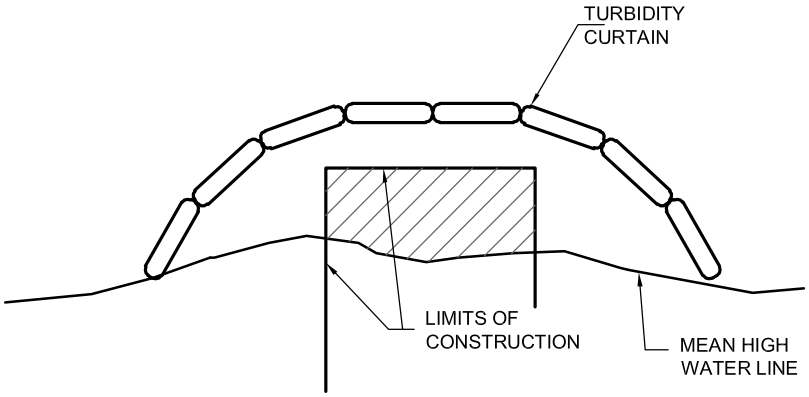
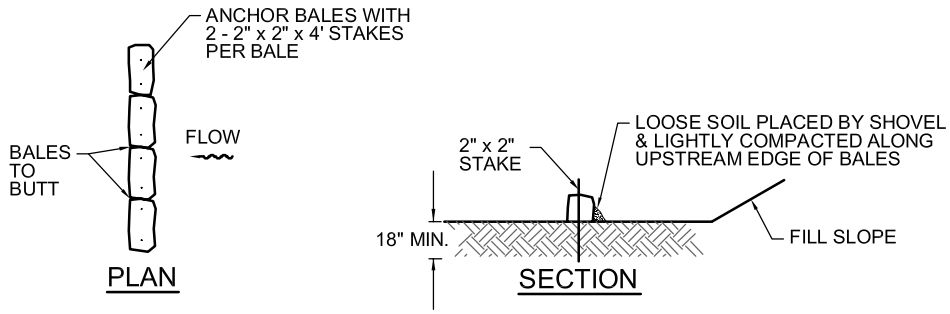
Joel S. Hayworth, Ph.D., P.E.
Florida Professional Engineering License 53926

Hayworth Engineering Science, Inc.
Certificate of Authorization Number 00008239
309 West 5th Street, Suite A
Panama City, Florida 32401

SCALE:	1" = 3000'	Ecological Resource Consultants, Inc. / Hayworth Engineering Science, Inc.	HISTORIC AERIAL PHOTO, 1953	PROJECT:	BREAKFAST POINT MITIGATION BANK
DATE:	07/15/2005			CLIENT:	ST. JOE COMPANY
DRAWN BY:	JPB			PROJECT #:	04-310
SHEET #:	8 OF 9			EXHIBIT:	A-1-8



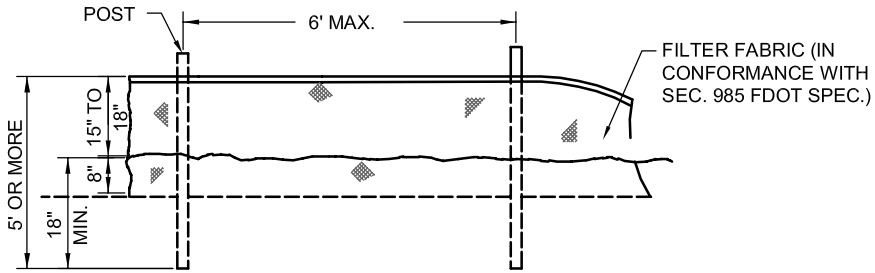
TYPICAL TURBIDITY CURTAIN



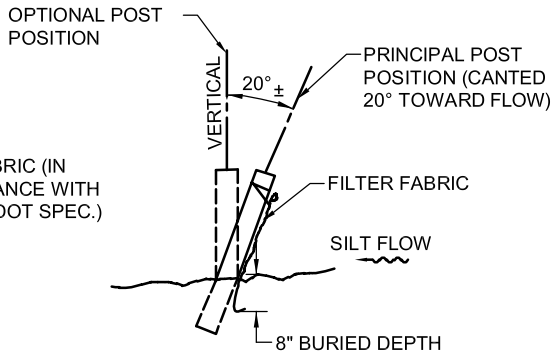
TYPICAL BALE SILT BARRIER

N.T.S.

NOTE:
TURBIDITY BARRIERS FOR FLOWING STREAMS AND TIDAL CREEKS MAY BE EITHER FLOATING OR STAKED TYPES OR ANY COMBINATIONS OF TYPES THAT WILL SUIT SITE CONDITIONS AND MEET EROSION CONTROL AND WATER QUALITY REQUIREMENTS.



ELEVATION



SECTION

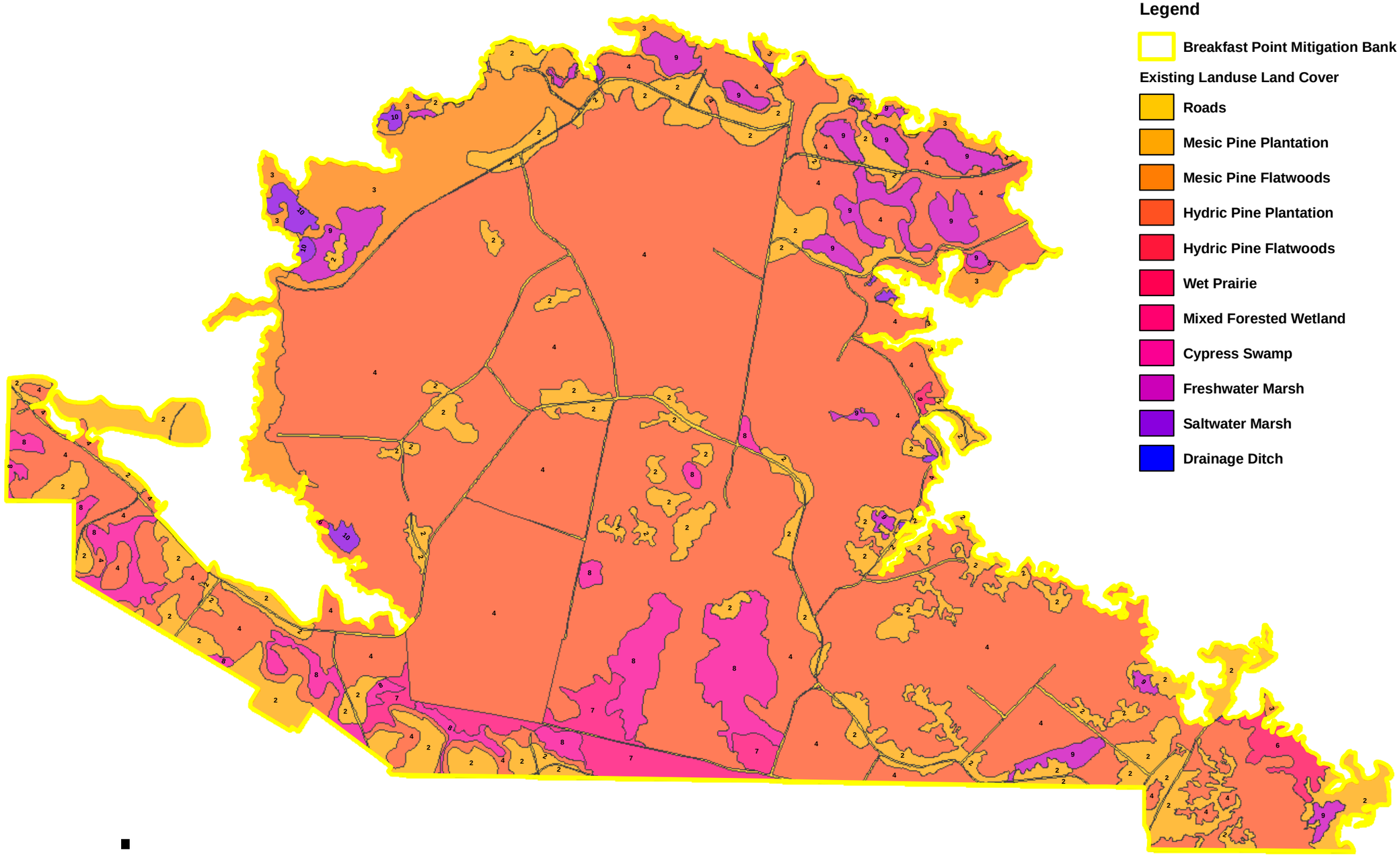
TYPICAL SILT FENCE

N.T.S.

CHRIS E. BROCKMEIER, P.E.
FLORIDA REGISTERED ENGINEER # 56859
WILSONMILLER, INC. FL. LICENSE #LC-C000170
WILSONMILLER, INC. CERTIFICATE # LB043

Feb 23, 2004 - 08:34:24 BBOURDIE|X:\Env\04108-BP\002\rev02\410800209.dwg

PROJECT NO. 04108-000-000	DATE: Feb. 2004	WilsonMiller Planners • Engineers • Ecologists • Surveyors • Landscape Architects • Transportation Consultants 1441 Maclay Commerce Drive, Suite 101•Tallahassee, Florida 32312•850-878-5001•850-878-5941 (F)•www.wilsonmiller.com	EXHIBIT A–1–9	PROJECT: BREAKFAST POINT MITIGATION BANK
DRAWN BY/EMP NO. WMB/1467	SCALE: N.T.S.			CLIENT: ST. JOE COMPANY
SHEET NUMBER: 9 OF 9	REVISION:			TITLE: TURBIDITY DETAILS



Legend

- Breakfast Point Mitigation Bank

Existing Landuse Land Cover

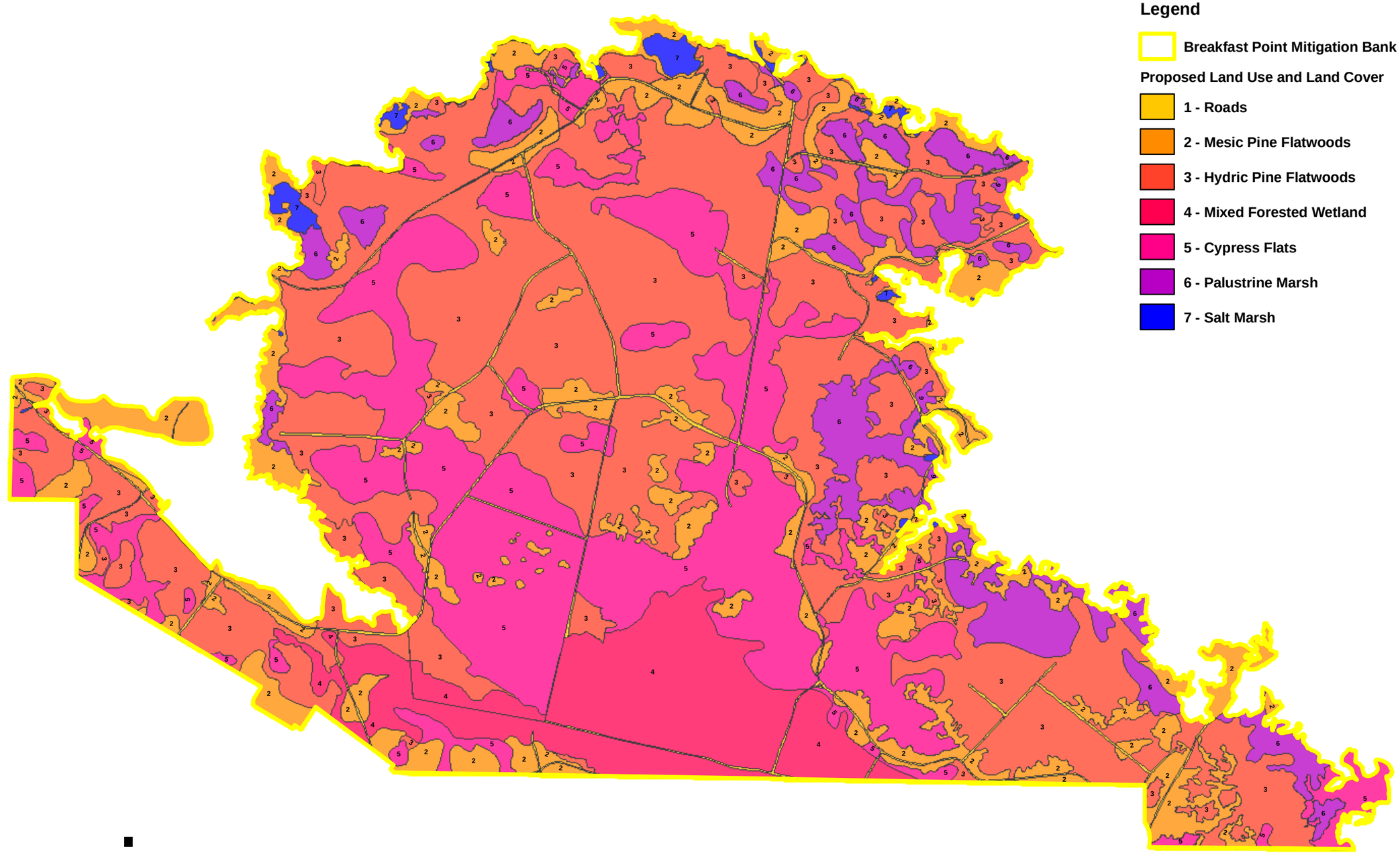
- Roads
- Mesic Pine Plantation
- Mesic Pine Flatwoods
- Hydric Pine Plantation
- Hydric Pine Flatwoods
- Wet Prairie
- Mixed Forested Wetland
- Cypress Swamp
- Freshwater Marsh
- Saltwater Marsh
- Drainage Ditch

1 inch equals 2,000 feet
1:24,000

EXHIBIT A-1-10

BREAKFAST POINT MITIGATION BANK
EXISTNG LAND USE AND LAND COVER

Ecological Resource Consultants, Inc.



Legend

- Breakfast Point Mitigation Bank

Proposed Land Use and Land Cover

- 1 - Roads
- 2 - Mesic Pine Flatwoods
- 3 - Hydric Pine Flatwoods
- 4 - Mixed Forested Wetland
- 5 - Cypress Flats
- 6 - Palustrine Marsh
- 7 - Salt Marsh

1 inch equals 2,000 feet
1:24,000

EXHIBIT A-1-11

BREAKFAST POINT MITIGATION BANK
PROPOSED LAND USE AND LAND COVER

Ecological Resource Consultants, Inc.

ATTACHMENT A-2 – FIRE MANAGEMENT PLAN

Ten burn prescriptions are included with this synopsis. The timing and objectives of fire are outlined in the prescription. Burning will occur predominantly during the growing season: growing season is March thru August. Generally, the restoration phase burns will occur during the growing season every two to four years. Fire will be allowed to burn into all wetland systems when conditions allow and when it would not result in a catastrophic situation.

The conditions of the prescription are intended to inhibit succession of woody species, promote fire-adapted species, and stimulate seed production of desirable herbs. Along with ecological considerations, the prescription has been specifically written to comply with Florida's open-burning laws and liability considerations. Preservation of life and property by safe implementation of prescribed fire is the primary consideration of the Prescribed Burn Manager.

General description of burn units

Ten burn units will be established for this project. The burn units are of a size that allows a more manageable application of fire than that of a large, single burn unit. Burns will be conducted in each unit when specific contingencies (listed below) for burn units have been met. Prescribed burns simulating natural fire events will be integral in restoring and maintaining the desired vegetative communities and ecotypes within the project site.

Primary resource objectives

The objective of this burn plan is to apply fire to the project area to facilitate replacement of planted pine community with several different vegetative communities including: hydric and mesic pine flatwoods, cypress swamp/flats, mixed forested wetland, and palustrine marsh. The burns are intended to mimic natural burn frequencies and the burn objectives are best described as ecological. The initial burns are intended to exhibit high intensity to consume standing biomass, kill woody vegetation and to encourage the growth of fire-dependent grasses and forbs. Later burns are intended to maintain the restoration, and further the long term ecological objectives of the mitigation plan. Burn coverage of 80% or more will be considered acceptable to restore and maintain these systems within the project area and is the criterion for which mitigation credits will be released.

Burn application contingencies

1. Burn units containing stands of merchantable timber will be thinned to the specifications in the mitigation bank thinning plan.
2. A fire line must be established along the common boundary of Unit 1 and the Bayside Trailer Park. Burning of Unit 1 is contingent upon the successful execution of an easement to Bayside Trailer Park for the fire line. If not obtained, a fire line must be established on the St. Joe side of the common boundary.
3. Unit 1 should be burned after units west of this unit. Burning will be conducted under *southeast winds* to avoid smoke management concerns with Bay County International Airport (4 miles east of unit).
4. A letter of permission from Gulf Coast Community College to St. Joe to conduct a burn on their property is required prior to burning. GCCC owns the northeast tip of Breakfast Point (Section 22 of Township 3 South – Range 15 West). This approval is expected, but if it is not received, a fire line must be established.
5. A fire line on the southeast boundary between Burn Unit 10 and the Arnold High School Parcel must be established prior to burning.
6. A fire line on the western boundary of Burn Unit 10 must be established prior to burning the unit completely. A road exists that can be used as a fire line to isolate the western end of the unit allowing the eastern portion to be burned provided the Arnold HS fire line is in place.

7. A letter of permission from the private land owner in the southwest corner (owner unknown) of burn Unit 10 is required prior to burning, otherwise additional fire lines will be needed.
8. A letter of permission from Florida DEP allowing St. Joe to burn state sovereign lands (marshes) is required prior to burning any coastal burn unit.
9. It must be determined that the bald eagle nest located in Unit 6C is not active before any restoration activities may be accomplished within a 750-foot radius of the nest. If the nest is active, then activities must be accomplished during the non-nesting season. In addition, aerial ignition will not be employed within Burn Unit 6C. It must be determined that smoke from a prescribed burn will not affect the bald eagle nest before burning within the secondary zone around the bald eagle nest during the nesting season.
10. Any naturally occurring fire or those fires that burn outside of prescription will be deemed 'wildfires'. Any ecological damage that results from extinguishing such fires shall be restored by the bank sponsor within two weeks of its occurrence.

Site preparation

Before conducting a prescribed burn in burn unit 6C, a radius of at least 10 feet around the bald eagle nest tree, more if burning to reduce woody growth, will be raked or mowed to prevent fire attacking the tree (USFWS 2003). Other methods that may be used to reduce risk to the tree include lightly scraping off loose bark from ground to breast height and performing a preparation burn around the nest tree before the rest of the burn unit is ignited (USFWS 2003).

[1] The USFWS concurs in their Biological Opinion (USFWS 2004) with the conservation measures described in the Biological Assessment for the bald eagle (*Haliaeetus leucocephalus*) nest within the BPMB (WilsonMiller 2004). As described in the BA, all restoration activities[, including burning,] within the primary zone (750-foot radius around the nest) will be performed outside the nesting season, and the non-nesting season will be determined by observing nest activity. Nesting season is typically October through May, depending on locality.

Roads and natural features were used to delineate ten units. A permanent firebreak that utilizes existing features will be maintained along the southern boundary (dragline ditch, road and swamp presently run along the southern boundary. In light of the ecological objectives of this management activity, disking will be utilized in lieu of plowing. Disking will cause minimal soil disturbance while exposing enough mineral soil to serve as a firebreak.

Safety considerations

Numerous safety zones are present including the internal loop road, a deep swamp on the south, and West Bay. All personnel present at the burn will carry Personal Protective Equipment (PPE). All radio communications will utilize plain language. Signs will be available for posting on U.S. Highway 98 in the event conditions cause low visibility on this roadway. All adjacent landowners will be contacted in writing at least thirty days prior to burn.

Prescription

The parameters below are included as an example. However, to insure compliance with Florida's open burn laws, event-specific prescriptions will be drafted and filed prior to each burn. The parameters identified in each prescription may differ from those listed below at the discretion and judgment of the Prescribed Burn Manager.

Burn schedule and chronology

The burn units will be burned on a two/four-year rotation. The growing season burns will be timed to insure maximum kill of woody species. All subsequent burns also will be growing season burns.

In the mitigation bank, the initial burn will be fired in eight burn units labeled in Figure 1. Burn unit boundaries utilize existing man-made and natural features which diminishes the need for additional fire lines. Expected removal of some of this infrastructure will eventually allow an uninterrupted landscape. Subsequent burns may occur in units different from those presented in this plan.

Chronology: To achieve the requirements of the mitigation bank authorization, the following chronology will be implemented:

Burn Unit 7, Burn Unit 6, Burn Unit 9, Burn Unit 8, Burn Unit 5, Burn Unit 3, Burn Unit 2, Burn Unit 4, Burn Unit 10, Burn Unit 1. Prescriptions for each burn unit are presented below. Fire lines and/or easements must be in place prior to burning Units 1 and 10

Prescription Unit 1 – 1474 acres

Parameter	Low	High
Temperature	55°	90°
Relative Humidity	40°	80°
Wind Direction	South-Southeast	South
Wind Speed (20' forecast)	5 mph	15 mph
Transport wind	10 mph	NA
Mixing Height	1640	NA
Dispersion Index (Day)	35	70
Burn method – **Aerial Ignition**	Backing	Strip Head

Prescription Unit 2 – 950 acres

Parameter	Low	High
Temperature	55°	90°
Relative Humidity	40°	80°
Wind Direction	Southwest	South
Wind Speed (20' forecast)	5 mph	15 mph
Transport wind	10 mph	NA
Mixing Height	1640	NA
Dispersion Index (Day)	35	70
Burn method – **Aerial Ignition**	Backing	Strip Head

Prescription Unit 3 – 368 acres

Parameter	Low	High
Temperature	55°	90°
Relative Humidity	40°	80°
Wind Direction	Southwest	South
Wind Speed (20' forecast)	5 mph	15 mph
Transport wind	10 mph	NA
Mixing Height	1640	NA
Dispersion Index (Day)	35	70
Burn method – **Aerial Ignition**	Backing	Strip Head

Prescription Unit 4 – 825 acres

Parameter	Low	High
Temperature	55°	90°
Relative Humidity	40°	80°
Wind Direction	SW to SE	South
Wind Speed (20' forecast)	5 mph	15 mph
Transport wind	10 mph	NA
Mixing Height	1640	NA
Dispersion Index (Day)	35	70
Burn method – **Aerial Ignition**	Backing	Strip Head

Prescription Unit 5 – 534 acres

Parameter	Low	High
Temperature	55°	90°
Relative Humidity	40°	80°
Wind Direction	Southwest	South
Wind Speed (20' forecast)	5 mph	15 mph
Transport wind	10 mph	NA
Mixing Height	1640	NA
Dispersion Index (Day)	35	70
Burn method – **Aerial Ignition**	Backing	Strip Head

Prescription Unit 6 – 363 acres

Parameter	Low	High
Temperature	55°	90°
Relative Humidity	40°	80°
Wind Direction	Southeast	South
Wind Speed (20' forecast)	5 mph	15 mph
Transport wind	10 mph	NA
Mixing Height	1640	NA
Dispersion Index (Day)	35	70
Burn method – Hand Ignition	Backing	Strip Head

Prescription Unit 7 – 781 acres

Parameter	Low	High
Temperature	55°	90°
Relative Humidity	40°	80°
Wind Direction	Southwest	South
Wind Speed (20' forecast)	5 mph	15 mph
Transport wind	10 mph	NA
Mixing Height	1640	NA
Dispersion Index (Day)	35	70
Burn method – **Aerial Ignition**	Backing	Strip Head

Prescription Unit 8 – 998 acres

Parameter	Low	High
Temperature	55°	90°
Relative Humidity	40°	80°
Wind Direction	SE to SW	South
Wind Speed (20' forecast)	5 mph	15 mph
Transport wind	10 mph	NA
Mixing Height	1640	NA
Dispersion Index (Day)	35	70
Burn method – **Aerial Ignition**	Backing	Strip Head

Prescription Unit 9 – 493 acres

Parameter	Low	High
Temperature	55°	90°
Relative Humidity	40°	80°
Wind Direction	SE to SW	South
Wind Speed (20' forecast)	5 mph	15 mph
Transport wind	10 mph	NA
Mixing Height	1640	NA
Dispersion Index (Day)	35	70
Burn method – **Aerial Ignition**	Backing	Strip Head

Prescription Unit 10 – 639 acres

Parameter	Low	High
Temperature	55°	90°
Relative Humidity	40°	80°
Wind Direction	Southwest	South
Wind Speed (20' forecast)	5 mph	15 mph
Transport wind	10 mph	NA
Mixing Height	1640	NA
Dispersion Index (Day)	35	70
Burn method – **Aerial Ignition**	Backing	Strip Head

Smoke management screening

This prescription has passed smoke screening provided wind prescriptions for each burn unit are employed. Based on fuel type and burn unit area (7,425 acres) a smoke sensitive radius of 5 miles is warranted. The Bay County International AirPort lies within the smoke sensitive radius. Prescriptions for the eastern burn units are sensitive to this feature.

Note: Burn objectives can be accomplished only under prescribed wind direction for each unit. Smoke screening can be cleared under all but northerly winds, which may reduce visibility on US Highway 98 and Panama City Beach. The timing of the burn is critical to ecological objectives and will be the over-riding parameter.

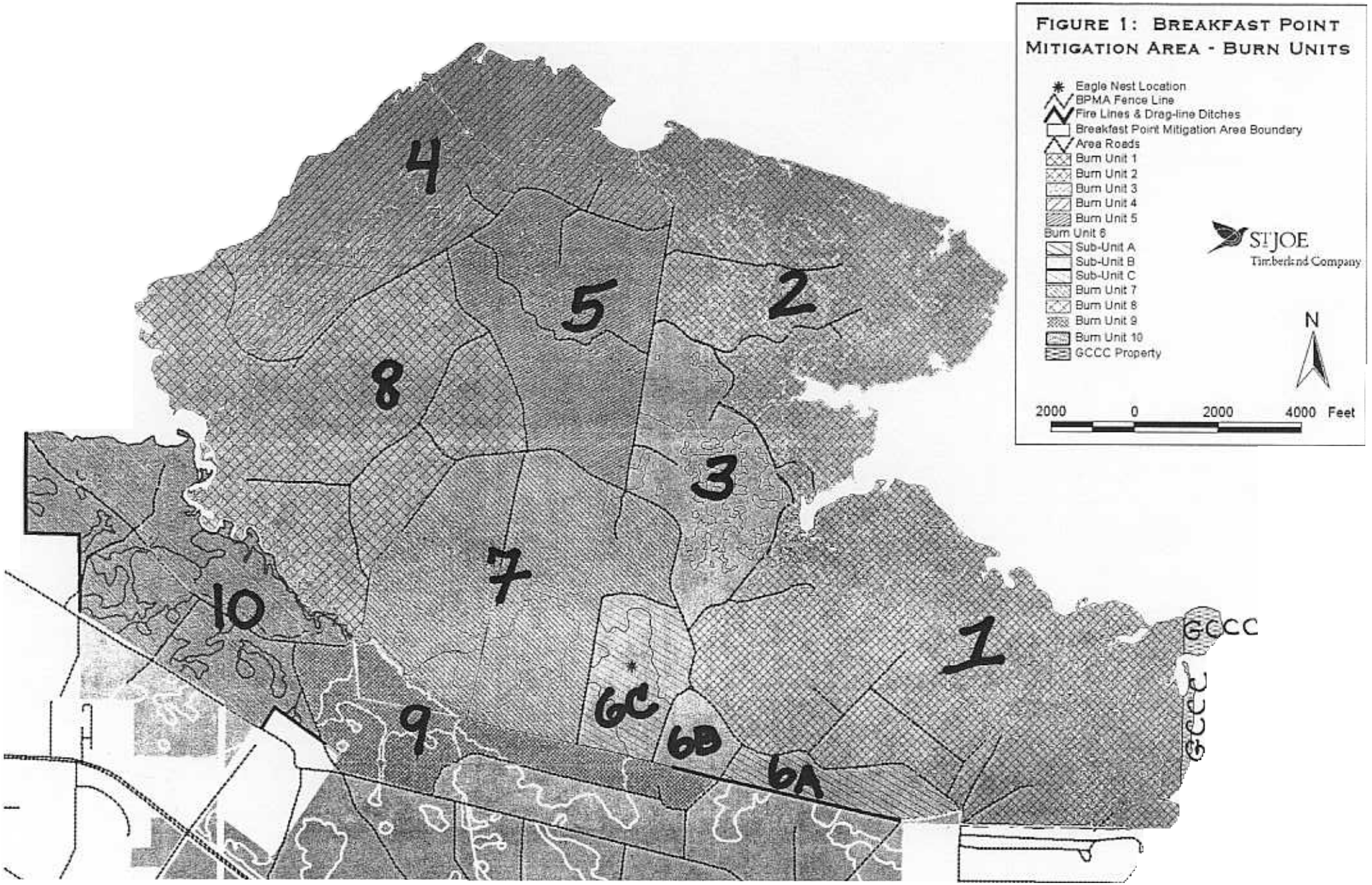


Figure 1: Breakfast Point Mitigation Area - Burn Units
Eagle Nest Location
BPMA Fence Line
Fire Lines & Drag-line Ditches
Breakfast Point Mitigation Area Boundary
Area Roads
Burn Unit 1
Burn Unit 2
Burn Unit 3
Burn Unit 4
Burn Unit 5
Burn Unit 6
Sub-Unit A
Sub-Unit B
Sub-Unit C
Burn Unit 7
Burn Unit 8
Burn Unit 9
Burn Unit 10
GCCC Property
ST JOE
Timberland Company
N
2000 0 2000 4000 Feet
4
5
2
8
3
7
10
1
9
6C
6B
6A
GCCC
GCCC

ATTACHMENT A-3 – SECURITY PLAN

The Breakfast Point Mitigation Bank is located in a densely populated location in Bay County. The area will be adequately posted and access controlled via the establishment and maintenance of security gates to reduce the threat of trespass.

Gates

All entrance roads will be gated to control access (Figure 1). Gates will be constructed of 4-inch steel channel, painted blaze orange, and equipped with reflective tape. Gates will be locked and access permitted for St. Joe staff and their contractors, agency representatives, and hunting lease members and their guests only. Security housing around locks will be used to reduce the threat of illegal entry into the area.

Gates will be monitored bi-weekly by hunt club members. Monitoring will be a condition of the hunting lease agreement. Hunt club members are required to contact St. Joe staff (850-234-2204) within 24 hours of discovering a breach in gate security. Security gate damage will be repaired immediately.

Signs

The area boundary will be adequately posted with the sign shown as Figure 2. Signs will be posted at each entry point. All designated roads will be posted with signs. Hunt clubs are responsible for placement of road signs. The condition of entry and road signs will be evaluated during bi-weekly security inspections by hunt club members. The inspection and evaluation of signs will be a condition of the hunting lease agreement. The same reporting protocol for gates also will apply for sign security checks.

No trespassing signs also will be posted around the 750’ perimeter of all active eagle nests.

Additional

All unauthorized persons, signs of trespassing, and/or signs of illegal activities or disturbances (e.g., dumping, off-road driving, disturbance of restoration areas, yahooing)observed by hunt club members within the mitigation bank must be reported to St. Joe staff (850-234-2204) within 24 hours of discovery.

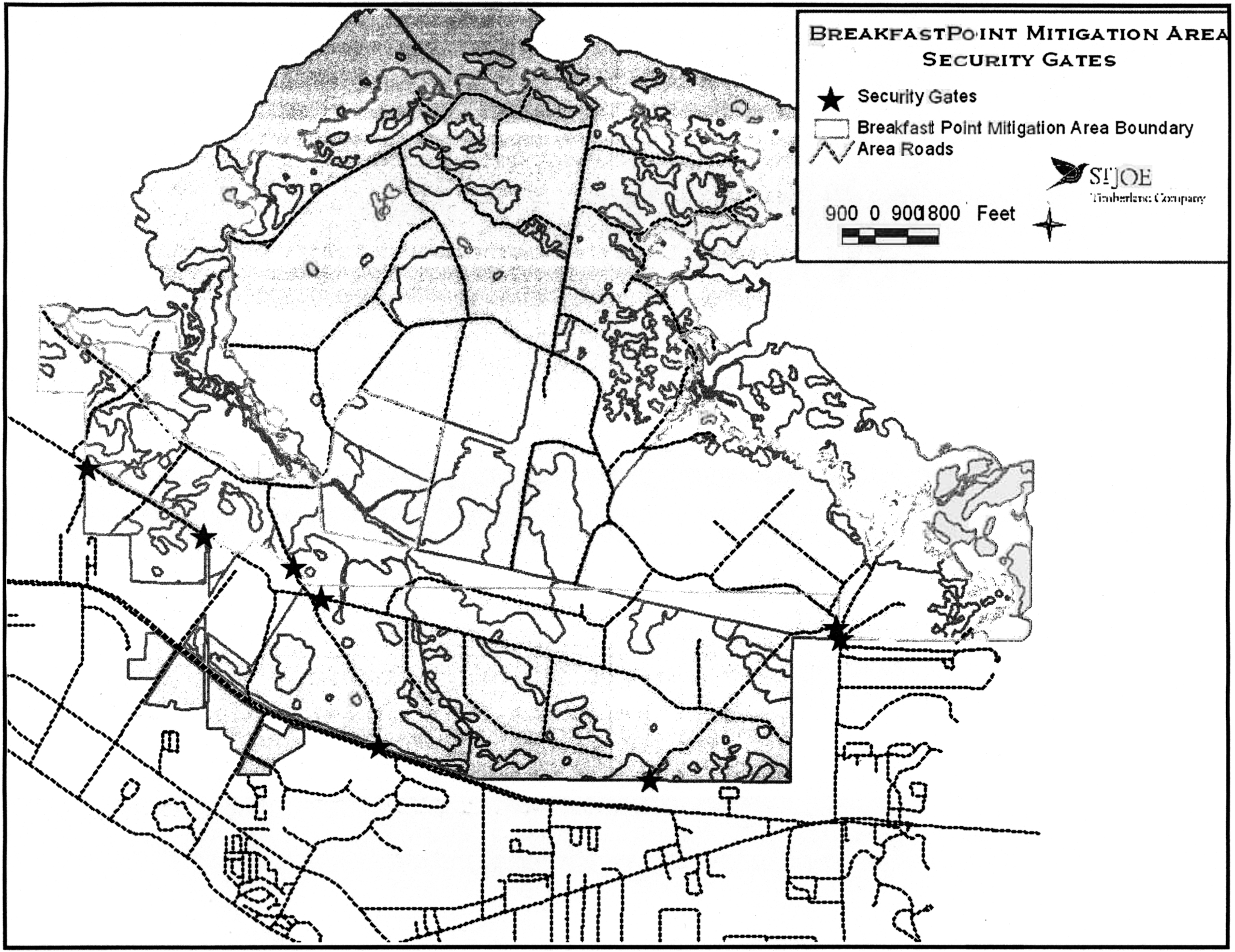

BreakfastPoint Mitigation Area
Security Gates
Security Gates
Breakfast Point Mitigation Area Boundary
Area Roads
ST JOE
Timberland Company
900 0 900 1800 Feet

Figure 2. Example of sign to be used to post boundary of Breakfast Point Mitigation Bank.

POSTED

Wetland mitigation and conservation area

FDEP Permit # 0227473-001
COE SAJ 2004-1865

NO TRESPASSSING

ATTACHMENT A-4 – MITIGATION CREDIT ANALYSIS

The ecological function and estimated environmental lift associated with the proposed restoration on the Breakfast Point Mitigation Bank (BPMB) property was assessed from spring to winter 2003. This assessment included site visits and several in-office sessions. The October 1998 operational draft of the Wetland Rapid Assessment Procedure (WRAP), as implemented within the RGP and EMA and at the proposed Panama City Airport site, was used to determine the functional value of wetlands at the bank. The "lift' associated with each type of ecological change was then calculated and is displayed below. The credits from that assessment were modified by the Mitigation Bank Site Suitability Index and adjusted for time lag and risk.

WRAP analysis.

The interagency Technical Team met numerous times and agreed on the following scoring scenario, which is further described below:

Master Credit Table: Expected Lift by Polygon Category:

Polygon *	Existing FLUCFCS Code	Proposed Land Use	Acres	Existing conditions score	With mitigation score	Lift from polygon worksheet	Mitigation Units (credits)
1a	Mesic Pine Flatwoods	Mesic Pine Flatwoods	2.3	0.82	1.00	0.00	0.00
2a	Hydric Pine Plantation	Cypress Flats	836.8	0.65	0.99	0.31	258.48
2b	Hydric Pine Plantation	Cypress Flats	35.4	0.65	0.92	0.27	9.62
3a	Hydric Pine Plantation	Hydric Pine Flatwoods	1,732.7	0.65	0.99	0.31	535.21
3b	Hydric Pine Plantation	Hydric Pine Flatwoods	275.5	0.65	0.92	0.27	74.84
4a	Hydric Pine Plantation	Palustrine Marsh	218.8	0.65	0.99	0.31	67.58
4b	Hydric Pine Plantation	Palustrine Marsh	0.0	0.65	0.92	0.27	0.00
5a	Hydric Pine Plantation	Mixed Forested Wetlands	182.0	0.65	0.99	0.31	56.22
5b	Hydric Pine Plantation	Mixed Forested Wetlands	31.4	0.65	0.92	0.27	8.53
6a	Mesic Pine Plantation	Cypress Flats	0.0	0.65	0.96	0.27	0.00
6b	Mesic Pine Plantation	Cypress Flats	6.9	0.65	0.92	0.27	1.87
7a	Mesic Pine Plantation	Hydric Pine Flatwoods	2.7	0.65	0.96	0.27	0.73
7b	Mesic Pine Plantation	Hydric Pine Flatwoods	44.4	0.65	0.92	0.27	12.06
8a	Mesic Pine Plantation	Mesic Pine Flatwoods	391.6	0.65	0.96	0.00	0.00
8b	Mesic Pine Plantation	Mesic Pine Flatwoods	275.7	0.65	0.92	0.00	0.00
9a	Mesic Pine Plantation	Palustrine Marsh	2.9	0.65	0.96	0.27	0.79
9b	Mesic Pine Plantation	Palustrine Marsh	1.7	0.65	0.92	0.27	0.46
10a	Cypress Flats	Cypress Flats	36.9	0.91	0.99	0.08	2.91
10b	Cypress Flats	Cypress Flats	56.0	0.91	0.99	0.08	4.42
11a	Cypress Swamp	Mixed Forested Wetlands	95.5	0.91	0.99	0.08	7.53
11b	Cypress Swamp	Mixed Forested Wetlands	27.2	0.91	0.99	0.08	2.15
12a	Mixed Forested Wetlands	Mixed Forested Wetlands	76.8	0.91	0.99	0.08	6.06

Polygon *	Existing FLUCFCS Code	Proposed Land Use	Acres	Existing conditions score	With mitigation score	Lift from polygon worksheet	Mitigation Units (credits)
12b	Mixed Forested Wetlands	Mixed Forested Wetlands	25.5	0.91	0.99	0.08	2.01
13a	Freshwater Marsh	Hydric Pine Flatwoods	36.7	0.91	0.99	0.08	2.90
14a	Freshwater Marsh	Palustrine Marsh	113.0	0.89	0.98	0.09	10.70
14b	Freshwater Marsh	Palustrine Marsh	6.2	0.89	0.98	0.09	0.59
15a	Wet Prairie	Palustrine Marsh	3.0	0.89	0.98	0.09	0.28
15b	Wet Prairie	Palustrine Marsh	28.7	0.89	0.98	0.09	2.72
16a	814	Roads	90.4	0.00	0.00	0.00	0.00
		Total	**4,636.7**				**1,068.66**

*Hydrologic lift will not occur on polygons labeled with a "b".

Existing conditions scores.

Existing condition scores for pine plantation were 0.65, the score assigned to “low quality” wetlands in the RGP/EMA.

Existing condition scores for non-pine plantation/other wetlands was scored at 0.91 and 0.89 for forested and herbaceous systems, respectively, based on the scoring done for “high quality” wetlands under the RGP/EMA process. The difference between forested and herbaceous scores is whether the canopy score is used.

The areas labeled mesic plantation were found to vary within the site as to whether they could be determined to be jurisdictional and therefore scored as wetland or upland. Since these areas were originally bedded, and since the mitigation plan is expected to result in certain of these areas being hydric, and in the interest of time, the agencies and sponsor agreed to score them as if they were “low quality” wetlands, as defined by the RGP/EMA at a 0.65. After considerable discussion, polygons of mesic pine plantation that are expected to remain in an upland condition after restoration were not assigned any lift.

The existing mesic pine flatwoods were scored like the “Billy Bob Rd. site, due to their similarity. These flatwoods are fire-suppressed and will benefit from restoration of fire.

Proposed conditions scores.

Proposed conditions were based on the “high quality” wetland scores developed for the RGP/EMA and scoring developed for the proposed Panama City Airport mitigation. Modifications were only made in those specific areas where no hydrologic lift was expected and hydrology was scored the same in the post-condition as the pre-condition. Restored pine plantation areas are expected to achieve an ultimate score of 0.96, while existing unplanted wetlands are expected to achieve a score of 0.98 or 0.99 depending on whether they are herbaceous or forested systems, respectively.

Mitigation Bank Siting Index

The Mitigation Bank Siting Index (MBSI) was developed by the interagency team that developed the “Green Book.” It is intended to measure the extent to which a mitigation bank site “fits” into its region and the degree to which it makes a permanent contribution to the regional ecology. The scoring resulted in a proposed value of 1.072 for BPMB (Attachment A-5) and is discussed below.

ESTABLISHED WATERSHED ISSUES: The mitigation bank will result in identifiable ecological benefits to established watershed issues recognized to be critical to the watershed of the Bank. West Bay is recognized as a critical system in the state and may have the highest biodiversity of

any estuary in Florida, and possibly further. Preservation and restoration of the ecosystem on Breakfast Point Peninsula will make a permanent and substantial positive effect on the bay. The site is identified as part of the West Bay Conservation Area. Score a “3”.

LANDSCAPE MOSAIC COMPATIBILITY: The ecological communities present at the mitigation bank site blend seamlessly with the adjacent native communities and that relationship is expected to remain in perpetuity. While the bank will be surrounded on three sides by conservation lands, its southern boundary is in an urban/suburban setting, so much of its perimeter is adjacent to developed or developing lands. Score a “1”.

THREATENED AND ENDANGERED SPECIES: Establishment of the mitigation bank improves the status of federal and/or state listed threatened or endangered species. After implementation the bank should foster the increase in populations of the listed plant species known to occur on the site. It should also foster an increase in populations of listed wading birds and possibly the red-cockaded woodpecker, flatwoods salamander and bald eagle. Score a “3”.

EXPANSION OF SCARCE HABITATS: The landscape contains ecological features considered to be unusual, unique or rare in the region and is of sufficient size. There is a paucity of coastal palustrine marsh and cypress flats in the region. The restoration of these systems will make a meaningful contribution to the long term ecological health of the region. Score a “3”.

ADJACENT LAND USES: The Bank will result in identifiable ecological benefits to adjacent lands or waters of regional importance such as State/National Park, State/National Forest, SWIM, OFW, AP, refuges and lands managed for conservation. West Bay is a SWIM water body. The adjacent Breakfast Point Peninsula CU and the bank site are identified as part of the West Bay Conservation Area. Score a “3”.

STRATEGIC HABITAT CONSERVATION AREA (SHCA): The Bank site is within or will result in identifiable benefits to the GAP analysis designating lands essential to providing the land base necessary to sustain populations in the future. There are no SHCA’s identified for this site. Because SHCA’s were based on existing data, data that may have resulted in designating this site within certain SHCA’s did not then exist. Score a “0”.

Time lag and risk

The team had a series of detailed discussions regarding time lag and risk assessment, which resulted in the following assessment.

To assess time lag and risk at BPMB, consideration was given to the fact that the bulk of the site is composed of herbaceous or open, prairie-like flatwoods communities where the tree cover is currently in place, but will be thinned to appropriate levels and that interim success criteria for these communities are quite specific. For the assessment below, the time lag and risk factors are assigned to the “real time” mitigation value associated with each individual credit release and the activity and criteria for that release.

At the time the conservation easement and financial assurances are in place, those credits have de minimus time and risk.

At the time logging and associated activities are conducted, a great deal of the mitigation ha been achieved, but a few years are needed for recovery from these impacts and there is a low risk that this activity will lead to unanticipated, poorer outcomes.

At the time burn credits are released, additional functional lift is achieved, and little time is needed for recovery, but there is a low risk that this activity will lead to unanticipated, poorer outcomes or impacts.

The hydrologic improvements are minor compared to the other outcomes and activities and are available at completion of construction without time lag or risk.

By the time year interim performance standards are met, mitigation has proceeded to establish appropriate ground cover so there is assurance that the site is heading the right way and mitigation is achieved at each level with de minimus time lag and risk.

Final phase and final bank success credit releases are adjusted for time lag to account for the remaining future community and tree maturation, and has de minimus risk for negative outcomes.

Credit Release Activity	Percent of credits	Time Lag	Risk	Time Lag x Risk
Record Conservation Easement, Financial Assurances	10.00%	1.00	1.00	1
Logging, Selective Clearing, Brush Reduction, Exotic Control	20.00%	.97	.85	0.825
Prescribed Burn	15.00%	1.00	.90	0.90
Hydrologic Improvements	5.00%	1.00	1.00	1
Performance Standards, Year 1 attained	10.00%	1.00	1.00	1
Performance Standards, Year 2 attained	10.00%	1.00	1.00	1
Performance Standards, Year 3 attained	10.00%	1.00	1.00	1
Performance Standards, Phase success attained	10.00%	.80	1.00	0.8
Performance Standards, Final attained	10.00%	.88	1.00	0.88
Total	100.00%			0.918

Note: time lag used the 62-345 F.A.C. (UMAM) tables, risk is basically percentage fractions at 0.05 increments

This table shows that, overall, the total adjustment to the potential credits at BPMB is 8.2%; therefore, for simplicity, all credits will be adjusted by this factor and will be considered fully adjusted for time lag and risk.

Total Potential Credits

Therefore, the total potential number of credits available at BPMB is:

Factor	Credits
WRAP scoring	1068.66
MBSI multiplier of 1.072	1145.60
Time Lag & Risk adjustment	0.918
Total Potential Credits	1051.66

ATTACHMENT A-5 – SITE SUITABILITY INDEX

PARAMETERS	SCORE
ESTABLISHED WATERSHED ISSUES: The mitigation bank will result in identifiable ecological benefits to established watershed issues recognized to be critical to the watershed of the Bank. Yes……3 No……0	**3**
LANDSCAPE MOSAIC COMPATIBILITY: The ecological communities present at the mitigation bank site blend seamlessly with the adjacent native communities and that relationship is expected to remain in perpetuity. Site will blend seamlessly on 95-100% of its perimeter……3 Site will blend seamlessly on 67-95% of its perimeter……2 Site will blend seamlessly on 25-66% of its perimeter……1 Site will blend seamlessly on <25% of its perimeter……0	**1**
THREATENED AND ENDANGERED SPECIES: Establishment of the mitigation bank improves the status of federal and/or state listed threatened or endangered species. Increases population of one or more listed species……3 Meets identified task within a recovery plan or provides protection to candidate species……2 Attracts species to the site……1 Maintains the status-quo……0	**3**
EXPANSION OF SCARCE HABITATS: The landscape contains ecological features considered to be unusual, unique or rare in the region and is of sufficient size. Yes……3 No……0	**3**
ADJACENT LAND USES: The Bank will result in identifiable ecological benefits to adjacent lands or waters of regional importance such as State/National Park, State/National Forest, SWIM, OFW, AP, refuges and lands managed for conservation. Yes……3 No……0	**3**
STRATEGIC HABITAT CONSERVATION AREA (SHCA): The Bank site is within or will result in identifiable benefits to the GAP analysis designating lands essential to providing the land base necessary to sustain populations in the future. Yes……3 No……0	**0**
TOTAL	**13**
MBSI = (TOTAL / MAXIMUM POSSIBLE) (0.1) + 1.0	**1.072**
WRAP Credits X MBSI =	**1145.60**

ATTACHMENT A-6 – LEDGER

Breakfast Point Mitigation Bank
Permit Number 0227473-001
February 26, 2004

FDEP Permit #	Date	Mitigation Credits Needed	Mitigation Credits Available	Mitigation Credits Remaining
0227473-001	xx	N/A	998.03	998.03

Assumptions:

- Low quality wetlands will be offset using a 0.65:1 ratio in the BPMB.
- High quality wetlands will be offset using a 0.92:1 ratio in the BPMB.
- On-site or within-conservation unit mitigation is not included here because it is planned on a per-project basis.

ATTACHMENT A-7 – DESIRABLE SPECIES LIST

Animal Species

Non-Comprehensive List of Potential Animal Species that Could Occur in the Breakfast Point Mitigation Bank

Common Name	Scientific Name	Federal Status*	State Status*
Acadian flycatcher	*Empidonax virescens*		
American alligator	***Alligator mississippiensis***	**T(S/A)**	**LS**
American bittern	*Botaurus lentiginosus*		
American coot	*Fulica americana*		
American woodcock	*Scolopax minor*		
Armadillo	*Didelphis marsupialis*		
Bachman's sparrow	*Aimophila aestivalis*		
Bald eagle	***Haliaeetus leucocephalus***	**LT**	**LT**
Barred owl	*Strix varia*		
Belted kingfisher	*Ceryle alcyon*		
Black racer	*Coluber constrictor priapus*		
Black skimmer	***Rhynchops niger***	**N**	**LS**
Black-bellied plover	*Pluvialis squatarola*		
Blue crab	*Callinectes sp.*		
Blue jay	*Cyanocitta cristata*		
Bluebird	*Sialia sialis*		
Blue-gray gnatcatcher	*Polioptila caerulea*		
Bluenose shiner	***Pteronotropis welaka***	**N**	**LS**
Blue-tailed mole skink	*Eumeces egregius lividus*		
Boat-tailed grackle	*Quiscalus major*		
Bobwhite quail	*Colinus virginianus*		
Box turtle	*Terrapene carolina*		
Broad-headed skink	*Eumeces laticeps*		
Bronze frog	*Rana clamitans*		
Brownheaded nuthatch	*Sitta pusilla*		
Carolina chickadee	*Poecile carolinensis*		
Carolina wren	*Thryothorus ludovicianus*		
Cedar waxwing	*Bombycilla cedrorum*		
Chain kingsnake	*Lampropeltis getulus getulus*		
Chorus frog	*Pseudacris nigrita*		
Chuck-will's widow	*Capromulgus carolinensis*		
Common grackle	*Quiscalus quiscala*		
Common ground dove	*Columbina passerina*		
Common snipe	*Gallinago gallinago*		
Cope's gray tree frog	*Hyla chrysoscelis*		
Cotton mouse	*Peromyscus gossypinus*		
Cotton rat	*Sigmodon hispidus*		
Cottonmouth	*Agkistrodon piscivorus*		
Crayfish	*Procambarus latipleureum*		
Crested flycatcher	*Myiarchus crinitus*		
Cricket frog	*Acris gryllus*		
Downy woodpecker	*Picoides pubescens*		
Dunlin	*Calidris alpina*		

Non-Comprehensive List of Potential Animal Species that Could Occur in the Breakfast Point Mitigation Bank

Common Name	Scientific Name	Federal Status*	State Status*
Eastern chipmunk	***Tamias striatus striatus***	**N**	**LS**
Eastern coachwhip	*Masticophis flagellum flagellum*		
Eastern cottontail	*Sylvilagus floridanus*		
Eastern garter snake	*Thamnophis sirtalis sirtalis*		
Eastern hognose snake	*Heterodon platirhinos*		
Eastern indigo snake	***Drymarchon corais couperi***	**LT**	**LT**
Eastern kingbird	*Tyrannus tyrannus*		
Eastern phoebe	*Sayornis phoebe*		
Eastern towhee	*Pipilo erythrophthalmus*		
Feral pig	*Sus scrofa*		
Fiddler crabs	*Uca sp.*		
Flatwoods Salamander	***Ambystoma cingulatum***	**LT**	**LS**
Florida black bear	***Ursus americanus floridanus***	**ce**	**LT****
Florida bog frog	***Rana okaloosae***	**N**	**LS**
Florida burrowing owl	***Speotyto cunicularia floridana***	**N**	**LS**
Florida gallinule	*Gallinula chloropus*		
Florida pine snake	***Pituophis melanoleucus mugitus***	**N**	**LS**
Florida ribbon snake	*Thamnophis sauritus*		
Florida sandhill crane	***Grus canadensis pratensis***	**N**	**LT**
Florida water rat	*Neofiber alleni*		
Fox squirrel	*Sciurus niger*		
Gopher frog	***Rana capito***	**N**	**LS**
Gopher tortoise	***Gopherus polyphemus***	**N**	**LS**
Gray catbird	*Dumetella carolinensis*		
Gray squirrel	*Sciurus carolinensis*		
Great blue heron	*Ardea herodias*		
Great egret	*Ardea alba*		
Great horned owl	*Bubo virginianus*		
Green heron	*Butorides virescens*		
Green snake			
Green tree frog	*Hyla cinerea*		
Hooded warbler	*Wilsonia citrina*		
House wren	*Troglodytes aedon*		
Island glass lizard	*Ophisaurus compressus*		
Killdeer	*Charadrius vociferous*		
King rail	*Rallus elegans*		
Leopard frogs	*Rana spenocephala*		
Limpkin	***Aramus guarauna***	**N**	**LS**
Little blue heron	***Egretta caerulea***	**N**	**SSC**
Little grass frog	*Pseudacris ocularis*		
Loggerhead shrike	*Lanius ludovicianus*		
Marsh rabbit	*Sylvilagus palustris*		
Meadowlark	*Sturnella magna*		
Mink	*Mustela vison*		
Mosquitofish	*Gambusia affinis*		
Mourning dove	*Zanaida macroura*		

Non-Comprehensive List of Potential Animal Species that Could Occur in the Breakfast Point Mitigation Bank

Common Name	Scientific Name	Federal Status*	State Status*
Mud turtle	*Kinosternon sp.*		
Nighthawk	*Chordeiles minor*		
Northern cardinal	*Cardinalis cardinalis*		
Northern flicker	*Colaptes auratus*		
Northern harrier	*Circus cyaneus*		
Northern mockingbird	*Mimus polyglottos*		
Northern scarlet snake	*Cemophora coccinea copei*		
Oak toad	*Bufo quercicus*		
Ornate chorus frog	*Pseudacris ornata*		
Osprey	***Pandion haliaetus***	**N**	**LS****
Palm warbler	*Dendroica palmarum*		
Panama City crayfish	***Procambarus econfinae***	**N**	**LS**
Parula Warbler	*Parula americana*		
Pileated woodpecker	*Dryocopus pileatus*		
Pine barrens treefrog	***Hyla andersonii***	**N**	**LS**
Pine warbler	*Dendroica pinus*		
Pinewoods tree frog	*Hyla femoralis*		
Prothonotary warbler	*Prothonotaria citrea*		
Pygmy rattlesnake	*Sisturus miliarius*		
Raccoon	*Procyon lotor*		
Red bellied woodpecker	*Melanerpes carolinus*		
Red headed woodpecker	*Melanerpes erythrocephalus*		
Red rat			
Red-cockaded woodpecker	***Picoides borealis***	**LE**	**LT**
Red-shouldered hawk	*Buteo lineatus*		
Red-tailed hawk	*Buteo jamaicensis*		
Red-winged blackbird	*Agelaius phoeniceus*		
River otter	*Lutra canadensis*		
Robin	*Turdus migratorius*		
Roseate spoonbill	***Ajaia ajaja***	**N**	**LS**
Scarlet king snake	*Lampropeltis triangulum elapsoides*		
Screech owl	*Otus asio*		
Short-tailed snake	*Stilosoma extenuatum*		
Snapping turtle			
Snowy egret	***Egretta thula***	**N**	**SSC**
Southeastern American kestrel	***Falco sparverius paulus***	**N**	**LT**
Southeastern pocket gopher	*Geomys floridana*		
Southern fence lizard	*Sceloporus unulatus*		
Southern hognose snake	*Heterodon simus*		
Southern leopard frog	*Rana utricularia*		
Southern spring peeper	*Hyla crucifer*		
Spotted skunk	*Spilogale putorius*		
Summer tanager	*Piranga rubra*		
Swallowtailed kite	*Elanoides forficatus*		
Swamp sparrow	*Melospiza georgiana*		
Tree swallow	*Tachycineta bicolor*		

Non-Comprehensive List of Potential Animal Species that Could Occur in the Breakfast Point Mitigation Bank

Common Name	Scientific Name	Federal Status*	State Status*
Tufted titmouse	*Parus bicolor*		
Turkey	*Meleagris gallopavo*		
Turkey vulture	*Cathartes aura*		
White ibis	***Eudocimus albus***	**N**	**LS**
White pelican			
White-breasted nuthatch	*Sitta carolinensis*		
White-eyed vireo	*Vireo griseus*		
White-tailed deer	*Odocoileus virginianus*		
Wood duck	*Aix sponsa*		
Wood stork	***Mycteria americana***	**LE**	**LE**
Yellow-billed cuckoo	*Coccyzus americanus*		
Yellow-breasted chat	*Icteria virens*		
Yellow-rumped warbler	*Dendroica coronata*		
Yellow-throated warbler	*Geothlypis trichas*		

* Federal and state listing status only provided for species that are listed (in bold); all others are non-listed species.
Federal Legal Status (refer only to Florida populations; federal status may differ elsewhere):
T(S/A) = Threatened due to a similarity of appearance (see above).
N = Not currently listed, nor currently being considered for listing as Endangered or Threatened.
State Legal Status/Animals:
LE = Endangered: species of plants native to Florida that are in imminent danger of extinction within the state, the survival of which is unlikely if the causes of decline in the number of plants continue; includes all species determined to be endangered or threatened pursuant to the U.S. Endangered Species Act.
LT = Threatened: species native to the state that are in rapid decline in the number of plants within the state, but which have not so decreased in number as to cause them to be Endangered.
LS = Species of Special Concern is a species, subspecies, or isolated population which is facing a moderate risk of extinction in the future.

Plant Species

Non-Comprehensive List of Potential Plant Species that Could Occur in the Breakfast Point Mitigation Bank

Scientific Name	Common Name	*Community Types**					Federal Status	State Status
		UP	MHP	MFW	CF	PM		
Acer rubrum	Red maple		x	x	x			
Achillea millefolia	Milk pea	x						
Agalinis spp.	False foxglove	x						
Aletris lutea	Yellow colic-root		x			x		
Amphicarpum muhlenbergianum	Little blue maidencane					x		
Andropogon arctatus	**Pine-woods bluestem**		x				**N**	**LT**
Andropogon capillipes	Chalky bluestem	x	x					
Andropogon glomeratus	Bushy beardstem		x		x			
Andropogon virginicus	Broomsedge bluestem	x						
Aristida palustris	Longleaf threeawn		x					
Aristida rhizophora	Florida threeawn	x						
Aristida simpliciflora	**Southern three-awned grass**		x				**N**	**LE**
Aristida spiciformis	Bottlebrush Threeawn					x		
Aristida stricta	Wiregrass	x	x					

Non-Comprehensive List of Potential Plant Species that Could Occur in the Breakfast Point Mitigation Bank

Scientific Name	Common Name	*Community Types**					Federal Status	State Status
		UP	MHP	MFW	CF	PM		
Aristolochia tomentosa	**Pipevine**		x				**N**	**LE**
Arnoglossum diversifolium	**Variable-leaved Indian-plantain**		x				**N**	**LT**
Aronia arbutifolia	Chokeberry		x	x	x			
Asclepias lanceolata	Fen-flower milkweed		x	x	x	x		
Asclepias michauxii	Michaux's milkweed		x	x		x		
Asclepias viridula	**Southern milkweed**		x				**N**	**LT**
Aster eryngiifolius	Thistleleaf aster		x					
Aster spinulosus	**Pine-woods aster**		x				**N**	**LE**
Aster spp.	Asters	x	x	x				
Baccharis angustifolia	False-willow					x		
Baccharis halimifolia	Saltbush					x		
Bacopa spp.	Water hyssop					x		
Balduina spp.	Honeycomb heads	x						
Balduina uniflora	Oneflower honeycombhead	x						
Batis maritima	Saltwort					x		
Bigelowia nudata	Rayless goldenrod		x		x			
Borrichia frutescens	Sea oxeye				x	x		
Calamovilfa curtissii	**Curtiss' sandgrass**		x				**N**	**LT**
Carex debilis	Caric sedge				x	x		
Carex verrucosa	Caric sedge				x	x		
Carphephorus odoratissimus	Deer tongue	x						
Cassia fasciculata	Partridge-pea	x						
Cassia nictitans	Sensitive briar	x						
Centella asiatica	Coinwort					x		
Cephalanthus occidentalis	Buttonbush			x	x			
Chaptalia tomentosa	Sun-bonnets		x		x			
Chrysopsis spp.	Golden-asters	x			x	x		
Cladium jamaicense	Sawgrass				x	x		
Cladonia spp.	Reindeer moss	x						
Cleistes divaricata	**Spreading Pogonia**		x				**N**	**LT**
Clethra alnifolia	Sweet pepperbush		x	x				
Cliftonia monophylla	Black titi		x	x	x			
Coelorachis tuberculosa	**Florida jointtail grass**					x	**N**	**LT**
Conradina canescens	False rosemary	x						
Coreopsis nudata	Georgia tickseed		x	x	x			
Coreopsis spp.	Tickseeds	x	x	x	x			
Crataegus phaenopyrum	**Washington thorn**			x			**N**	**LE**
Ctenium aromaticum	Toothache grass		x					
Cyperus pseudovegetus	Marsh flat-sedge				x	x		
Cyperus spp.	Flat sedges				x	x		
Cyrilla racemiflora	White titi		x	x	x			
Desmodium strictum	Pineland beggarweed	x						
Desmodium incanum	Creeping beggarweed		x					
Dicanthelium scabriusculum	Woolly Panicum		x	x	x	x		

Non-Comprehensive List of Potential Plant Species that Could Occur in the Breakfast Point Mitigation Bank

Scientific Name	Common Name	*Community Types**					Federal Status	State Status
		UP	MHP	MFW	CF	PM		
Dicanthelium spp.	Panicums	x	x	x	x	x		
Dichromena spp.	White-topped sedges		x		x	x		
Diodia teres	Poor Joe	x						
Diodia virginiana	Virginia buttonweed		x			x		
Distichlis spicata	Saltgrass				x	x		
Drosera capillaris	Pink sundew		x	x	x			
Drosera intermedia	**Spoon-leaved sundew**		x		x		**N**	**LT**
Drosera tracyi	Gulf Coast sundew		x		x			
Eleocharis spp.	Spikerushes				x	x		
Eragrostis spp.		x	x	x		x		
Erianthus giganteus	Sugarcane plumegrass					x		
Erianthus strictus	Narrow plume grass					x		
Erigeron vernus	Robin's-plantain		x		x			
Eriocaulon compressum	Flattened pipewort		x	x	x			
Eriocaulon decangulare	Ten-angled pipewort				x			
Eriocaulon ravenelii	Southern pipewort			x				
Eriogonum tomentosum	Wild buckwheat	x						
Eryngium integrifolium	Blue-flower coyote thistle		x					
Eryngium baldwinii	Baldwin's coyote thistle		x	x	x			
Eupatorium spp.	Dog fennels	x	x		x			
Euphorbia inundata	Spurge		x					
Euthamia graminifolia	Flat-topped goldenrod				x			
Euthamia minor	Slender flat-topped goldenrod		x					
Fimbristylus spp.	Fringe-rushes					x		
Fraxinus caroliniana	Carolina ash				x			
Fuirena spp.	Umbrellagrasses					x		
Fuirena squarrosa	Hairy umbrellasedge					x		
Gaylussacia dumosa	Dwarf huckleberry		x	x				
Gaylussacia frondosa	Dangleberry		x		x			
Gaylussacia mosieri	Mosier's huckleberry		x	x				
Gelsemium spp.	yellow jessamine	x	x					
Helenium spp.	Sneezeweed	x						
Helianthus spp.	Sunflowers	x						
Heterotheca subaxillaris	Camphor weed	x						
Hydrocotyle verticillata	Water pennywort		x	x	x	x		
Hymenocallis henryae	**Panhandle spiderlily**				x	x	**N**	**LE**
Hymenocallis rotata	Spider lily				x	x		
Hypericum brachyphyllum	St. Johns wort		x					
Hypericum chapmanii	Chapman's St. Johns wort		x	x	x			
Hypericum cistifolium	St. Peter's-wort		x	x	x			
Hypericum crux-andeae	St. Peter's-wort	x	x		x			
Hypericum exile	St. Johns wort		x					
Hypericum fasciculatum	Sandweed		x	x		x		
Hypericum galioides	St. Johns wort			x	x	x		

Non-Comprehensive List of Potential Plant Species that Could Occur in the Breakfast Point Mitigation Bank

Scientific Name	Common Name	*Community Types**					Federal Status	State Status
		UP	MHP	MFW	CF	PM		
Hypericum hypericoides	St. Andrew's cross	x	x	x				
Hypericum microsepala	St. Johns wort		x					
Hypericum tetrapetalum	St. Johns wort	x	x					
Hypoxis juncea	Common stargrass		x					
Ilex cassine	Dahoon holly				x	x		
Ilex coriacea	Sweet gallberry		x	x				
Ilex glabra	Gallberry	x	x	x				
Ilex myrtifolia	Myrtle-leaved holly		x	x	x	x		
Ilex opaca	American holly	x	x	x				
Ilex vomitoria	Yaupon	x	x					
Ipomoea sagittata	Morning glory					x		
Iris tridentata	Savannah iris		x		x			
Iris virginica	Southern blue flag					x		
Itea virginica	Virginia willow			x	x			
Iva frutescens	Marsh elder					x		
Iva microcephala	Little marsh elder		x			x		
Juncus marginatus	Needlerush				x	x		
Juncus megacephalus	Large-headed rush				x	x		
Juncus polycephalos	Manyhead rush				x	x		
Juncus repens	Rushes				x	x		
Juncus roemerianus	Black needlerush					x		
Justicia ovata	Water-willow					x		
Justicia crassifolia	**Thickleaf waterwillow**					x	**N**	**LE**
Kalmia hirsuta	Hairy wicky	x						
Lachnanthes caroliniana	Redroot		x	x	x			
Lachnocaulon anceps	Bog button		x	x	x	x		
Lachnocaulon digynum	**Pineland bogbutton or bog button**		x				**N**	**LT**
Leersia hexandra	Cutgrass		x	x	x	x		
Leucothoe spp.	Dog-hobble/hurrah bush				x			
Lilaeopsis spp.	False-Lilly					x		
Lilium catesbaei	**Catesby lily**		x				**N**	**LT**
Linum floridanum	Florida yellow flax		x					
Linum medium	Flax		x		x			
Linum westii	Flax		x		x			
Lobelia brevifolia	Lobelia		x		x			
Lobelia glandulosa	Lobelia		x					
Lophiola americana	Goldcrest		x			x		
Ludwigia maritima	Seaside plain seedbox					x		
Ludwigia pilosa	Hairy primrosewillow				x			
Lycopodium alopecuroides	Foxtail clubmoss		x					
Lyonia ferruginea	Rusty staggerbush	x						
Lyonia lucida	Fetterbush		x	x				
Macbridea alba	**White birds-in-a-nest**		x				**LT**	**LE**
Macranthera flammea	**Hummingbird flower**			x			**N**	**LE**

Non-Comprehensive List of Potential Plant Species that Could Occur in the Breakfast Point Mitigation Bank

Scientific Name	Common Name	*Community Types**					Federal Status	State Status
		UP	MHP	MFW	CF	PM		
Magnolia virginiana	Sweetbay magnolia	x						
Mikania scandens	Climbing hempweed					x		
Muhlenbergia capillaris	Gulf muhly grass	x						
Myrica cerifera	Wax myrtle	x	x					
Myrica heterophylla	Bayberry		x	x	x			
Myrica inodora	Odorless wax myrtle			x				
Nymphaea odorata	Water lilies					x		
Nyssa aquatica	Water tupelo			x	x			
Nyssa sylvatica var. biflora	Black gum			x	x			
Nyssa ursina	Black gum				x			
Osmunda cinnamomea	Cinnamon fern			x				
Osmunda regalis	Royal fern		x					
Oxypolis greenmanii	**Giant water dropwort**			x			**N**	**LE**
Oxypolis filiformis	Dropwort		x		x			
Panicum hemitomon	Maidencane				x	x		
Panicum nudicaule	**Naked-stemmed panic grass**	x	x				**N**	**LT**
Panicum spp.	Panic grasses	x	x			x		
Panicum verrucosum	Warty Panicum		x					
Panicum virgatum	Switchgrass					x		
Paspalum distichum	Knotgrass					x		
Paspalum plicatum	Brownseed paspalum		x			x		
Persea palustris	Swamp bay		x	x	x			
Physostegia virginiana	False dragonheads				x			
Physostegia godfreyi	**Apalachicola dragonhead**	x	x				**N**	**LT**
Pieris phyllyreifolia	Vine wicky				x			
Pinckneya bracteata	**Fever tree**			x			**N**	**LT**
Pinguicula ionantha	**Violet-flowered butterwort**		x				**LT**	**LE**
Pinguicula lutea	**Yellow butterwort**		x		x		**N**	**LT**
Pinguicula planifolia	**Chapman's butterwort**		x		x		**N**	**LT**
Pinguicula primuliflora	**Primrose-flowered butterwort**		x		x		**N**	**LE**
Pinus elliottii	Slash pine		x	x				
Pinus palustris	Longleaf pine	x	x					
Platanthera ciliaris	**Yellowfringed orchid**		x				**N**	**LT**
Platanthera integra	**Yellow fringeless orchid**	x					**N**	**LE**
Platanthera nivea	**Snowy orchid**		x				**N**	**LT**
Pleea tenuifolia	Rush-featherling		x					
Pluchea odorata	Salt marsh fleabane					x		
Pluchea rosea	Perennial marsh fleabane		x		x			
Pogonia ophioglossioides	**Rose Pogonia**		x				**N**	**LT**
Polygala cruciata	Drumhead		x					
Polygala cymosa	Tall milkwort		x	x				
Polygala lutea	Red-hot-poker		x		x			
Polygonum hydropiperoides	Wildwater-pepper					x		
Pontederia cordata	Pickerelweed				x	x		

Non-Comprehensive List of Potential Plant Species that Could Occur in the Breakfast Point Mitigation Bank

Scientific Name	Common Name	*Community Types**					Federal Status	State Status
		UP	MHP	MFW	CF	PM		
Proserpinaca palustris	Marsh mermaid weed				x	x		
Proserpinaca pectinata	Combleaf mermaid weed				x			
Pteridium aquilinum	Bracken fern	x						
Pterocaulon pycnostachyum	Blackroot	x						
Quercus myrtifolia	Myrtle oak	x						
Quercus pumila	Running oak	x						
Quercus virginiana var. geminata	Sand live oak	x						
Rhexia alifanus	Meadowbeauty	x						
Rhexia lutea	Meadowbeauty	x	x					
Rhexia mariana	Pale meadowbeauty	x						
Rhexia parviflora	**White meadowbeauty**				x		**N**	**LE**
Rhexia salicifolia	**Panhandle meadowbeauty**					x	**N**	**LT**
Rhexia spp.	Meadowbeauties	x						
Rhus copallina	Winged sumac	x						
Rhus glabra	Sumac					x		
Rhynchospora corniculata	Beakrush				x	x		
Rhynchospora filifolia	Beakrush				x	x		
Rhynchospora spp.	Beakrush		x		x	x		
Rhynchospora stenophylla	**Narrow-leaved beakrush**	x					**N**	**LT**
Rubus argutus	Blackberry	x						
Rubus trivialis	Dewberry	x						
Rudbeckia nitida	**St. John's Susan; shiny coneflower**	x	x				**N**	**LE**
Rudbeckia spp.	Black-eyed susans	x	x					
Ruellia noctiflora	**Nightflowering wild petunia**		x				**N**	**LE**
Rumex sp.	Docks					x		
Sabal palmetto	Cabbage palm		x	x				
Sabal minor	Bluestem palmetto		x					
Sabatia spp.	Marsh pinks		x		x	x		
Sagittaria graminea	Grass-leaf Arrowhead				x	x		
Sagittaria isoetiformis	Arrowhead				x	x		
Sagittaria lancifolia	Lance-leaf arrowhead				x	x		
Salicornia perennis	Saltwort					x		
Salicornia virginica	Perennial glasswort					x		
Sambucus canadensis	Elderberry			x				
Sarracenia flava	Trumpets		x		x			
Sarracenia leucophylla	**White-top pitcherplant**		x		x		**N**	**LE**
Sarracenia psitticina	**Parrot pitcher plant**		x		x		**N**	**LT**
Sarracenia purpurea	**Decumbent pitcher plant**		x		x		**N**	**LT**
Saururus cernuus	Lizard's tail				x	x		
Schizacharium scoparium	Bluestems		x					
Schizacharium stoloniferum	Bluestems		x					
Schoenus nigricans	Black sedge					x		
Scleria baldwinii	Nutrushes		x		x	x		

Non-Comprehensive List of Potential Plant Species that Could Occur in the Breakfast Point Mitigation Bank

Scientific Name	Common Name	*Community Types**					Federal Status	State Status
		UP	MHP	MFW	CF	PM		
Scutellaria racemosa	Skullcap					x		
Serenoa repens	Saw palmetto	x						
Sisyrinchium atlanticum	Blue-eyed grass					x		
Sisyrinchium exile	Annual blue-eyed grass					x		
Smilax auriculata	Greenbrier	x						
Smilax laurifolia	Bamboo-vine		x	x				
Smilax pumila	Sarsaparilla vine			x				
Solidago canadensis	Goldenrod	x						
Solidago rugosa	Wrinkled goldenrod	x						
Solidago sempervirens	Seaside goldenrod		x					
Solidago spp.	Goldenrods		x		x	x		
Sorghastrum macundus	Lopsided indiangrass	x						
Sorghastrum nutans	Indiangrass	x						
Spartina cynosuroides	Big cord grass					x		
Spartina patens	Marsh-hay cord grass					x		
Sphagnum spp.	Sphagnum moss		x	x	x	x		
Spiranthes laciniata	**Lace-lip ladies' tresses**		x		x	x	**N**	**LT**
Spiranthes praecox	Ladies tresses		x		x	x		
Sporobolus floridana	Florida dropseed					x		
Sporobolus junceus	Pinewoods dropseed					x		
Stachydeoma graveolens	**Mock pennyroyal**		x				**N**	**LE**
Stillingia aquatica	Corkwood			x	x	x		
Taxodium ascendens	Pond cypress				x	x		
Taxodium distichum	Bald cypress				x			
Tolfieldia racemosa	Asphodel		x	x				
Toxicodendron spp.	Poison ivy			x				
Utricularia purpurea	Purple bladderwort				x	x		
Utricularia subulata	Wiry bladderwort				x	x		
Vaccinium darrowii	Blueberry	x						
Vaccinium elliottii	Elliot's blueberry	x						
Vaccinium myrsinites	Low bush blueberry	x						
Verbesina chapmanii	**Chapman's crownbeard**		x		x		**N**	**LT**
Viburnum nudum	Possumhaw	x		x				
Vitis rotundifolia	Muscadine grape	x						
Woodwardia areolata	Netted chain fern		x					
Woodwardia virginiana	Virginia chain fern			x				
Xyris spp.	Yellow-eyed grasses	x	x		x			
Zizania aquatica	Wildrice					x		

**UP=Upland; MHP=Mesic/Hydric Pine; MFW=Mixed Forested Wetlands; CF=Cypress Flats; PM=Palustrine Marsh*
Note: Federal and state listing status only provided for species that are listed (in bold); all others are non-listed species.
Federal Legal Status (refer only to Florida populations; federal status may differ elsewhere):
N = Not currently listed, nor currently being considered for listing as Endangered or Threatened.
State Legal Status/Plants (Definitions from Sections 581.011 and 581.185(2), Florida Statutes, and the Preservation of Native Flora of Florida Act, 5B-40.001):

LE = Endangered: species of plants native to Florida that are in imminent danger of extinction within the state, the survival of which is unlikely if the causes of decline in the number of plants continue; includes all species determined to be endangered or threatened pursuant to the U.S. Endangered Species Act.
LT = Threatened: species native to the state that are in rapid decline in the number of plants within the state, but which have not so decreased in number as to cause them to be Endangered.

ATTACHMENT A-8 – MONITORING PLAN

Performance Monitoring

Ecologic restoration of plant communities is dynamic and is expected to go through various seres or successional stages until a particular ecologic target is achieved. These targets are included in the BPMB instrument in part IV. Operation of the Bank, 2. Final Success Criteria, a. Community Requirements. As such, periodic evaluation regarding the attainment of target conditions requires monitoring of sample areas to measure the effectiveness of the restoration techniques. The annual monitoring will provide quantitative and qualitative information that can be objectively analyzed. The results of this analysis will allow for interpretation and conclusions from the data. These results will then be reported and if it is deemed that the current methodology is not producing the appropriate ecological response, the methodology will be rethought and adaptive management can be applied as needed.

Ecological monitoring or sampling techniques described in this attachment will allow for the objective measure of species composition, species richness, as well as the proportional distribution (frequency, density and coverage) of lifeforms (groundcover, shrubs and trees). The experimental design for sampling of populations that allows for objective conclusions is derived from widespread and generally accepted procedures/protocol found in Field and Laboratory Methods for General Ecology (Brower, et.al.,1990; Barbour, Burk and Pitts, 1980). The distribution, fecundity and overall health of the vegetation on this site is expected to respond favorable to the proposed hydrologic restoration and physical removal of primarily woody/fire suppressed vegetation by mechanical means and by prescribed fire. In order to track the changes in community structure, species composition and species diversity, we propose to use a transect along which plots will be sampled for the cover, density and frequency of groundcover/shrubs/subcanopy and trees. In areas where trees display a random distribution, *i.e.* outside of planted pine areas, point quarter sampling will be used.

Plants will be identified using vascular plant identification manuals appropriate for this area of Florida

Extensive observations of similar ecosystems and studies were utilized in the development of the protocols. In addition to using quantitative methods through such means as transects and plots, qualitative observations on the overall health and succession of plant assemblages will be noted by photography and notes during walking transects. Walking transects will provide qualitative observations on the overall conditions within a particular plant community, identified as polygons on aerials. This will be helpful in comparison to the quantitative sampling areas to the overall conditions within a particular polygon. The idea of using walking transects is to ensure that the quantitative monitoring is indicative and representative of the overall plant community being sampled. Invasive exotics will also be noted during all sampling while on site. All vegetative sampling will be done in late summer/fall (August-November) to ensure that most species will be in flower or fruit, this will aid in identification.

Notes on the hydrologic restoration will be made in the form of standard qualitative observations of hydric soil characteristics as employed by the USACOE. Hydrologic restoration is based on standard modeling techniques. The hydrologic restoration will be carried out by Hayworth Engineering Science, Inc.

Protocols

Vegetative monitoring will be carried out pre-restoration in the summer/fall and annually thereafter through the time period as specified in the mitigation instrument. Two types of monitoring will be carried out, quantitative and qualitative. The quantitative monitoring/sampling will be through the use of transects, plots and point quarter method. The proposed locations of quantitative and qualitative (walking transects) transects are shown on exhibit A-1-7 of the mitigation plan

documentation. The qualitative monitoring will use a walking transect to record species diversity and observations on the overall health, distribution, wildlife usage, as well as any sightings of invasive exotics. The walking paths will be designed to ensure maximal coverage of all typical landscape/community types in each phase. The specific parameters to be observed and recorded on the walking transects for all polygons include the following:

1. Estimated dominance of graminoids (grasses, sedges and rushes) based on the following cover classes as per Braun/Blanquet scale (Barbour, et.al., 1980): 1= 0-1%; 2= 1-5%; 3=5-25%; 4=25-50%; 5=50-75%; 6=75-100%
2. Estimated dominance of canopy (if present) based on the following cover classes as per Braun/Blanquet scale: 1= 0-1%; 2= 1-5%; 3=5-25%; 4=25-50%; 5=50-75%; 6=75-100%
3. Estimated height class of the majority of woody shrubs using the following scale: 1 <0.5m; 2=0.5-2m; 3=2-5m; 4=5-10m; 5=10-15m; 6=15-20m; 7=20-35m; 8>35m
4. Estimated abundance of weedy or ruderal species based on the following scale: 1 absent; 2 occasional <5% of a given area; 3>5% of a given area. In conjunction with these observations a list of commonly seen ruderal species will be compiled.
5. Estimate of appropriateness of tree density and health.
6. Notes on the presence of a water table, hydrologic indicators, and hydric soil indicators at selected area along walking transects.
7. Wildlife usage and natural history notes. Observations concerning the fauna and their life histories as reflected in footprints, scat, herbivory, nests, etc.
8. Invasive exotics will be georeferenced and appropriate staff selected by the mitigation sponsor will be contacted. The mitigation sponsor is responsible for the eradication of invasive exotics.
9. Any notes on the general aspect of the site and how adaptive management techniques might be used toward restoration target/goals.
10. Photographs of selected areas of the transect to show general aspect of the landscape.

A descriptive summary that compares the observations made during the walking transects with the quantitative measurements will be included in the annual report. This summary will include interpretation and drawing conclusions from the data and how these findings are instructive of the overall progress toward the restoration goals as outlined in the BPMB instrument in part IV. Operation of the Bank, 2. Final Success Criteria, a. Community Requirements. This critical thinking will allow for evaluation, readjustment and interpretation of the restoration methodology and techniques. Adaptive management will be used to adjust and revise management activities accordingly. Photographs taken during the sampling will visually support written observations and overall trends toward restoration goals.

Quantitative Plant Sampling

1. Groundcover, shrubs and subcanopy (woody plants greater than 3 meters tall and with a stem less than 2.34 cm (4 in) at diameter of breast height or dbh (1.5 m)). The quantitative sampling will be designed along a 100 meter transect that will be placed in each polygon of a particular plant assemblage to be sampled. These representative samples will measure the proportional distribution of groundcover, shrub and tree species. Groundcover includes all herbaceous and some weakly wooded plants that are less than 1.5 m tall or have a (dbh) diameter at breast height (1.5 m) of less than 2.54 cm. Vines are not considered groundcover but will be listed in a separate category. Tree saplings will noted. Shrubs include woody plants of relatively low height, having several stems arising from the base and usually lacking a single trunk. Each sample point will be located along the transect, with each point distributed every ten meters (these will be georeferenced and marked by insertion of an iron piece) along the transect. At each point three, 1 m x 1 m subplots or square quadrats will be measured and sampled. These permanent plots will be georeferenced and marked by insertion of an iron piece for future location with a metal detector. The plots will be distributed in a linear fashion perpendicular to the 100 meter transect. Each transect will thus have thirty separate, 1 m x 1 m plots in which the cover, density, frequency and shrub (if any) height will be recorded. Shrub height measure will use the following scale:1 >0.5m; 2=0.5-2m; 3=2-5m; 4=5-10m.

2. Trees. Trees in this sampling technique include woody plants with a main trunk greater than 2.34 cm dbh and have stem greater than 1.5 meter tall. Basal areas of trees are determined from trunk circumference measured 1.5 m above the ground. A direct measurement of foliage coverage is difficult in trees and the basal area generally is proportional to coverage.
Point quarter or quadrant plotless sampling will be employed in areas where the trees have not been planted in plantations, i.e. non-randomly. If non-random, highly aggregated or uniformly spaced trees are found within areas to be sampled along the transect, one 10 m x 10 m plot will be located along the transect and the trees within the plot will be measured for cover and density.

If point quarter sampling is used, each point along the 100 meter transect will be used as the center for four compass directions (N, S, E, W), which divide the sampling site into four quarters or quadrants. In each quadrant, the distance in meters to the center point of the nearest individual tree, regardless of species will be measured. Only one tree per quadrant is measured so that a total of four plants per point are measured. The tree is identified and the dbh (1. 5 m) is recorded as diameter or circumference. If foliage cover can be measured the circular outline of the canopy can be used however direct measurement of foliage coverage is difficult in trees. To approximate the foliage coverage, basal areas of trees will be determined at 1.5 m above the ground. The relative coverage of a species is the proportion of its coverage compared to that of all species in the community combined. Density, frequency and cover can be calculated from measuring basal area in the methodology described above.

If plots are used to measure trees, each will be 10 m x 10 m. One 10 m x 10 m plot will be distributed at a point on the transect, from one of the points used to sample groundcover as described above. Each 10 m x 10 m plot will be georeferenced and marked by insertion of an iron piece for future location with a metal detector. In each plot the trees will be identified and the dbh will be recorded along with an estimate of the tree height using the following scale:1=10m or less; 2=20m; 3=30m; 4=greater than 30m. Density and cover can be calculated from measuring basal area in the methodology described above.

Surface Water Monitoring

A certified professional engineer will perform all hydrologic modeling on site and set the surface water gauges and wells at locations as outlined in the mitigation instrument, these will be monitored continuously as per the instrument. A certified professional engineer will also supervise the installation of groundwater wells and the complete monthly monitoring. In conjunction with the vegetative monitoring and interpretation of quantitative and qualitative data, the gauges and wells will be used to interpret the invert elevation being tested at the stoplog weirs, in order to fine tune the final elevation at which they will be set to best restore and maintain the intended ecological conditions. The stop logs may need to be removed periodically to allow the site to dry down for prescribed burn implementation or other access as needed. The drawdown is only intended long enough to allow for the prescribed burn. The hydrologist will also place gauges in the permanent transects to measure groundwater in the soils. These are not required as per the permit.

Photography

The photographic specifications used in conjunction with the quantitative plant sampling protocol will include photographing the sampling site at either end of the 100 meter transect line. The photographs will include as much view as is typical for a standard 35 mm digital camera. No editing of photos will be used other than that used to manipulate photos for processing into formats suitable for report writing. All photos will be dated and georeferenced whenever possible. All labeling of photographs in final reports will include the date of photo, location and figure or photo number. Photographs will be copied onto a CD for future reference.

Baseline Monitoring

Before ecological restoration activities that disrupt plant distributions are begun, the monitoring plots will be sampled. This data will be used for future comparison and will include the following information for each plot or quadrant.

1. General site conditions on, around and in the vicinity of the transects and plots.
2. Evidence of past land use activities will be noted, especially those that might effect plant distribution, composition and abundance.
3. The proportional distribution of groundcover, shrub and tree species using the protocol of sampling outlined in quantitative plant sampling, above.
4. Presence of invasive exotics in plots.

Analyzing the Data

The annual monitoring will provide quantitative and qualitative information that can be objectively analyzed with statistics. At this time we anticipate using importance values calculated from relative cover, relative frequency and relative density, to compare landscapes/plant communities at the restoration site to those at the reference sites.

Sampling data tables will be constructed. Each will contain a column of species measured and the relative cover, relative frequency, relative density and the importance value and importance rank. The following definitions will be used for relative cover, relative frequency, relative density, importance value and importance rank.

Relative frequency is the frequency of a particular species divided by the sum of the frequencies of all species, multiplied by 100.

Relative cover is the cover of a particular species divided by the sum of covers of all species, multiplied by 100.

Relative density is the density of a particular species divided by the sum of densities of all species, multiplied by 100.

Importance value is the sum of the relative frequency, the relative cover and the relative density of a species.

Importance rank % is the importance value of a particular species divided by the sum of all importance values for a transect, multiplied by 100.

The results of this analysis will allow for interpretation and conclusions from the data. These results will then be reported and evaluated. If it is determined that the restoration methodology is not producing the appropriate ecological response as this relates to the performance standards (part IV, section E), the methodology will be re-evaluated.

Reports and Record Keeping

Reports including all observations, raw and processed data, digital photographs will be compiled into a report. Annual monitoring will occur each fall. A copy of all records, in addition to those submitted, will be maintained at the offices of the Qualified Mitigation Specialist of record.

Success

The mitigation project is expected to be successful in restoring the pre-existing plant communities or at least show a strong trend toward this effect on the site. On site forensics and historic aerials have helped craft the understanding of the appropriateness of various species and how they might have been part of the ecology and biodiversity of this site in the past. Attachment A-7 of the mitigation plan documentation are lists of plants species typical for this area and are floristic lists of what are appropriate species for the plant communities at this site.

The monitoring results will be compared with the baseline data and evaluated against the performance standards (Part IV, Section E of the permit). We expect the importance values as recorded from the permanent transects on the restored site to move close to those found on appropriate reference sites. If after three years the vegetation, *i.e.* the relative coverage, density and frequency of appropriate species, is not clearly trending toward the target condition, selected areas may be seeded or planted with ecologically appropriate native species that would be typical for the intended natural community type.

Reference Sites

Appropriate reference communities will be selected from well managed public lands that contain comparable plant communities. This data will be used to help analyze the results from the quantitative measurements taken at the restoration site. The same sampling technique as described in the quantitative plant sampling above, will be used to collect relevant data that will be used for comparison. Target conditions of the permit may be modified in lieu of new information collected from reference communities. Target community type and realistic goals for this may need revision with the approval by the authorizing agencies.

ATTACHMENT A-9 – HYDROLOGIC RESTORATION PLAN

Breakfast Point Mitigation Bank

Bay County, Florida

February 20, 2004

Prepared For:

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Hydrologic Restoration Plan

Hydrologic Restoration Report for Breakfast Point Mitigation Bank

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1 Introduction

The St. Joe Company (SJC) wishes to restore and enhance approximately 4,637 acres of wetlands and uplands that are primarily in silviculture, within a portion of their property in Bay County, Florida. The proposed project is located on the Breakfast Point Peninsula, which is north of Panama City Beach and extends northward into West Bay (Exhibit 1-1). The proposed project, known as the Breakfast Point Mitigation Bank (here after referred to as the "BPMB"), is surrounded by about 2,500 acres of conservation lands along the shoreline.

The hydrologic plan contained herein provides technical documentation in support of issuance of a U.S. Army Corps of Engineers (the Corps) Section 404 Regional General Permit (RGP) and a Florida Department of Environmental Protection (FDEP) Ecosystem Management Agreement (EMA) for the West Bay to East Walton County GP/EMA Project.

2 Existing Conditions

2.1 Landscape Setting

The 4,637-acre BPMB is entirely within property owned by SJC. Surrounding and nearby land uses include silviculture, conservation, residential, and commercial. The BPMB is located north of Panama City Beach and extends northward into West Bay (Exhibit 1-1).

The shoreward edge of the BPMB consists of conservation lands, comprised of expansive salt marshes, tidal flats and pine islands that surround the peninsula. The BPMB will effectively buffer approximately 11 miles of West Bay shoreline.

The BPMB is located within five drainage basins: Direct Runoff to Bay, Botheration Bayou, Basin Bayou, Harrison Bayou, and Unnamed Bayou, which are within the St. Andrews Bay watershed (FGDL 2003; Fernald and Purdum 1998). This large estuarine watershed incorporates the interconnected St. Andrew, West, East, and North Bays; St. Joseph Bay; Deer Point Reservoir; and the respective surface water basins of these water bodies (NWFWMD 2000). The watershed covers approximately 750,000 acres in six Florida counties; 61 percent of which is in Bay County. The dominant land use in the watershed is upland forest, which is primarily in silviculture.

2.2 Topography and Hydrology

Topography across the BPMB varies from about 0 foot NAVD along the West Bay shoreline to about 12 feet NAVD along the southern boundary. Natural drainage on the property varies from the interior, where flows are to the center of the site and then west into Botheration Bayou and the outer rim of the site, which generally flows toward West Bay (Exhibit 2-1). There are ridges from ancient shorelines running generally northwest to southeast through the site, which tend to separate the lower-lying areas from one another. The remainder of the site is quite flat and is pockmarked throughout by small rises and depressions.

2.3 Soils

According to the Natural Resources Conservation Service (NRCS) soil survey for Bay County, Florida (USDA 1981), eight soil units are present on the property. A general

description of each soil unit present on the site is provided below. Locations of soil units are depicted on Exhibit 2-2.

Table A-1. USDA NRCS Soil Types within the Breakfast Point Mitigation Bank

Soil Number	Soil Type	Hydric or Not Hydric
13	Leon Sand	Hydric - Not Primary
22	Pamlico-Dorovan Complex	Hydric – Primary
23	Chipley Sand, 0 to 5 percent slopes	Not Hydric
27	Mandarin Sand	Hydric - Not Primary
29	Rutlege Sand	Hydric – Primary
30	Pottsburg Sand	Hydric - Not Primary
41	Dirego Muck	Hydric – Primary
52	Bayvi Loamy Sand	Hydric – Primary

Leon Sand: This poorly drained, nearly level soil occurs in pine flatwoods areas where the natural vegetation consists of a canopy of longleaf, pond, and slash pine; water oak and an understory of wax myrtle, saw palmetto, running oak, fetterbush, gallberry, and pineland threeawn. The unit has a water table within a depth of 10 inches for 1 month to 4 months and at a depth of 10 to 40 inches for about 9 months in most years. The NRCS Ecological Community typical for this soil type is north Florida flatwoods.

Pamlico-Dorovan Complex: This complex of very poorly drained soils occurs in depressional areas along low gradient drainageways. The vegetation consists mostly of water-tolerant hardwoods such as water oak, sweetbay, back gum, red maple, black willow, alder, and cypress. The Pamlico soils have a water table within a depth of 10 inches most of the time, and are ponded after flooding for 4 to 8 months in most years. The Dorovan soils have a water table within a depth of 10 inches most of the time, and are ponded after flooding for 6 to 12 months in most years. The NRCS Ecological Communities typical for this soil type are often swamp hardwoods and sometimes shrub bog.

Chipley Sand, 0 to 5: This somewhat poorly drained, nearly level to gently sloping soil occurs between higher upland soils and wet flatwoods. Natural vegetation consists of slash and longleaf pines; post, bluejack, and turkey oaks; huckleberry; dogwood; native shrubs; saw palmetto; bluestem; and wiregrass. This soil has a water table at a depth of 30 to 40 inches for 1 month to 3 months and at a depth of 40 to 60 inches for 3 to 6 months in most years. The NRCS Ecological Community typical for this soil type is mixed hardwood & pine.

Mandarin Sand: This somewhat poorly drained, nearly level soil is on low ridges and knolls in the flatwoods. Natural vegetation consists of longleaf pine, slash pine, water oak, bluejack oak, turkey oak, and post oak in the canopy and an understory of wax myrtle, saw palmetto, running oak, fetterbush, and pineland threeawn. The soil has a water table at a depth of 20 to 30 inches for 1 month to 3 months and at a depth of 30 to 60 inches for about 9 months in most years. The NRCS Ecological Community typical for this soil type are sand pine scrub and north Florida flatwoods.

Rutlege Sand: This very poorly drained soil is on nearly level or slightly depressional areas along drainageways. The natural vegetation is buckwheattree [black titi], sweetbay, blackgum, cypress, and scattered slash pine. The understory is gallberry,

wax myrtle, pineland threeawn, and various reeds and sedges. The Rutlege sand has a water table at or near the surface for 4 to 6 months during most years and is under ponded conditions for 4 to 6 months annually. The NRCS Ecological Community typical for this soil type are cypress swamp, swamp hardwoods, shrub bog, and pitcher plant bog.

Pottsburg Sand: This poorly drained soil is on nearly level, low-lying areas of the flatwoods. The natural vegetation consists of sweetbay, buckwheattree, blackgum, water oak, scattered slash and longleaf pine, inkberry, gallberry, saw palmetto, wax myrtle, and pineland threeawn. The soil unit has a water table within a depth of 10 inches for 4 to 6 months during most years. Some low-lying inclusions are ponded for 2 to 6 months annually. The NRCS Ecological Community typical for this soil type is north Florida flatwoods.

Dirego Muck: This level to nearly level, very poorly drained soil occur in tidal marshes. The natural vegetation is dominantly needlerush, cordgrass, and torpedograss. The Dirego soil has a water table at a depth of less than 10 inches, or the soil is ponded for 6 to 12 months, during most years. The NRCS Ecological Community typical for this soil type is salt marsh.

Bayvi Loamy Sand: This level or nearly level, very poorly drained soil is in the tidal marshes and is inundated daily by normal high tides. The natural vegetation is dominantly needlerushes, cordgrass, and torpedograss. The unit has a water table at a depth of less than 10 inches, or the soil is ponded for 6 to 12 months, during most years. The NRCS Ecological Community typical for this soil type is salt marsh.

2.4 Land Uses

Much of the proposed mitigation bank has been planted in slash pine; slash pine plantation, of various ages from about 3 years to 25 years, comprises approximately 87% of the site. In wetter areas, such as in cypress flats/swamps and freshwater marshes, many of the slash pines have died. Some of the older plantings have recently been thinned every third row. Most of the site was bedded during planting, and bed and furrow depths range from about 3 to 12 inches, typically 3 to 8 inches deep. Some of the types of communities found on the site vary based on slight differences in topography. Where wetlands have been furrowed, distinctly different plant communities usually exist on the tops of the beds vs. in the furrows. The understory/ground cover strata varies from open herbaceous to very dense thickets of mesic or hydric shrubs. Due to fire suppression, shrub percent cover is much higher than would naturally occur in the historical natural communities. There has been no infrastructure constructed on the site other than logging roads and ditches to support silviculture.

Water cover, depth, and flow direction across the site have been affected by activities related to silviculture – construction of ditches and logging roads, and bedding and furrowing. In some areas, the density of pine plantings and shrub cover has undoubtedly increased evapotranspiration.

2.5 Groundwater

The normal wet season groundwater table elevations in this area are controlled by the ditching and are estimated to range between 0 and 12 inches below land surface. The Soil Survey data was field verified in several locations by WilsonMiller in December 2003.

2.6 Floodplain

Floodplain delineations are obtained from the Federal Emergency Management Agency (FEMA) Flood Hazard Insurance Rate Map for Bay County. A majority of the project is located within the 100-year flood plain and is illustrated in Exhibit 2-3.

2.7 Drainage Patterns

The Breakfast Point area stormwater runoff collects from the area identified within the project boundaries. Runoff from Panama City Beach does pass through the project area. Two major canals collect stormwater runoff from the south side of US Highway 98 from within the city limits of Panama City Beach. The first canal routes the collected stormwater runoff through the southeast corner of the project boundary and discharges into Harrison Bayou. The second canal routes stormwater through the southwest corner of the project boundaries. Runoff generated from within the project area is collected in a series of manmade ditches. The ditches and additional features are illustrated in Exhibit 2-4.

The eastern side of the project area discharges towards the east directly into Harrison Bayou. Harrison Bayou is directly connected to West Bay/Intracoastal Waterway. The center of the project area presently discharges through a manmade ditch towards the north (North-South Canal). This manmade ditch collects water from the central drainage basins and discharges through four existing 36-inch culverts into Basin Bayou, which is also directly connected to West Bay/Intracoastal Waterway. Under preconditions, the earthen berm created from the excavation of the North-South Canal does not allow stormwater to flow east. The western portion of the project area is directly connected to Botheration Bayou or West Bay. A small portion of the southwest corner of the project area directs runoff into Botheration Bayou.

Bay County presently has a drainage easement in place for the two canals previously mentioned. These canals are maintained on a regular basis and if modifications were made to these canals an increase in the channel stage would occur and greatly increase the possibility of off-site flooding. According to the City of Panama City Beach Public Works off-site flooding is already encountered southeast of the project area (trailer park) and southwest of the project area (Coloney Club). Hydrologic restoration could not be achieved in these two small areas and have not been included in the modeling efforts. WilsonMiller has proposed no modifications to the Bay County Drainage and Mosquito Ditches. Preconditions drainage flows, existing structure locations and water features are illustrated in Exhibit 2-4.

3 Hydrologic and Hydraulic Analyses

3.1 Model Development

This section describes the methods used to compile data for the hydrologic restoration evaluation. The goal of the hydrologic report is to conduct an evaluation on pre and post hydrologic conditions that will occur during the rehydration of the Breakfast Point mitigation area.

The Breakfast Point primary stormwater management system (PSWMS) consists of connected series of natural creeks and ditched canals. Characteristic data was obtained from a new field survey, site visits, interviews, topographic and aerial maps. Survey locations and data are illustrated in Exhibits 3-1 and 3-2.

For this study, the existing Breakfast Point PSWMS was represented with sixteen (16) hydrologic basins (storage) connected by thirteen (13) link (conveyance/structure) nodes. A nodal diagram is included in Exhibit 3-3. The nodes identified in the Breakfast Point PSWMS can be classified as either conveyance or storage elements. Conveyance elements include closed conduits, open channels, bridge crossings and road overflows that collect and route runoff through the system. Storage elements (basin nodes) include closed basins, natural depression areas that store and attenuate runoff within the system. Sixteen basins were delineated for this study and are identified in Exhibit 3-4 and represented with the symbols N-10 through N-160. Link structures (culverts, bridges, low areas) at basin outflows are also represented in Exhibit 3-4 and are labeled similar to L-071.

3.2 Model Methodology

To develop an understanding of the behavior of the stormwater system, WilsonMiller used the recent version of the Advanced ICPR (ICPR) stormwater model. This tool has been verified for stormwater design and master plan uses throughout Florida.

Runoff volume calculations are based on the Runoff Curve Number (CN) method. Hydrological soil group, defined by capacity to hold water, and ground cover conditions within a watershed are used to determine CN values, which, in turn, are used to estimate available soil storage capacity. Runoff volume is then calculated for a specified storm event based on rainfall depth and available soil storage capacity. The rainfall runoff relationship is based on the SCS method.

Peak discharge calculations are based on the Graphical Peak Discharge method. The watershed CN, Time of Concentration (Tc), drainage area and rainfall depth are used to determine peak discharge for a specified storm event.

The next step was the creation of a simplified numerical representation of the actual primary stormwater system. The primary stormwater management system model schematic is presented in Exhibit 3-4. The schematic shows the delineation of hydrologic units, the model nodes into which simulated runoff is input, conveyance channels and structures, as well as, the storage node. Identification numbers for various system elements are also shown on the schematic. The schematic provides a reference between the actual, physical location and the numerical model.

3.3 Hydrologic Unit Delineation

Hydrologic units were determined using topographic maps, aerial photographs, survey data and ground truthing. Hydrologic units are generally defined by natural features or constructed stormwater conveyance systems. Surface areas were determined by using a Geographic Information System (GIS), which assisted in determining the corresponding acreage. These defined units are illustrated in Exhibit 3-4.

3.4 Conveyance Elements

In order to properly determine culvert information for each culvert crossing, survey data was collected by Buchanan & Harper Inc. The pipe diameter was measured, the length and inverts located then surveyed. This information was the foundation for the model representation of the hydraulic system. In addition to the structure inventory, cross-section survey information of natural channels was obtained at selected points along the canals and creeks. In order to represent channel floodplains, survey data was extended in the hydraulic model based on the topographic maps in order to represent channel floodplains. A copy of the survey data is included in Exhibits 3-1 and 3-2.

3.5 Stage-Area Storage

The stage-area storage relationship for each basin was determined by using topographic survey data, USGS topographic maps and aerial photographs. The average-end area method was used to develop storage volumes within the identified basins.

3.6 Design Storms

Since rainfall gauges were not located in a relative close proximity to the project area, WilsonMiller used the Florida Department of Transportation (FDOT) rainfall distribution information during modeling efforts. Storm return frequencies of 5-year, 10-year, 25-year and 100-year events were modeled. Rainfall depths for the 24-hour duration are 7.92 inches, 9.12 inches, 10.8 inches and 13.44 inches, respectively. The 24-hour duration was selected in order to create enough stormwater runoff to understand the mechanics of the system.

4 Model Results

The model was applied to the various design storm events in the current drainage configuration pattern and is identified in the report as preconditions (Pre). Once the Preconditions model results were obtained and verified, modifications were made to the model that would simulate the proposed improvements for re-hydration of the project area. The proposed improvement model runs are identified in the report as Postconditions (Post).

WilsonMiller, in order to determine the required surface water elevation, reviewed the historic flow patterns and re-establish the desirable plant communities within the project area. The surface water elevations for the desirable plant communities were established throughout the project area by the project ecologists.

Peak stages for the four design events are shown for the selected basin nodes in pre and postconditions in Table 4-1. The locations of the selected basin nodes referenced in the table are shown in Exhibit 3-4. Postcondition for the basin nodes illustrate resulting peak water levels greater than or equal to the Precondition level. The larger storm events that occur less frequently reflect a slight difference in water elevations. The smaller more frequent storm events show greater increases between 0.4 and 0 feet. The model results also illustrated that after a storm had occurred in the preconditions state the peak stage would recover in less than 48 hours. Postcondition results indicate that the peak level, although equal to or slightly higher than preconditions, would remain staged for longer periods of time (240 hours and greater).

Table 4-1. Peak Stages (feet, NGVD) in Breakfast Point Area for Various Design Storms

DESIGN STORM EVENT	CONDITION	BASIN NODE					
		N-10	N-20	N-30	N-40	N-50	N-60
100-YEAR	PRE	3.8	4.3	4.7	4.3	2.7	4.0
24-HOUR	POST	4.2	4.3	4.7	4.4	2.7	4.0
25-YEAR	PRE	3.5	3.9	4.2	4.0	2.4	3.7
24-HOUR	POST	3.7	4.0	4.2	4.0	2.4	3.7
10-YEAR	PRE	3.3	3.7	3.9	3.7	2.2	3.6
24-HOUR	POST	3.4	3.8	3.9	3.8	2.2	3.6
5-YEAR	PRE	3.1	3.5	3.7	3.5	2.0	3.4
24-HOUR	POST	3.2	3.6	3.7	3.6	2.0	3.4

DESIGN STORM	CONDITION	BASIN NODE					
		N-70	N-80	N-90	N-100	N-110	N-120
100-YEAR	PRE	2.9	3.9	4.1	2.7	3.5	1.5
24-HOUR	POST	2.9	3.9	4.1	2.7	3.5	1.5
25-YEAR	PRE	2.6	3.6	3.8	2.5	3.2	1.5
24-HOUR	POST	2.6	3.6	3.8	2.5	3.2	1.5
10-YEAR	PRE	2.5	3.4	3.6	2.3	3.0	1.5
24-HOUR	POST	2.5	3.4	3.6	2.3	3.0	1.5
5-YEAR	PRE	2.3	3.3	3.5	2.2	2.9	1.5
24-HOUR	POST	2.3	3.3	3.5	2.2	2.9	1.5

DESIGN STORM	CONDITION	BASIN NODE		
		N-130	N-140	N-150
100-YEAR	PRE	1.0	1.8	1.0
24-HOUR	POST	1.0	1.8	2.0
25-YEAR	PRE	1.0	1.8	1.0
24-HOUR	POST	1.0	1.8	1.7
10-YEAR	PRE	1.0	1.8	1.0
24-HOUR	POST	1.0	1.8	1.5
5-YEAR	PRE	1.0	1.8	1.0
24-HOUR	POST	1.0	1.8	1.4

Peak flows for the four design events are again illustrated for the selected structure nodes in pre and postconditions. The locations of the selected basin nodes referenced in the table are shown in Exhibit 4-1. Postconditions for the structures show resulting peak flow adjustments based on the proposed improvements.

Table 4-2 Peak Flows (cfs) in Breakfast Point Area for Various Design Storm Events

DESIGN STORM EVENT	CONDITION	STRUCTURE NODE					
		L-071	L-181	L-201	L-211	L-231	L-241
100-YEAR	PRE	131	7	20	17	17	0
24-HOUR	POST	131	7	0	2	1.5	6
25-YEAR	PRE	102	6	16	13	11	0
24-HOUR	POST	103	6	0	0	0	1
10-YEAR	PRE	85	6	13	10	7	0
24-HOUR	POST	84	6	0	0	0	0
5-YEAR	PRE	72	5	11	9	5	0
24-HOUR	POST	73	5	0	0	0	0

DESIGN STORM	CONDITION	STRUCTURE NODE			
		L-251	L-311	L-341	L-1001
100-YEAR	PRE	7	10	13	6
24-HOUR	POST	7	12	13	6
25-YEAR	PRE	7	8	9	4
24-HOUR	POST	7	8	9	4
10-YEAR	PRE	7	6	8	3
24-HOUR	POST	7	6	8	3
5-YEAR 24	PRE	7	5	7	2
HOUR	POST	7	5	7	2

4.1 Proposed Improvements

The preconditions model was modified and the following improvements have been proposed at the following structure locations. The following structure locations are illustrated and identified numerically in Exhibit 4-1.

1. At structure node **L-201**, an adjustable stop log system shall be installed to allow for adjustment of the surface water elevation and allow wet season base flow to exit the system. This adjustable stop log system will be mounted to the upstream end of the existing 36-inch culvert. An illustrative representation of the control structure system is included in Exhibit 4-2. Once permanent surface water elevations are established, a hardened low water crossing will be installed. Exhibit 4-3 illustrates the proposed crossing design and elevations based on current post model results. These improvements will establish the desirable surface water elevations and prevent surface water from exiting basin N-10 and re-directing flow towards the south.

2. At structure node **L-211**, an adjustable stop log system shall be installed to allow for adjustment of the surface water elevation and allow wet season base flow to exit the system. This adjustable stop log system will be mounted to the upstream end of the existing 36-inch culvert. An illustrative representation of the control structure system is included in Exhibit 4-2. Once permanent surface water elevations are established, a hardened low water crossing will be installed. Exhibit 4-3 illustrates the proposed crossing design and elevations based on current post model results. These improvements

will establish the desirable surface water elevations and prevent surface water from exiting basin N-20 and re-directing flow towards the south.

3. At structure node **L-231**, an adjustable stop log system shall be installed to allow for adjustment of the surface water elevation and allow wet season base flow to exit the system. This adjustable stop log system will be mounted to the upstream end of the existing 36-inch culvert. An illustrative representation of the control structure system is included in Exhibit 4-2. Once permanent surface water elevations are established, a hardened low water crossing will be installed. Exhibit 4-3 illustrates the proposed crossing design and elevations based on current post model results. These improvements will establish the desirable surface water elevations and prevent surface water from exiting basin N-30 and re-directing flow towards Improvement Number 4.

4. At structure node **L-241**, an adjustable stop log system shall be installed to allow for adjustment of the surface water elevation and allow wet season base flow to exit the system. This adjustable stop log system will be mounted to the upstream end of the proposed 36-inch culvert. An illustrative representation of the control structure system is included in Exhibit 4-2. Once permanent surface water elevations are established, a hardened low water crossing will be installed. Exhibit 4-3 illustrates the proposed crossing design and elevations based on current post model results. These improvements will establish the desirable surface water elevations within basins N-30 and N-40 and allow for re-hydration of basin N-150 by re-directing flow east of the North-South Canal.

5. At structure node **L-311**, an adjustable stop log system shall be installed to allow for adjustment of the surface water elevation and allow wet season base flow to exit the system. This adjustable stop log system will be mounted to the upstream end of the existing 24-inch culvert. An illustrative representation of the control structure system is included in Exhibit 4-2. Once permanent surface water elevations are established, a hardened low water crossing will be installed. Exhibit 4-3 illustrates the proposed crossing design and elevations based on current post model results. These improvements will establish the desirable surface water elevations within basins N-40,N-50 and N-60 and allow for re-hydration of basin N-150 by re-directing flow east of the inner perimeter road.

6. At structure node **L-800**, install a ditch block 100 feet in length along the existing manmade channel restoring the natural ground surface elevation. An illustrative representation of the proposed improvement system is included in Exhibit 4-4. These improvements will establish the desirable surface water elevations within basins N-60 and allow for re-hydration of basin N-150 by re-directing flow east of the inner perimeter road (basin divide between N-70 and N-150).

7. At structure node **L-1200**, install a ditch block 100 feet in length along the existing manmade channel restoring the natural ground surface elevation. An illustrative representation of the proposed improvement system is included in

Exhibit 4-4. These improvements will establish the desirable surface water elevations within basins N-120.

8. At structure node **L-1300**, install a ditch block 100 feet in length along the existing manmade channel restoring the natural ground surface elevation. An illustrative representation of the proposed improvement system is included in Exhibit 4-4. These improvements will establish the desirable surface water elevations within basins N-130.

9. At structure node **L-1400**, install a ditch block 100 feet in length along the existing manmade channel restoring the natural ground surface elevation. An illustrative representation of the proposed improvement system is included in Exhibit 4-4. These improvements will establish the desirable surface water elevations within basins N-130.

The above improvements are illustrated in Exhibit 4-5 and will above improvements will require coordination of construction activities with dry periods (minimal rainfall). WilsonMiller recommends that this work be performed during months with less rainfall (October through March). If scheduling requires work during periods with higher rainfall (wet season) additional stormwater pollution control measures will need to be implemented to protect the surrounding environment from contaminates (sedimentation) derived from construction activities. A stormwater pollution prevention plan shall be prepared based upon the proposed construction activities and time period (wet or dry periods).

4.2 Monitoring Plan

The proposed structures listed in this section are proposed to create enhanced connectivity, re-establishment of the historic surface water flow and hydroperiod, and maximization of sheetflow within the project area. These proposed structures have been designed for an acceptable service life span, are expected to meet the conditions set forth in the plan, and will be constructed using best management practices (BMPs) to safeguard the site from impacts derived from construction activities. The modeled system has demonstrated that the desired surface water elevations are obtainable and that no off-site flooding impacts are created.

A monitoring plan for the BPMB has been included as Attachment A-8 in the Mitigation Plan Document for the Breakfast Point Mitigation Bank.

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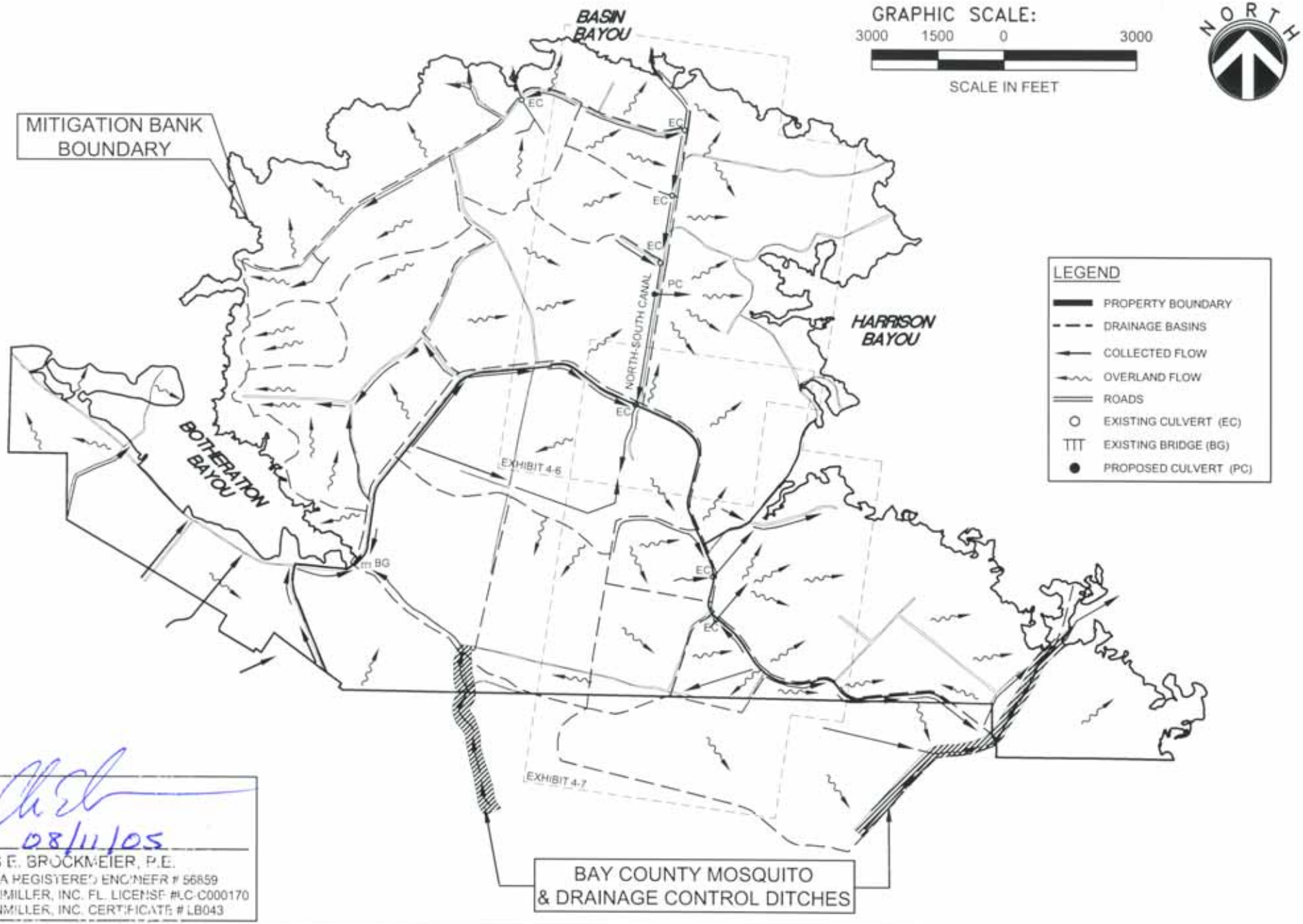
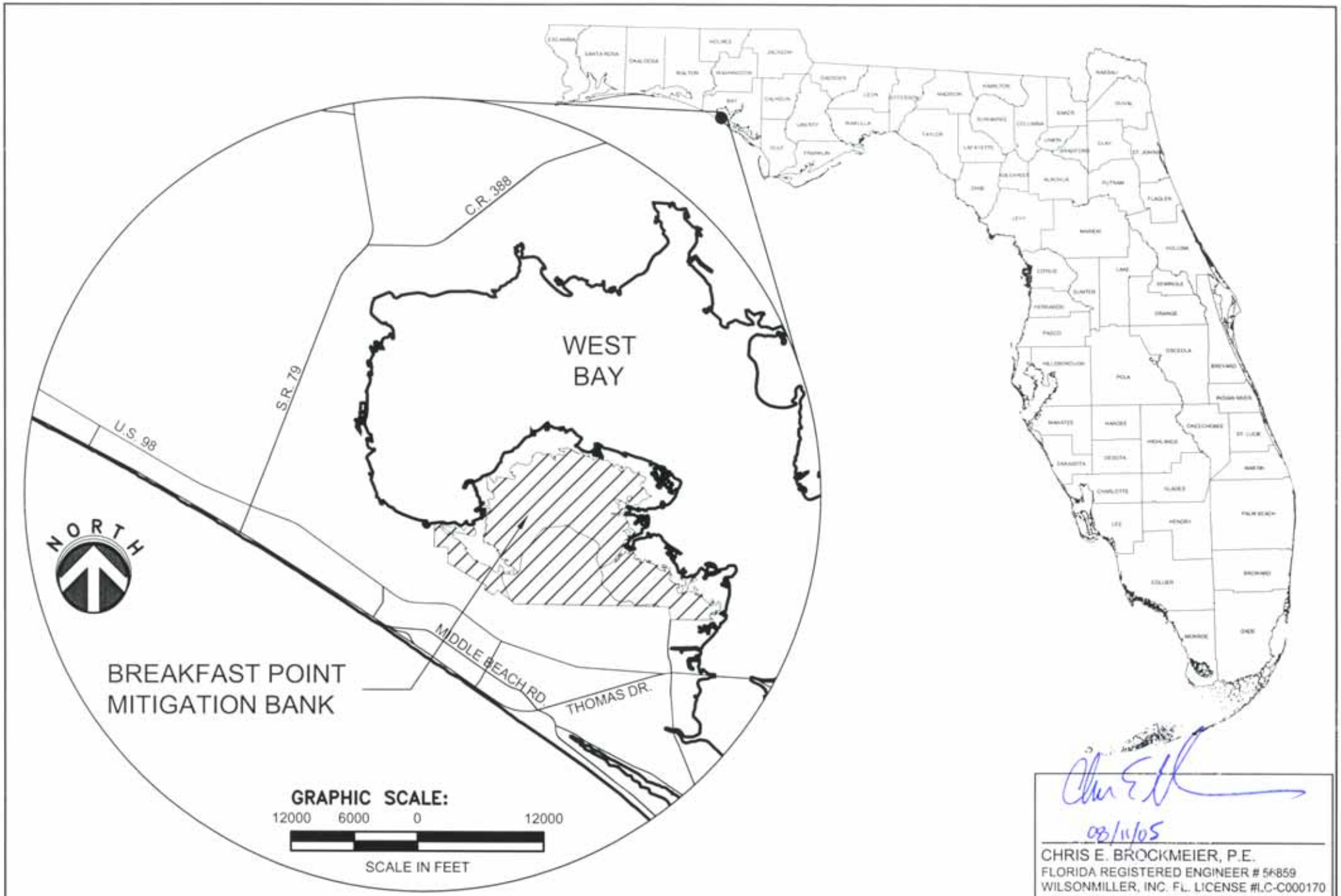


08/11/05

CHRIS E. BROCKMEIER, P.E.
FLORIDA REGISTERED ENGINEER # 56859
WILSONMILLER, INC. FL. LICENSE #LC-C000170
WILSONMILLER, INC. CERTIFICATE # LB043

PROJECT NO 04108-000-000	DATE: Feb. 2004	WilsonMiller	EXHIBIT 4–5	PROJECT: BREAKFAST POINT MITIGATION BANK
DRAWN BY/EMP NO WMB/1467	SCALE 1"=3000'			CLIENT: ST. JOE COMPANY
SHEET NUMBER 12 of 12	REVISION 08/2005 TRC			TITLE: POSTCONDITION DRAINAGE FLOWS



08/11/05

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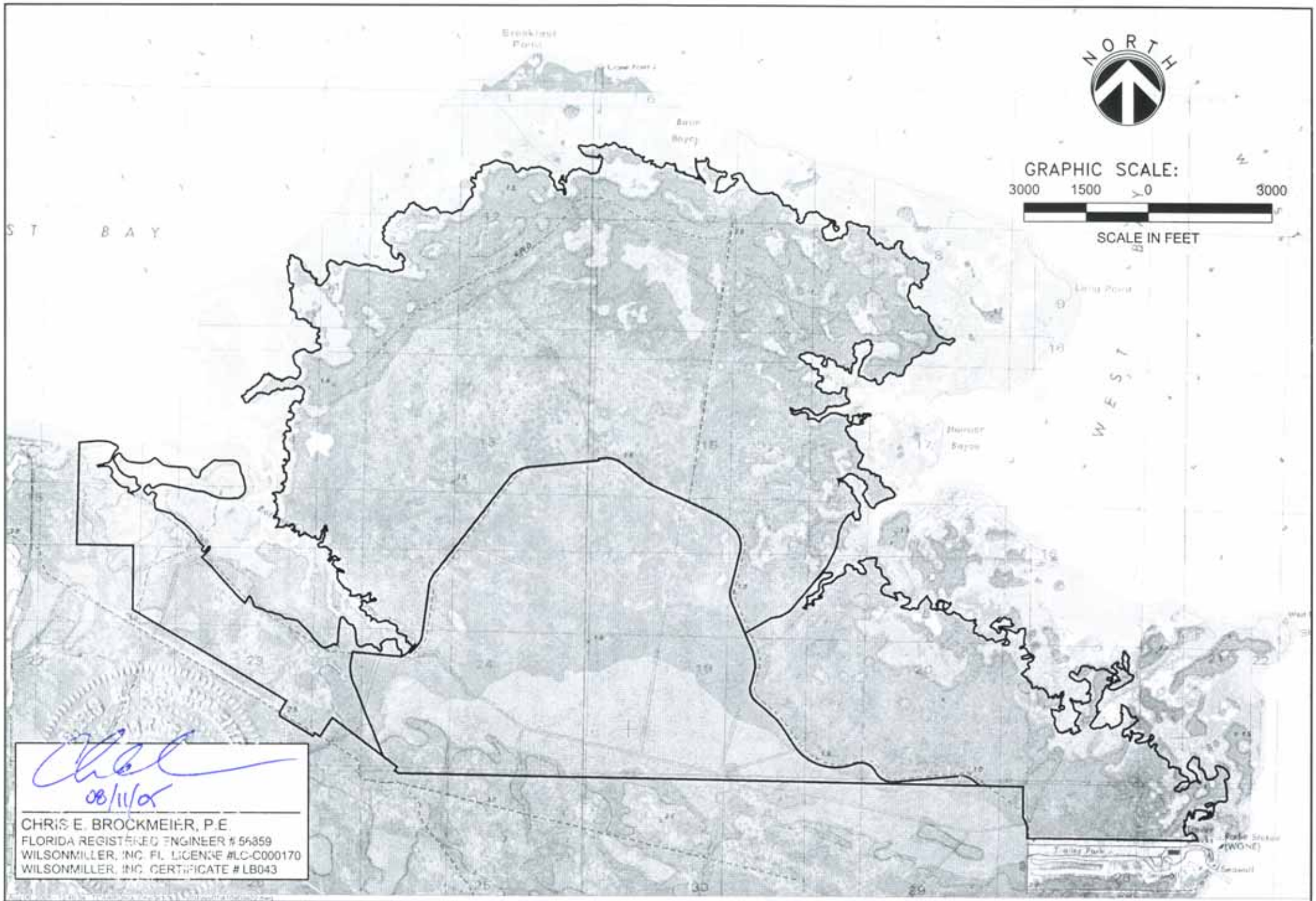
FLORIDA REGISTERED ENGINEER # 56859
WILSONMILLER, INC. FL. LICENSE #LC-C000170
WILSONMILLER, INC. CERTIFICATE # LB043

PROJECT NO. 04108-000-000	DATE: Feb. 2004	WilsonMiller	EXHIBIT 1-1	PROJECT: BREAKFAST POINT MITIGATION BANK
DRAWN BY/EMP NO. WMB/1467	SCALE 1"=12,000'			CLIENT: ST. JOE COMPANY
SHEET NUMBER 1 OF 12	REVISION 08/2005 TRC			TITLE: LOCATION MAP



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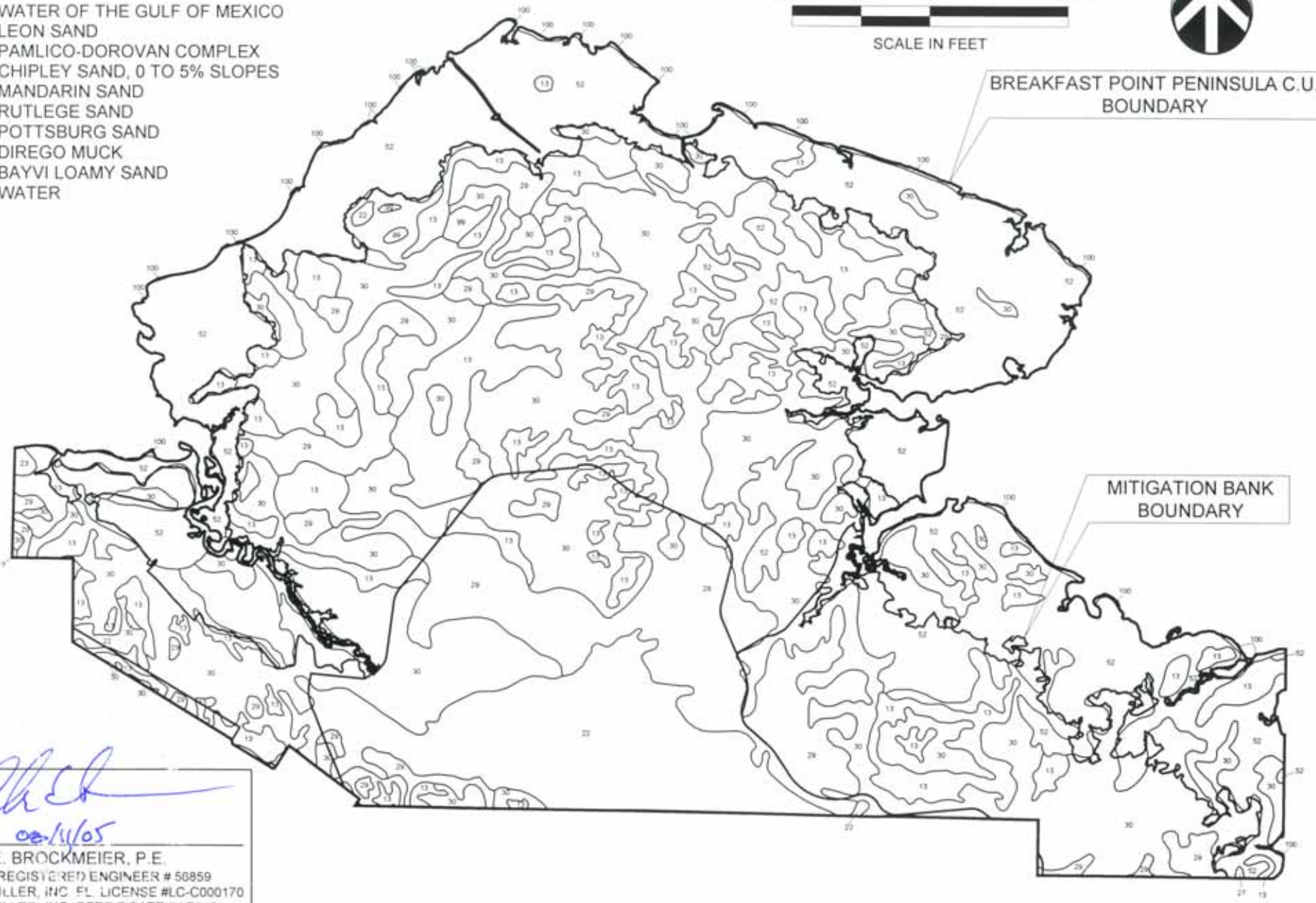
DRAWN BY/EMP NO. WMB/1467	SCALE 1"=3000'			CLIENT: ST. JOE COMPANY
SHEET NUMBER 2 OF 12	REVISION 08/2005 TRC			TITLE: QUAD TOPOGRAPHY MAP

LEGEND

100 WATER OF THE GULF OF MEXICO
13 LEON SAND
22 PAMLICO-DOROVAN COMPLEX
23 CHIPLEY SAND, 0 TO 5% SLOPES
27 MANDARIN SAND
29 RUTLEGE SAND
30 POTTSBURG SAND
41 DIREGO MUCK
52 BAYVI LOAMY SAND
99 WATER

GRAPHIC SCALE:
3000 1500 0 3000
SCALE IN FEET

NORTH



08/11/05

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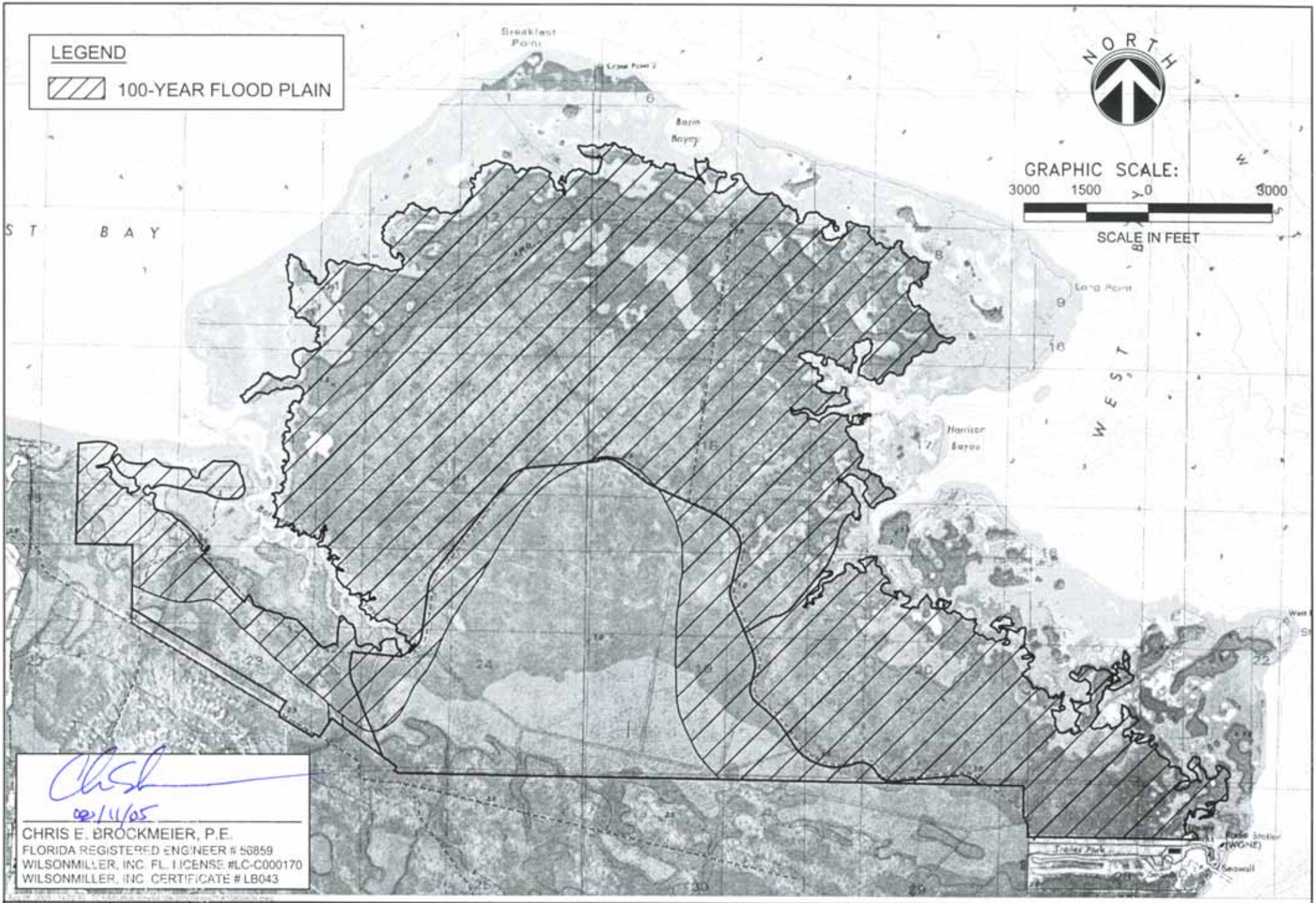
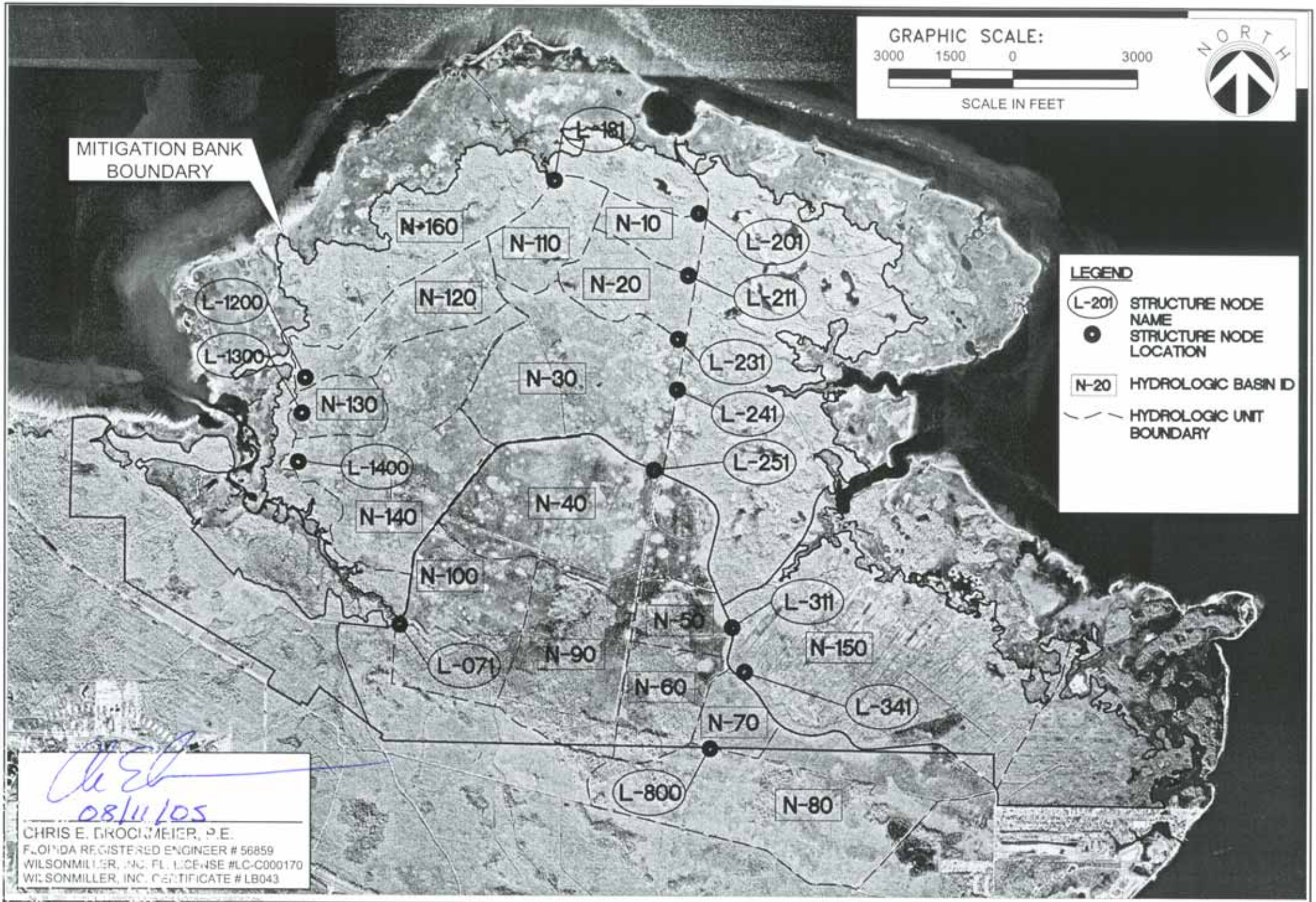
FLORIDA REGISTERED ENGINEER # 56859
WILSONMILLER, INC. FL. LICENSE #LC-C000170
WILSONMILLER, INC. CERTIFICATE # LB043

PROJECT NO. 04108-000-000	DATE: Feb. 2004	WilsonMiller	EXHIBIT 2–2	PROJECT: BREAKFAST POINT MITIGATION BANK
DRAWN BY/EMP NO. WMB/1467	SCALE: 1"=3000'			CLIENT: ST. JOE COMPANY
SHEET NUMBER: 3 OF 12	REVISION: 08/2005 TRC	Planners • Engineers • Ecologists • Surveyors • Landscape Architects • Transportation Consultants 1441 Maclay Commerce Drive, Suite 101 • Tallahassee, Florida 32312 • 850-878-5067 850-878-5941 (F) www.wilsonmiller.com		TITLE: SOILS MAP

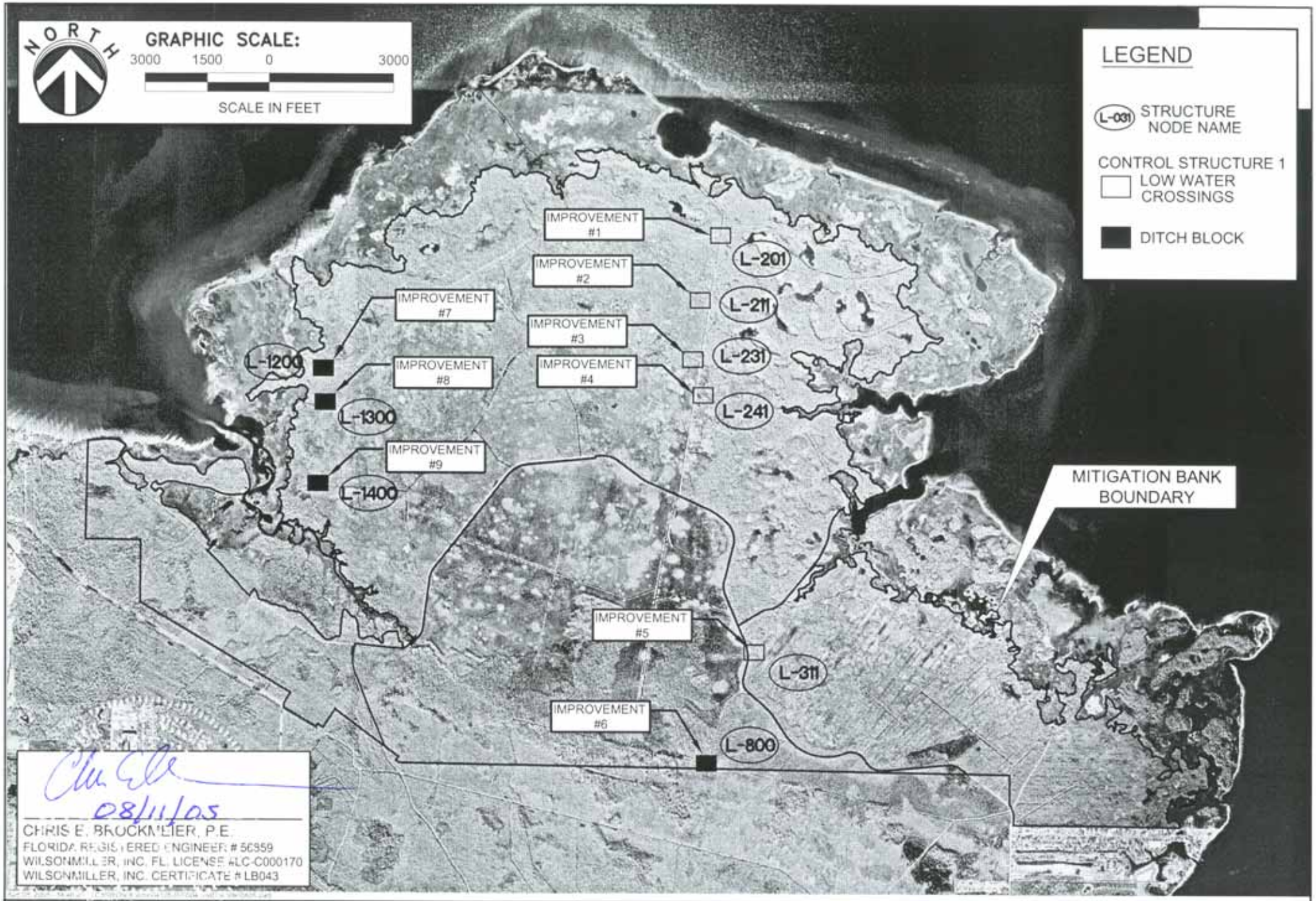


PROJECT NO 04108-000-000	DATE Feb. 2004	WilsonMiller	EXHIBIT 2-3	PROJECT: BREAKFAST POINT MITIGATION BANK
DRAWN BY:EMP NO WMB/1467	SCALE 1"=3000'			CLIENT: ST. JOE COMPANY
SHEET NUMBER 4 OF 12	REVISION 08/2005 TRC			TITLE: 100 YEAR FLOOD PLAIN MAP



08/11/05
CHRIS E. BROCKMEIER, P.E.
FLORIDA REGISTERED ENGINEER # 56859
WILSONMILLER, INC. FL LICENSE #LC-C000170
WILSONMILLER, INC. CERTIFICATE # LB043

PROJECT NO. 04108-000-000	DATE Feb. 2004	WilsonMiller	EXHIBIT 3-4	PROJECT: BREAKFAST POINT MITIGATION BANK
DRAWN BY/EMP NO. WMB/1467	SCALE 1"=3000'			CLIENT: ST. JOE COMPANY
SHEET NUMBER 7 OF 12	REVISION 08/2005 TRC			TITLE: PRIMARY STORMWATER SYSTEM MODEL SCHEMATIC



08/11/05

CHRIS E. BROCKMEIER, P.E.
FLORIDA REGISTERED ENGINEER # 56359
WILSONMILLER, INC. FL. LICENSE #LC-C000170
WILSONMILLER, INC. CERTIFICATE # LB043

PROJECT NO. 04108-000-000	DATE: Feb. 2005	WilsonMiller	EXHIBIT 4–1	PROJECT: BREAKFAST POINT MITIGATION BANK
DRAWN BY/EMP. NO. WMBM/1467	SCALE: 1" = 3000'			CLIENT: ST. JOE COMPANY
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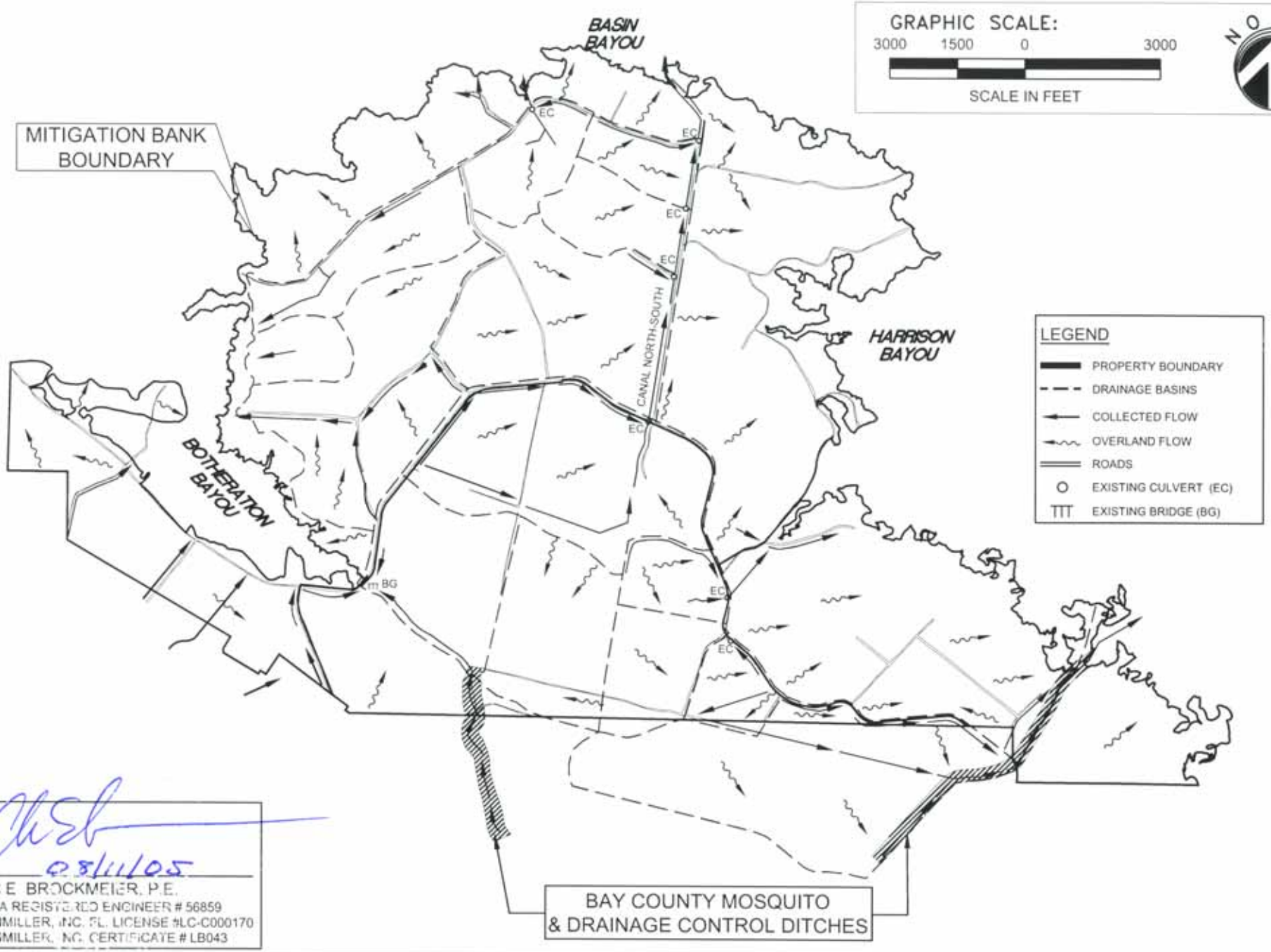

08/11/05

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FLORIDA REGISTERED ENGINEER # 56859
WILSONMILLER, INC. FL. LICENSE #LC-C000170
WILSONMILLER, INC. CERTIFICATE # LB043

PROJECT NO 04108-000-000	DATE Feb. 2004	WilsonMiller	EXHIBIT 2-4	PROJECT: BREAKFAST POINT MITIGATION BANK
DRAWN BY/EMP NO WMB/1467	SCALE 1"=3000'			CLIENT: ST. JOE COMPANY
SHEET NUMBER 5 OF 12	REVISION 08/2005 TRC			TITLE: PRECONDITION DRAINAGE FLOWS

ATTACHMENT A-10 – REFERENCES

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_____. 1993. Bay County, Florida, Comprehensive Hydric Soils List. December 14.

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ATTACHMENT A-11 – REAL-ESTATE PROVISIONS

DEED OF CONSERVATION EASEMENT

THIS DEED OF CONSERVATION EASEMENT is given this _____ day of _____, 20__, by THE ST. JOE COMPANY/ST. JOE TIMBERLAND COMPANY OF DELAWARE, L.L.C., having an address at 245 Riverside, Suite 500 Jacksonville, Florida 32202
(Grantor) to the [STATE OF FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION] or [BOARD OF TRUSTEES OF THE INTERNAL IMPROVEMENT TRUST FUND OF THE STATE OF FLORIDA (BOARD OF TRUSTEES)], whose address is Department of Environmental Protection, Division of State Lands, 3900 Commonwealth Boulevard, Mail Station 130, Tallahassee, Florida 32399-3000 (Grantee). As used herein, the term Grantor shall include any and all heirs, successors or assigns of the Grantor, and all subsequent owners of the Property (as hereinafter defined) and the term Grantee shall include any successor or assignee of Grantee.

WITNESSETH

WHEREAS, the Grantor is the sole owner in fee simple of certain lands situated in _____ County, Florida, more specifically described in Exhibit A attached hereto and incorporated herein (Property);

WHEREAS, the Department and St. Joe executed an Ecosystem Management Agreement, dated _____, (Agreement), which authorizes certain activities which affect waters in or of the State of Florida;

WHEREAS, the Agreement requires that the Grantor preserve, enhance, or restore wetlands or uplands within specified mitigation areas; and

WHEREAS, Grantor grants this conservation easement as a condition of the Agreement issued by Grantee to offset or prevent adverse impacts to water quality and natural resources, such as fish, wildlife, and wetland or other surface water functions.

WHEREAS, the U.S. Army Corps of Engineers (Army Corps) General Permit No. _____(Corps Permit) authorizes certain activities in the waters of the United States and requires this conservation easement over the lands identified in Exhibit A as part of the mitigation for such activities;

WHEREAS The Army Corps is not authorized to hold conservation easements and the Grantee has agreed to hold the easement on behalf of the Corps;

NOW THEREFORE, in consideration of the above and the mutual covenants, terms, conditions and restrictions contained herein, together with other good and valuable consideration, the adequacy and receipt of which is hereby acknowledged, Grantor hereby voluntarily grants and conveys a perpetual conservation easement, as defined in

Section 704.06, Florida Statutes, for and in favor of the Grantee upon the Property which shall run with the land and be binding upon the Grantor, and shall remain in full force and effect forever.

The scope, nature and character of this conservation easement shall be as follows:

1. Purpose. The purpose of this conservation easement is to retain land or water areas in their natural, vegetative, hydrologic, scenic, open, agricultural or wooded condition and to retain such areas as suitable habitat for fish, plants or wildlife. Those wetland or upland areas included in the conservation easement which are to be enhanced or restored pursuant to the Agreement shall be retained and maintained in the enhanced or restored conditions required by the Agreement.

2. Rights of Grantee. To carry out this purpose, the following rights are conveyed to Grantee by this easement:

a. The right to take action to restore, preserve and protect the environmental value of the Property;

b. The right to prevent any activity on or use of the Property that is inconsistent with the terms and conditions of this conservation easement, and to require the restoration of areas or features of the Property that may be damaged by any activity inconsistent with the terms and conditions of this conservation easement.

c. The right to enter upon and inspect the Property in a reasonable manner and at reasonable times, including the right to use vehicles and all necessary equipment to determine if Grantor or its successors and assigns are complying with the covenants and prohibitions contained in this conservation easement; and

d. The right to enforce this conservation easement by injunction or proceed at law or in equity to enforce the provisions of this conservation easement and the covenants set forth herein, to prevent the occurrence of any of the prohibited activities hereinafter set forth, and the right to require Grantor to restore such areas or features of the Property that may be damaged by any inconsistent activity or use.

3. Prohibited Uses. The following activities and uses are expressly prohibited, except for restoration, enhancement, maintenance and monitoring activities allowed by the provisions of Section 4:

a. Construction or placing of buildings, roads, signs, billboards or other advertising, utilities, docks, or other structures on or above the ground;

b. Dumping or placing of soil or other substance or material as landfill, or dumping or placing of trash, waste, or unsightly or offensive materials;

c. Removal or destruction of trees, shrubs, or other vegetation, except for timbering done in accordance with the St. Joe Forest and Wildlife Management Plan approved and on file with the Grantee at the time of the recording of this conservation easement and for the purpose of enhancing or restoring wetlands or uplands in the mitigation area;

d. Planting or seeding of plants that are outside its natural range or zone of dispersal and has or is able to form self-sustaining, expanding, and free-living populations in a natural community with which it has not previously associated;

e. Exploration for or extraction of oil or gas, and excavation, dredging, or removal of loam, peat, gravel, soil, rock, or other material substance in such manner as to affect the surface;

f. Surface use except for purposes that permit the land or water area to remain in its natural condition;

g. Activities detrimental to drainage, flood control, water conservation, erosion control, soil conservation, or fish and wildlife habitat preservation including, but not limited to, ditching, diking and fencing;

h. Acts or uses detrimental to such aforementioned retention of land or water areas;

i. Acts or uses detrimental to the preservation of the structural integrity or physical appearance of sites or properties of historical, architectural, archaeological, or cultural significance.

4. Authorized activities. The following activities on the Property are allowed:

a. Fire fighting or fire suppression activities;

b. Machine clearing of fire lines/fire breaks as part of controlled burn activities,
fire fighting, or fire suppression;

c. Installation of fences for land management or habitat protection purposes;

d. Removal or extermination of nuisance or exotic animal species;

e. Hunting of deer, quail and other indigenous animal species pursuant to properly issued hunting permits only where consistent with the St. Joe Hunt Plan approved by and on file with the Grantee at the time of the recording of this conservation easement;

f. Installation of signs for land management, facilitating passive recreation or habitat protection purposes;

g. Maintenance of unpaved nature trails; and

h. Installation of interpretive signs for nature trails.

5. Reserved Rights. Grantor reserves all rights as owner of the Property, including the right to engage in uses of the Property that are not prohibited herein and which are not inconsistent with the terms and conditions of this conservation easement or any Department rule, criteria, and Agreement.

6. Public Access. No right of access by the general public to any portion of the Property is conveyed by this conservation easement.

7. Responsibilities of Parties. Grantor, its successors or assigns, shall take responsibility for any costs or liabilities related to the operation, upkeep or maintenance of the Property. In addition Grantee its successors or assigns, shall have no responsibility for any costs or liabilities related to the operation, upkeep or maintenance of the Property.

8. Taxes. Grantor, its successors or assigns, shall pay before delinquency any and all taxes, assessments, fees, and charges of whatever description levied nor assessed by competent authority on the Property, and shall furnish Grantee with satisfactory evidence of payment upon request

9. Liability. Grantee shall not assume any liability for any injury or damage to the person or property of Grantor or third parties which may occur on the Property, except to the extent caused by Grantee or its employees or agents. Neither Grantor, its successors or assigns, nor any person or entity claiming by or through Grantor its successors or assigns, shall hold Grantee liable for any damage or injury to person or personal property which may occur on the Property, except to the extent caused by Grantee or its employees or agents. Furthermore, the Grantor, its successors or assigns shall indemnify and hold harmless Grantee for all liability, any injury or damage to the person or property of third parties which may occur on the Property, except to the extent caused by Grantee or its employees or agents.

10. Hazardous Waste. Grantor covenants and represents that to the best of its knowledge no hazardous substance or toxic waste exists nor has been generated, treated, stored, used, disposed of, or deposited in or on the Property, and that there are not now any underground storage tanks located on the Property.

11. Enforcement Discretion. Enforcement of the terms, provisions and restrictions of this conservation easement shall be at the reasonable discretion of Grantee, and any forbearance on behalf of Grantee to exercise its rights hereunder in the event of any breach by Grantor, shall not be deemed or construed to be a waiver of Grantee's rights.

12. Venue and Enforcement Costs. Venue to enforce the terms of this conservation easement shall be in Leon County, Florida. In the event the Army Corps takes enforcement action, venue shall be in a state or federal court of competent jurisdiction. If the Grantee prevails in an enforcement action, it shall be entitled to recover the cost of restoring the land to the natural vegetative and hydrologic condition existing at the time of execution of the conservation easement or to the vegetative and hydrologic condition required by the aforementioned Agreement.

13. Assignment of Rights. Grantee will hold this conservation easement exclusively for conservation purposes. Grantee will not assign its rights and obligations under this conservation easement except to another organization qualified to hold such interests under applicable state laws. The Army Corps reserves the right approve successor grantees for the purpose of meeting the continuing compensatory mitigation requirements of its permit or permits.

14. Recording in Land Records. Grantor shall record this conservation easement and any amendments hereto in a timely fashion in the Official Records of _____ County, Florida. Grantor shall pay all recording costs and taxes necessary to record this conservation easement in the public records.

15. Successors. The covenants, terms, conditions and restrictions of this conservation easement shall be binding upon, and inure to the benefit of the parties hereto and their respective personal representatives, heirs, successors and assigns and shall continue as a servitude running in perpetuity with the Property.

16. Notices. All notices, consents, approvals or other communications hereunder shall be in writing and shall be deemed properly given if sent by United States certified mail, return receipt requested, addressed to the appropriate party or successor-in-interest.

17. Severability. If any provision of this conservation easement or the application thereof to any person or circumstances is found to be invalid, the remainder of the provisions of this conservation easement shall not be affected thereby, as long as the purpose of the conservation easement is preserved.

18. Alteration or Revocation. This conservation easement may be amended, altered, released or revoked only by Agreement modification as necessary and written agreement between the parties hereto or their heirs, assigns or successors-in-interest, which shall be filed in the public records in _____County.

19. Controlling Law. The interpretation and performance of this conservation easement shall be governed by the laws of the State of Florida.

20. Rights of U.S. Armv Corps of Engineers. Where a corresponding general permit is issued by the U.S. Army Corps of Engineers, the Army Corps shall have all the rights of grantee under this easement. The Army Corps shall be a party to a modification, alteration, release, or revocation of the conservation easement, and shall review and

approve as necessary any additional structures or activities that require approval by the Grantee.

21. Limitation. This provision shall not be construed to entitle Grantee to bring any action against Grantor for any injury to or change in the property resulting from natural causes beyond Grantor's control including, without limitation, fire, flood, storm and earth movement, or from any necessary action taken by Grantor under emergency conditions to prevent, abate or mitigate significant injury to the property or to persons resulting from such causes.

TO HAVE AND TO HOLD unto Grantee forever. The covenants, terms, conditions, restrictions and purpose imposed with this conservation easement shall be binding upon Grantor, and shall continue as a servitude running in perpetuity with Property.

Grantor hereby covenants with said Grantee that Grantor is lawfully seized of Property in fee simple; that the Property is free and clear of all encumbrances that inconsistent with the terms of this conservation easement and all mortgages have been joined or subordinated; that Grantor has good right and lawful authority to convey conservation easement; and that it hereby fully warrants and defends the title to conservation easement hereby conveyed against the lawful claims of all persons whomsoever.

IN WITNESS WHEREOF, the Grantor has executed this Conservation Easement on the day and year first above written.

Signed, sealed and delivered
in our presence as witnesses:

_____

_____
Print Name:

By:_____
Print Name:
Title: _____

_____
Print Name:

STATE OF FLORIDA
COUNTY OF _____

The foregoing instrument was acknowledged before me this _____ day of _____, 20__, by _____ as _____ of the (corporation's name) _____ He/She is personally known to me or has produced _____ as identification.

(SEAL)

_____
Notary Public Signature

_____
Printed/Typed Name of Notary

Commission No. _____

Commission Expires: _____

ATTACHMENT A-12 – FINANCIAL ASSURANCE

STATE OF FLORIDA

MITIGATION BANK PERFORMANCE BOND
TO DEMONSTRATE CONSTRUCTION AND IMPLEMENTATION FINANCIAL ASSURANCE

Date bond executed:_____

Period of coverage:_____

Effective date:_____

Principal:

_____
Legal Name and Business Address of Mitigation Banker
_____

Type of Organization: _____ Individual
_____ Joint Venture
_____ Partnership
_____ Corporation

State of Incorporation:_____

Surety(ies): _____
Name(s) and Business Address(es)
_____

_____

_____

Scope of coverage: Construction and implementation of the _____ Mitigation Bank pursuant to the requirements of permit number _____ issued by the Florida Department of Environmental Protection including the plans approved by said permit.

Total penal sum of bond:_____

Surety's bond number:_____

Know All Persons By These Presents, that we, the Principal and Surety(ies) hereto are firmly bound to the Florida Department of Environmental Protection in the above penal sum for the payment of which we bind ourselves, our heirs, executors, administrators, successors, and assigns jointly and severally; provided that, where the Sureties are corporations acting as co-sureties, we, the Sureties, bind ourselves in such sum "jointly and severally" only for the purpose of allowing a joint action or actions against any or all of us, and for all other purposes each Surety binds itself, jointly and severally with the Principal, for the payment of such sum only as is set forth opposite the name of such Surety, but if no limit of liability is indicated, the limit of liability shall be full amount of the penal sum.

WHEREAS, said Principal is required, under Section 373.4136, Florida Statutes, as amended, to have a permit in order to construct, implement and manage the Mitigation Bank identified above, and

WHEREAS, said Principal is required by Section 373.4136, Florida Statutes, and the administrative rules of the Department to provide financial assurance for construction and implementation of the Mitigation Bank as a condition of the permit(s) as further described in the scope of coverage above, and

WHEREAS, said Principal shall establish a standby trust fund as is required when a surety bond is used to provide such financial assurance;

NOW, THEREFORE, the conditions of the obligation are such that if the Principal shall faithfully construct and implement the _____ Mitigation Bank, for which this bond guarantees construction and implementation, as required by Department permit number _____ and the plans approved by such permit, as such permit and plans may be amended, pursuant to all applicable laws, statutes, rules, and regulations, as such laws, statutes, rules, and regulations may be amended,

Or, if the Principal shall provide alternate financial assurance, as specified in the administrative rules of the Department , and obtain the Department 's written approval of such assurance, within 90 days after the date notice of cancellation is received by both the Principal and the Department from the Surety(ies), then this obligation shall be null and void, otherwise it is to remain in full force and effect.

Such obligation does not apply to any of the following:

(a) Any obligation of (insert banker's name) under a workers' compensation, disability benefits, or unemployment compensation law or other similar law;

(b) Bodily injury to an employee of (insert banker's name) arising from, and in the course of, employment by (insert banker's name);

(c) Bodily injury or property damage arising from the ownership, maintenance, use, or entrustment to others of any aircraft, motor vehicle, or watercraft;

(d) Property damage to any property owned, rented, loaned to, in the care, custody, or control of, or occupied by (insert banker's name) that is not the direct result of a construction of implementation activity for the _____ Mitigation Bank required pursuant to Department permit number _____;

(e) Bodily injury or property damage for which (insert banker's name) is obligated to pay damages by reason of the assumption of liability in a contract or agreement.

The Surety(ies) shall become liable on this bond obligation only when the Principal has failed to fulfill the conditions described above.

Upon notification by the Secretary of the Department that the Principal has been found in violation of the requirements of permit number _____ by failing to perform the construction and implementation activities for the _____ Mitigation Bank for which this bond guarantees performance, the Surety(ies) shall, within 60 days of receiving such notice, either perform such construction and implementation in accordance with the permit and other permit requirements and pursuant to the written directions of the Department, or place the bond amount guaranteed for the _____ Mitigation Bank (the total penal sum of this bond) into the standby trust fund as directed by the Department .

Upon notification by the Secretary of the Department that the Principal has failed to provide alternate financial assurance and obtain written approval of such assurance from the Department during the 90 days following receipt by both the Principal and the Department of a notice of cancellation of the bond, the Surety(ies) shall place funds in the amount guaranteed for the _____ Mitigation Bank (the total penal sum of this bond) into the standby trust fund as directed by the Department.

The Surety(ies) hereby waive(s) notification of amendments to the _____ Mitigation Bank plans, permits, applicable laws, statutes, rules, and regulations and agree(s) that no such amendment shall in any way alleviate its (their) obligation on this bond.

The liability of the Surety(ies) shall not be discharged by any payment or succession of payments hereunder, unless and until such payment or payments shall amount in the aggregate to the penal sum shown on the face of the bond, but in no event shall the obligation of the Surety(ies) hereunder exceed the amount of said penal sum.

The Surety(ies) may cancel the bond by sending notice of cancellation by certified mail to the Principal and the Department; provided, however that cancellation shall not occur during the 120 days beginning on the date of receipt of the notice of cancellation by both the Principal and the Department, as evidenced by the return receipts.

The Principal may terminate this bond by sending written notice to the Surety(ies); provided, however, that no such notice shall become effective until the Surety(ies) receive(s) written authorization for termination of the bond by the Department.

Principal and Surety(ies) hereby agree to adjust the penal sum of the bond every two years so that it guarantees increased or decreased construction and implementation cost provided that no decrease in the penal sum takes place without the written permission of the Department.

IN WITNESS WHEREOF, the Principal and Surety(ies) have executed this Performance Bond and have affixed their seals on the date set forth above.

The persons whose signatures appear below hereby certify that they are authorized to execute this surety bond on behalf of the Principal and Surety(ies) and that the wording of this Performance Bond is substantially similar to Form No. 62-342.900(1) which form has been incorporated by reference as an administrative rule in section 62-342.900 of the Florida Administrative Code.

PRINCIPAL	CORPORATE SURETY(IES) For each co-surety provide the following
_____ Signature	_____ Name and Address
_____ Type Name and Title	_____ State of Incorporation
	Liability Limit $_____
	_____ Signature
	_____ Type Name and Title
Corporate Seal	Corporate Seal

STATE OF FLORIDA

MITIGATION BANK STANDBY TRUST FUND AGREEMENT
TO DEMONSTRATE CONSTRUCTION/IMPLEMENTATION FINANCIAL ASSURANCE

TRUST AGREEMENT, the "Agreement," entered into as of _____ by and
Date
between _____
Name of Mitigation Banker
a _____ _____ (the Grantor,)
Name of State Insert "corporation, partnership, association, or proprietorship",
and _____
Name and Address of Corporate Trustee
_____(the Trustee.)
Insert "incorporated in the State of _____"or" a national bank"

WHEREAS, Grantor is the owner of certain real property in _____ County, Florida, and has received from the Florida Department of Environmental Protection ("Department") that certain permit number _____("Mitigation Bank Permit") which authorizes the construction and implementation of the _____ Mitigation Bank;

WHEREAS, the Department, a Florida agency created under section 20.255 of the Florida Statutes, has established certain regulations applicable to the Grantor, requiring that a Mitigation Bank permittee shall provide assurance that funds will be available when needed for corrective action if Grantor fails to construct and implement that Mitigation Bank,

WHEREAS, the Grantor has elected to establish _____
[insert either a "surety bond" or "letter or credit"]
to provide all or part of such financial assurance for the _____ Mitigation Bank identified herein and is required to establish a standby trust fund able to accept payments from that instrument,

WHEREAS, the Grantor, acting through its duly authorized officers, has selected the Trustee to be the trustee under this agreement, and the Trustee is willing to act as trustee,

NOW, THEREFORE, the Grantor and the Trustee agree as follows:

Section 1. Definitions. As used in this Agreement:

(a) The term "Grantor" means the _____ who enters into
[insert Mitigation Banker's name]
this Agreement and any successors or assigns of the Grantor.

(b) The term "Trustee" means _____ the Trustee who
[insert trustee's name]
enters into this Agreement and any successor Trustee.

(c) The term "Department " means the Florida Department of Environmental Protection, a public entity in the State of Florida or any successor thereof.

(d) The term "investment obligations" means:

(i) United States of America Treasury and Federal agency securities or other obligations issued or unconditionally guaranteed as to principal and interest by the United States of America, in each case with maturities of not more than one year from the date acquired;

(ii) Demand deposits, certificates of deposit, bankers acceptances and time deposits of any bank organized or licensed to conduct a banking business under the laws of the United States of America or any state thereof having capital, surplus and undivided profits of not less than $100,000,000, and whose deposits are insured by the Federal Deposit Insurance Corporation or any successor thereof;

(iii) Securities of entities incorporated under the laws of the United States of America or any State thereof commonly known as "commercial paper" that at the time of purchase have been rated and the ratings for which are not less than "P1" if rated by Moody's Investors Services, Inc., and not less than "A1" if rated by Standard and Poor's Corporation, in each case with maturities of not more than one year from the date acquired;

(iv) State or local government securities, which debt obligations at the time of purchase are rated investment grade by one or more nationally recognized rating agencies, in each case with maturities of not more than one year from the date acquired;

(v) Repurchase obligations with any banking or financial institution described in clause (ii) above which are fully collateralized at all times by any of the foregoing obligations;

(vi) Corporate fixed income securities whose ratings at the time of purchase are rated not less than "A-" if rated by Standard and Poor's Corporation and "A3" if rated by Moody's Investors Services, Inc. in each case with maturities of not more than one year from the date acquired; and

(vii) Investments in any one or more professionally managed money market funds generally regarded as investment grade with a portfolio size of not less than $100,000,000.

Section 2. Identification of Cost Estimates. This Agreement pertains to the cost estimate for construction and implementation of the _____ Mitigation Bank identified in Attachment A hereto.

Section 3. Standby Trust. This trust shall remain dormant until funded with the proceeds from the financial mechanism listed on Attachment "A". The Trustee shall have no duties or responsibilities beyond safekeeping this Document. Upon funding this trust shall become active and be administered pursuant to the terms of this instrument.

Section 4. Establishment of Fund. The Grantor and the Trustee hereby establish a trust fund (the Fund), for the benefit of the Department. The Grantor and the Trustee intend that no third party have access to the Fund except as herein provided. The Fund is established initially as a standby to receive payments and shall not consist of any property. Payments made by the Grantor pursuant to the Department's instructions are transferred to the Trustee and referred to as the Fund, together with all earnings and profits thereon, less any payments or distributions made by the Trustee pursuant to this Agreement. The Fund shall be held by the Trustee, IN TRUST for the benefit of the Department, as hereinafter provided. The Trustee shall not be responsible nor shall it undertake any responsibility for the amount or adequacy of, nor any duty to collect from the Grantor, any payments necessary to discharge any liabilities of the Grantor established by the Department.

Section 5. Initial Payments Comprising the Fund. Initial Payments made to the Trustee for the Fund shall consist of cash or securities acceptable to the Trustee and shall consist initially of proceeds from the _____ identified in
Insert "Letter of Credit" or "Surety Bond"
Attachment A hereto.

Section 6. Additional Payments to the Fund. After the initial deposit of principal into the Fund, the Grantor shall increase the principal if so required by the Department pursuant to its administrative regulations and the requirements of the Mitigation Bank Permit. Such deposit may be in cash or securities acceptable under Section 1(d) hereof.

Section 7. Payment for Completing Construction and Implementation. The Trustee shall make payments from the Fund as the Secretary of the Department, or the Secretary's designee, shall direct in writing to provide for the payment of the costs of completing construction and implementation of the Mitigation Bank covered by this Agreement pursuant to the requirements of the Mitigation Bank permit. The Trustee shall reimburse persons specified by the Department from the Fund for construction and implementation expenditures in such amounts as the Department shall direct in writing. In addition, the Trustee shall refund to the Grantor such amounts as the Department specifies in writing as unnecessary or excessive corpus for purposes of the trust. Upon refund, such funds shall no longer constitute part of the Fund as defined herein.

The Fund may not be drawn upon to cover any of the following:

(a) Any obligation of Grantor under a workers' compensation, disability benefits, or unemployment compensation law or other similar law;

(b) Bodily injury to an employee of Grantor arising from, and in the course of employment by Grantor;

(c) Bodily injury or non-realty property damage arising from the ownership, maintenance, use, or entrustment to others by Grantor of any aircraft, motor vehicle, or watercraft;

(d) Property damage to any property owned, rented, loaned to, in the care, custody, or control of, or occupied by Grantor that is not the direct result of the construction and implementation of the Mitigation Bank; or

(e) Bodily injury or property damage for which Grantor is obligated to pay damages by reason of the assumption of liability in a contract or agreement.

Section 8. Trustee Management. The Trustee shall invest and reinvest the principal and income of the Fund in one or more investment obligations and keep the Fund invested as a single fund, without distinction between principal and income, in accordance with general investment policies and guidelines. In investing, reinvesting, exchanging, selling, and managing the Fund, the Trustee shall discharge its duties with respect to the trust fund solely in the interest of the beneficiary and with the care, skill, prudence, and diligence under the circumstances then prevailing which persons of prudence, acting in a like capacity and familiar with such matters, would use in the conduct of an enterprise of a like character and with like aims; except that:

(a) Securities or other obligations of the Grantor, or any other owner or operator of the Mitigation Bank, or any of their affiliates as defined in the Investment Company Act of 1940, as amended, 15 U.S.C. 80a-2.(a), shall not be acquired or held, unless they are securities or other obligations of the Federal or a state government;

(b) The Trustee is authorized to invest the Fund in time or demand deposits of the Trustee, to the extent insured by an agency of the Federal or a state government; and

(c) The Trustee is authorized to hold cash awaiting investment or distribution uninvested for a reasonable time and without liability for the payment of interest thereon.

Section 9. Commingling and Investment. The Trustee is expressly authorized in its discretion:

(a) To transfer from time to time any or all of the assets of the Fund to any common, commingled, or collective trust fund created by the Trustee in which the Fund is eligible to participate, subject to all of the provisions thereof, to be commingled with the assets of other trusts participating therein; and

(b) To purchase shares in any investment company registered under the Investment Company Act of 1940, 15 U.S.C. 80a-1 et seq., including one which may be created, managed, underwritten, or to which investment advice is rendered or the shares of which are sold by the Trustee. The Trustee may vote such shares in its discretion.

Section 10. Express Power of Trustee. Without in any way limiting the powers and discretion conferred upon the Trustee by the other provisions of this Agreement or by law, the Trustee is expressly authorized and empowered:

(a) To sell, exchange, convey, transfer, or otherwise dispose of any property held by it, by public or private sale. No person dealing with the Trustee shall be bound to see to the application of the purchase money or to inquire into the validity or expediency of any such sale or other disposition;

(b) To make, execute, acknowledge, and deliver any and all documents of transfer and conveyance and any and all other instruments that may be necessary or appropriate to carry out the powers herein granted;

(c) To register any securities held in the Fund in its own name or in the name of a nominee and to hold any security in bearer form or in book entry, or to combine certificates representing such securities with certificates of the same issue held by the Trustee in other fiduciary capacities, or to deposit or arrange for the deposit of such securities in a qualified central depository even though, when so deposited, such securities may be merged and held in bulk in the name of the nominee of such depository with other securities deposited therein by another person, or to deposit or arrange for the deposit of any securities issued by the United States Government, or any agency or instrumentality thereof, with a Federal Reserve bank, but the books and records of the Trustee shall at all times show that all such securities are part of the Fund;

(d) To deposit any cash in the Fund in interest-bearing accounts maintained or savings certificates issued by the Trustee, in its separate corporate capacity, or in any other banking institution affiliated with the Trustee, to the extent insured by an agency of the Federal or a State government; and

(e) To compromise or otherwise adjust all claims in favor of or against the Fund.

Section 11. Taxes and Expenses. All taxes of any kind that may be assessed or levied against or in respect of the Fund and all brokerage commissions incurred by the Fund shall be paid from the Fund. All other expenses incurred by the Trustee in connection with the administration of this Trust, including fees for legal services rendered to the Trustee, the compensation of the Trustee to the extent not paid directly by the Grantor, and all other proper charges and disbursements of the Trustee shall be paid from the Fund.

Section 12. Annual Valuation. The Trustee shall annually, at least 30 days prior to the anniversary date of establishment of the Fund, furnish to the Grantor and to the Department a statement confirming the value of the Trust. Any securities in the Fund shall be valued at market value as of no more than 60 days prior to the anniversary date of establishment of the fund. The failure of the Grantor or the Department to object in writing to the Trustee within 90 days after the statement has been furnished to the Grantor and the Department shall constitute a conclusively binding assent by the Grantor, barring the Grantor from asserting any claim or liability against the Trustee with respect to matters disclosed in the statement.

Section 13. Advice of Counsel. The Trustee may from time to time consult with counsel, who may be counsel to the Grantor, with respect to any question arising as to the construction of this Agreement or any action to be taken hereunder. The Trustee shall be fully protected, to the extent permitted by law, in acting upon the advice of counsel.

Section 14. Trustee Compensation. Grantor shall pay the Trustee any necessary fees for services rendered. Where the Grantor is no longer in existence, the Trustee is authorized to charge against the Trust its published Trust fee schedule in effect at the time services are rendered. However, all Trustee compensation charged against the Trust shall be paid from trust income, unless the Department authorizes in writing payment from the trust principal.

Section 15. Successor Trustee. The Trustee may resign or the Grantor may replace the Trustee, but such resignation or replacement shall not be effective until the Grantor has appointed a successor Trustee, the successor is approved by the Department, and this successor accepts the appointment. The successor trustee shall have the same powers and duties as those conferred upon the Trustee hereunder. Upon the successor trustee's acceptance of the appointment, the Trustee shall assign, transfer, and pay over to the successor trustee the funds and properties then constituting the Fund. If for any reason the Grantor cannot or does not act in the event of the resignation of the Trustee, the Department may nominate a successor. If the Department does not act, the Trustee may apply to a court

of competent jurisdiction for the appointment of a successor trustee or for instructions. The successor trustee shall specify the date on which it assumes administration of the trust in a writing sent to the Grantor, the Department, and the present Trustee by certified mail 10 days before such change becomes effective. Any expenses incurred by the Trustee as a result of any of the acts contemplated by this Section shall be paid as provided in Section 14.

Section 16. Instructions to the Trustee. All orders, requests, and instructions by the Grantor to the Trustee shall be in writing, signed by _____ or such other designees as the Grantor may designate by amendment to this agreement. The Trustee shall be fully protected in acting without inquiry in accordance with the Grantor's orders, requests, and instructions. All orders, requests, and instructions by the Department to the Trustee shall be in writing, signed by the Department's Secretary, or the Secretary's designee, and the Trustee shall act and shall be fully protected in acting in accordance with such orders, requests, and instructions. The Trustee shall have the right to assume, in the absence of written notice to the contrary, that no event constituting a change or a termination of the authority of any person to act on behalf of the Grantor or the Department hereunder has occurred. The Trustee shall have no duty to act in the absence of such orders, requests, and instructions from the Grantor and/or the Department, except as provided for herein.

Section 17. Amendment of Agreement. This Agreement may be amended by an instrument in writing executed by the Grantor, the Trustee, and the Department, or by the Trustee and the Department if the Grantor dies, is legally incapacitated, is administratively or judicially dissolved or otherwise ceases to exist.

Section 18. Irrevocability and Termination. Subject to the right of the parties to amend this Agreement as provided in Section 17, this Trust shall be irrevocable and shall continue until terminated at the written agreement of the Grantor, the Trustee, and the Department, or by the Trustee and the Department, if the Grantor dies, is legally incapacitated, is administratively or judicially dissolved or otherwise ceases to exist. Upon termination of the Trust, all remaining trust property, less final trust administration expenses, shall be delivered pursuant to the written agreement terminating the trust or, where Grantor has ceased to exist, then to the Department.

Section 18. Immunity and Indemnification. The Trustee shall not incur personal liability of any nature in connection with any act or omission, made in good faith, in the administration of this Trust, or in carrying out any directions by the Grantor or the Department issued in accordance with this Agreement. The Trustee shall be indemnified and saved harmless by the Grantor or from the Trust Fund, or both, from and against any personal liability to which the Trustee may be subjected by reason of any act or conduct in its official capacity, including all expenses reasonably incurred in its defense in the event the Grantor fails to provide such defense.

Section 19. Choice of Law. This Agreement shall be administered, construed, and enforced according to the laws of the State of Florida.

Section 20. Interpretation. As used in this Agreement, words in the singular include the plural and words in the plural include the singular. The descriptive headings for each Section of this Agreement shall not affect the interpretation or the legal efficacy of this Agreement.

IN WITNESS WHEREOF the parties have caused this Agreement to be executed by their respective officers duly authorized and their corporate seals to be hereunto affixed and attested as of the date first above written.

_____	_____
Signature of Grantor	Signature of Trustee
_____	_____
Title	Title
Attest:	Attest:
_____	_____
Title	Title
Seal	Seal

STATE OF FLORIDA
COUNTY OF _____

The foregoing instrument was acknowledged before me this _____ day of _____, 199_, by _____, the _____ of _____, a Florida corporation, on behalf of the corporation. Such person did not take an oath and:

_____ is/are personally known to me
_____ produced a current Florida driver's license as identification
_____ produced _____ as identification

_____
Signature of Notary

(Notary Seal)

_____
Name of Notary (typed, printed or stamped)
Commission number (if not legible on seal) _____
My commission expires: (if not legible on seal) _____

STATE OF FLORIDA
COUNTY OF _____

The foregoing instrument was acknowledged before me this _____ day of _____, 199_, by _____, the _____ of _____ Bank, on behalf of the corporation. Such person did not take an oath and :

_____ is/are personally known to me
_____ produced a current Florida driver's license as identification
_____ produced _____ as identification

_____
Signature of Notary

(Notary Seal)

_____
Name of Notary (typed, printed or stamped)
Commission number (if not legible on seal) _____
My commission expires: (if not legible on seal) _____

ATTACHMENT A

[NAME OF SURETY BOND OR LETTER OF CREDIT]

STATE OF FLORIDA

MITIGATION BANK TRUST FUND AGREEMENT
TO DEMONSTRATE PERPETUAL MANAGEMENT FINANCIAL ASSURANCE

TRUST AGREEMENT, the "Agreement," entered into as of _____ by and
Date
between _____
Name of Mitigation Banker
a _____ _____ (the Grantor,)
Name of State Insert "corporation, partnership, association, or proprietorship",
and _____
Name and Address of Corporate Trustee
_____(the Trustee.)
Insert "incorporated in the State of _____"or" a national bank"

WHEREAS, Grantor is the owner of certain real property in _____ County, Florida, and has received from the Florida Department of Environmental Protection ("Department") that certain permit number _____ ("Mitigation Bank Permit") which authorizes the construction and implementation of the _____ Mitigation Bank;

WHEREAS, the Department, a Florida agency created under section 20.255 of the Florida Statutes, has established certain regulations applicable to the Grantor, requiring that a Mitigation Bank permittee shall provide assurance that funds will be available when needed for corrective action if Grantor fails to perpetually manage that Mitigation Bank pursuant to the requirements of the Mitigation Bank Permit,

WHEREAS, the Grantor has elected to establish this trust fund agreement to provide such financial assurance for the _____ Mitigation Bank identified herein,

WHEREAS, the Grantor, acting through its duly authorized officers, has selected the Trustee to be the trustee under this agreement, and the Trustee is willing to act as trustee,

NOW, THEREFORE, the Grantor and the Trustee agree as follows:

Section 1. Definitions. As used in this Agreement:

(a) The term "Grantor" means the_____ who enters into this
[insert Mitigation Banker's name]
Agreement and any successors or assigns of the Grantor.

(b) The term "Trustee" means*]*_____ the Trustee who
[insert trustee's name]
enters into this Agreement and any successor Trustee.

(c) The term "Department" means the Florida Department of Environmental Protection a public entity in the State of Florida or any successor thereof.

(d) The term "investment obligations" means:

(i) United States of America Treasury and Federal agency securities or other obligations issued or unconditionally guaranteed as to principal and interest by the United States of America, in each case with maturities of not more than one year from the date acquired;

(ii) Demand Deposits, certificates of deposit, bankers acceptances and time deposits of any bank organized or licensed to conduct a banking business under the laws of the United States of America or any state thereof having capital, surplus and undivided profits of not less than $100,000,000, and whose deposits are insured by the Federal Deposit Insurance Corporation or any successor thereof;

(iii) Securities of entities incorporated under the laws of the United States of America or any State thereof commonly known as "commercial paper" that at the time of purchase have been rated and the ratings for which are not less than "P1" if rated by Moody's Investors Services, Inc., and not less than "A1" if rated by Standard and Poor's Corporation, in each case with maturities of not more than one year from the date acquired;

(iv) State or local government securities, which debt obligations at the time of purchase are rated investment grade by one or more nationally recognized rating agencies, in each case with maturities of not more than one year from the date acquired;

(v) Repurchase obligations with any banking or financial institution described in clause (ii) above which are fully collateralized at all times by any of the foregoing obligations;

(vi) Corporate fixed income securities whose ratings at the time of purchase are rated not less than "A-" if rated by Standard and Poor's Corporation and "A3" if rated by Moody's Investors Services, Inc. in each case with maturities of not more than one year from the date acquired; and

(vii) Investments in any one or more professionally managed money market funds generally regarded as investment grade with a portfolio size of not less than $100,000,000.

Section 2. Identification of Cost Estimates. This Agreement pertains to the cost estimate for perpetual management of the _____ Mitigation Bank identified in Attachment A hereto**.**

Section 3. Establishment of Fund. The Grantor and the Trustee hereby establish a trust fund (the Fund), for the benefit of the Department (hereafter sometimes referred to as the "Beneficiary") The Grantor and the Trustee intend that no third party have access to the Fund except as herein provided. The Fund is established by the Grantor's deposit of $_____ into the Fund. Such monies and other monies subsequently placed in the Fund are referred to as the Fund, together with all earnings and profits thereon, less any payments or distributions made by the Trustee pursuant to this Agreement. The Fund shall be held by the Trustee, IN TRUST, for the benefit of the Department as hereinafter provided. The Trustee shall not be responsible nor shall it undertake any responsibility for the amount or adequacy of, nor any duty to collect from the Grantor, any payments necessary to discharge any liabilities of the Grantor established by the Department.

Section 4. Additional Payments Into the Fund. After the initial deposit of principal into the Fund, the Grantor shall increase the principal if so required by the Department pursuant to its administrative regulations and the requirements of the Mitigation Bank Permit. Such deposit may be in cash or securities acceptable under Section 1(d) hereof.

Section 5. Payment for Undertaking Perpetual Management Activities. The Trustee shall make payments from the Fund as the Grantor or the Secretarty of the Department, or the Secretary's designee, shall direct in writing to provide for the payment of the costs of undertaking activities to provide for the perpetual management of the Mitigation Bank covered by this Agreement pursuant to the requirements of the Mitigation Bank Permit. The Trustee shall reimburse persons specified by the Grantor or the Department from the Fund for perpetual management expenditures in such amounts as the Grantor or the Department shall direct in writing. In the event of conflicting instructions from the Grantor and the Department, the Department's instructions shall prevail. The Trustee shall not make any payments from the principal of the Fund pursuant to the Grantor's direction without the Department's written consent. The Trustee shall cease honoring Grantor's instructions if so directed by the Department in writing. In addition, the Trustee shall refund to the Grantor such amounts as the Department specifies in writing as unnecessary or excessive corpus for purposes of the trust. Upon refund, such funds shall no longer constitute part of the Fund as defined herein.

The Fund may not be drawn upon to cover any of the following:

(a) Any obligation of Grantor under a workers' compensation, disability benefits, or unemployment compensation law or other similar law:

(b) Bodily injury to an employee of Grantor arising from, and in the course of employment by Grantor:

(c) Bodily injury or non-realty property damage arising from the ownership, maintenance, use, or entrustment to others by Grantor of any aircraft, motor vehicle, or watercraft:

(d) Property damage to any property owned, rented, loaned to, in the care, custody, or control of, or occupied by Grantor that is not the direct result of the construction and implementation of the Mitigation Bank;

(e) Bodily injury or property damage for which Grantor is obligated to pay damages by reason of the assumption of liability in a contract or agreement.

Section 6. Trustee Management. The Trustee shall invest and reinvest the principal and income of the Fund in one or more investments and keep the Fund invested as a single fund, without distinction between principal and income, in accordance with general investment policies and guidelines which the Grantor may communicate in writing to the Trustee from time to time, subject, however, to the provisions of this Section. In investing, reinvesting, exchanging, selling, and managing the Fund, the Trustee shall discharge its duties with respect to the trust fund solely in the interest of the Department and with the care, skill, prudence, and diligence under the circumstances then prevailing which persons of prudence, acting in a like capacity and familiar with such matters, would use in the conduct of an enterprise of a like character and with like aims; except that:

(a) Securities or other obligations of the Grantor, or any other owner or operator of the Mitigation Bank, or any of their affiliates as defined in the Investment Company Act of 1940, as amended, 15 U.S.C. 80a-2.(a), shall not be acquired or held, unless they are securities or other obligations of the Federal or a state government;

(b) The Trustee is authorized to invest the Fund in time or demand deposits of the Trustee, to the extent insured by an agency of the Federal or a state government; and

(c) The Trustee is authorized to hold cash awaiting investment or distribution uninvested for a reasonable time and without liability for the payment of interest thereon.

Section 7. Commingling and Investment. The Trustee is expressly authorized in its discretion:

(a) To transfer from time to time any or all of the assets of the Fund to any common, commingled, or collective trust fund created by the Trustee in which the Fund is eligible to participate, subject to all of the provisions thereof, to be commingled with the assets of other trusts participating therein; and

(b) To purchase shares in any investment company registered under the Investment Company Act of 1940, 15 U.S.C. 80a-1 et seq., including one which may be created, managed, underwritten, or to which investment advice is rendered or the shares of which are sold by the Trustee. The Trustee may vote such shares in its discretion.

Section 8. Express Power of Trustee. Without in any way limiting the powers and discretion conferred upon the Trustee by the other provisions of this Agreement or by law, the Trustee is expressly authorized and empowered:

(a) To sell, exchange, convey, transfer, or otherwise dispose of any property held by it, by public or private sale. No person dealing with the Trustee shall be bound to see to the application of the purchase money or to inquire into the validity or expediency of any such sale or other disposition;

(b) To make, execute, acknowledge, and deliver any and all documents of transfer and conveyance and any and all other instruments that may be necessary or appropriate to carry out the powers herein granted;

(c) To register any securities held in the Fund in its own name or in the name of a nominee and to hold any security in bearer form or in book entry, or to combine certificates representing such securities with certificates of the same issue held by the Trustee in other fiduciary capacities, or to deposit or arrange for the deposit of such securities in a qualified central depository even though, when so deposited, such securities may be merged and held in bulk in the name of the nominee of such depository with other securities deposited therein by another person, or to deposit or arrange for the deposit of any securities issued by the United States Government, or any agency or instrumentality thereof, with a Federal Reserve bank, but the books and records of the Trustee shall at all times show that all such securities are part of the Fund;

(d) To deposit any cash in the Fund in interest-bearing accounts maintained or savings certificates issued by the Trustee, in its separate corporate capacity, or in any other banking institution affiliated with the Trustee, to the extent insured by an agency of the Federal or a State government; and

(e) To compromise or otherwise adjust all claims in favor of or against the Fund.

Section 9. Taxes and Expenses. All taxes of any kind that may be assessed or levied against or in respect of the Fund and all brokerage commissions incurred by the Fund shall be paid from the Fund. All other expenses incurred by the Trustee in connection with the administration of this Trust, including fees for legal services rendered to the Trustee, the compensation of the Trustee to the extent not paid directly by the Grantor, and all other proper charges and disbursements of the Trustee shall be paid from the Fund.

Section 10. Annual Valuation. The Trust shall annually, at least 30 days prior to the anniversary date of establishment of the Fund, furnish to the Grantor and to the Department a statement confirming the value of the Trust. Any securities in the Fund shall be valued at market value as of no more than 60 days prior to the anniversary date of establishment of the fund. The failure of the Grantor or the Department to object in writing to the Trustee within 90 days after the statement has been furnished to the Grantor and the Department shall constitute a conclusively binding assent by the Grantor, barring the Grantor from asserting any claim or liability against the Trustee with respect to matters disclosed in the statement.

Section 11. Advice of Counsel. The Trustee may from time to time consult with counsel, who may be counsel to the Grantor, with respect to any question arising as to the construction of this Agreement or any action to be taken hereunder. The Trustee shall be fully protected, to the extent permitted by law, in acting upon the advice of counsel.

Section 12. Trustee Compensation. Grantor shall pay the Trustee any necessary fees for services rendered. Where the Grantor is no longer in existence, the Trustee is authorized to charge against the Trust its published Trust fee schedule in effect at the time services are rendered. However, all Trustee compensation charged against the Trust shall be paid only from trust income unless the Department authorizes payment from the trust principal in writing.

Section 13. Successor Trustee. The Trustee may resign or the Grantor may replace the Trustee, but such resignation or replacement shall not be effective until the Grantor has appointed a successor Trustee, the successor is approved by the Department, and this successor accepts the appointment. The successor trustee shall have the same powers and duties as those conferred upon the Trustee hereunder. Upon the successor trustee's acceptance of the appointment, the Trustee shall assign, transfer, and pay over to the successor trustee the funds and properties then constituting the Fund. If for any reason the Grantor cannot or does not act in the event of the resignation of the Trustee, the Department may nominate a successor. If the Department does not act, the Trustee may apply to a court of competent jurisdiction for the appointment of a successor trustee or for instructions. The successor trustee shall specify the date on which it assumes administration of the trust in a writing sent to the Grantor, the Department, and the present Trustee by certified mail 10 days before such change becomes effective. Any expenses incurred by the Trustee as a result of any of the acts contemplated by this Section shall be paid as provided in Section 12.

Section 14. Instructions to the Trustee. All orders, requests, and instructions by the Grantor to the Trustee shall be in writing, signed by _____ or such other designees as the Grantor may designate by amendment to this agreement. The Trustee shall be fully protected in acting without inquiry in accordance with the Grantor's orders, requests, and instructions. All orders, requests, and instructions by the Department to the Trustee shall be in writing,

signed by the Department's Secretary, or the Secretary's designee, and the Trustee shall act and shall be fully protected in acting in accordance with such orders, requests, and instructions. The Trustee shall have the right to assume, in the absence of written notice to the contrary, that no event constituting a change or a termination of the authority of any person to act on behalf of the Grantor or the Department hereunder has occurred. The Trustee shall have no duty to act in the absence of such orders, requests, and instructions from the Grantor and/or the Department, except as provided for herein.

Section 15. Amendment of Agreement. This Agreement may be amended by an instrument in writing executed by the Grantor, the Trustee, and the Department, or by the Trustee and the Department if the Grantor dies, is legally incapacitated, is administratively or judicially dissolved or otherwise ceases to exist.

Section 16. Irrevocability and Termination. Subject to the right of the parties to amend this Agreement as provided in Section 15, this Trust shall be irrevocable and shall continue until terminated at the written agreement of the Grantor, the Trustee, and the Department, or by the Trustee and the Department, if the Grantor dies, is legally incapacitated, is administratively or judicially dissolved or otherwise ceases to exist. Upon termination of the Trust, all remaining trust property, less final trust administration expenses, shall be delivered pursuant to the written agreement terminating the trust or where Grantor has ceased to exist, then to the Department.

Section 17. Immunity and Indemnification. The Trustee shall not incur personal liability of any nature in connection with any act or omission, made in good faith, in the administration of this Trust, or in carrying out any directions by the Grantor or the Department issued in accordance with this Agreement. The Trustee shall be indemnified and saved harmless by the Grantor or from the Trust Fund, or both, from and against any personal liability to which the Trustee may be subjected by reason of any act or conduct in its official capacity, including all expenses reasonably incurred in its defense in the event the Grantor fails to provide such defense.

Section 18. Choice of Law. This Agreement shall be administered, construed, and enforced according to the laws of the State of Florida.

Section 19. Interpretation. As used in this Agreement, words in the singular include the plural and words in the plural include the singular. The descriptive headings for each Section of this Agreement shall not affect the interpretation or the legal efficacy of this Agreement.

IN WITNESS WHEREOF the parties have caused this Agreement to be executed by their respective officers duly authorized and their corporate seals to be hereunto affixed and attested as of the date first above written.

_____	_____
Signature of Grantor	Signature of Trustee
_____	_____
Title	Title
Attest:	Attest:
_____	_____
Title	Title
Seal	Seal

STATE OF FLORIDA
COUNTY OF _____

The foregoing instrument was acknowledged before me this _____ day of _____, 199_, by _____, the _____ of _____, a Florida corporation, on behalf of the corporation. Such person did not take an oath and:

_____ is/are personally known to me
_____ produced a current Florida driver's license as identification
_____ produced _____ as identification

_____
Signature of Notary

(Notary Seal)

_____
Name of Notary (typed, printed or stamped)
Commission number (if not legible on seal) _____
My commission expires: (if not legible on seal) _____

STATE OF FLORIDA
COUNTY OF _____

The foregoing instrument was acknowledged before me this _____ day of _____, 199_, by _____, the _____ of _____ Bank, on behalf of the corporation. Such person did not take an oath and :

_____ is/are personally known to me
_____ produced a current Florida driver's license as identification
_____ produced _____ as identification

_____
Signature of Notary

(Notary Seal)

_____
Name of Notary (typed, printed or stamped)
Commission number (if not legible on seal) _____
My commission expires: (if not legible on seal) _____

ATTACHMENT A

PERPETUAL MANAGEMENT COST ESTIMATE

STATE OF FLORIDA

MITIGATION BANK STANDBY TRUST FUND AGREEMENT
TO DEMONSTRATE PERPETUAL MANAGEMENT FINANCIAL ASSURANCE

TRUST AGREEMENT, the "Agreement," entered into as of _____ by and
Date
between _____
Name of Mitigation Banker
a _____ _____ (the Grantor,)
Name of State Insert "corporation, partnership, association, or proprietorship",
and _____
Name and Address of Corporate Trustee
_____(the Trustee.)
Insert "incorporated in the State of _____"or" a national bank"

WHEREAS, Grantor is the owner of certain real property in _____ County, Florida, and has received from the Florida Department of Environmental Protection ("Department ") that certain permit number 4-_____ ("mitigation bank permit") which authorizes the construction and implementation of the _____ Mitigation Bank;

WHEREAS, the Department , a Florida public entity created under Chapter 373, Florida Statutes, has established certain regulations applicable to the Grantor, requiring that a mitigation bank permittee shall provide assurance that funds will be available when needed for corrective action if Grantor fails to perpetually manage that mitigation bank pursuant to the requirements of the mitigation bank permit,

WHEREAS, the Grantor has elected to establish_____
[insert either a "surety bond" or "letter or credit"]
to provide the perpetual management financial assurance for the _____ Mitigation Bank identified herein and is required to establish a standby trust fund able to accept payments from that instrument,

WHEREAS, the Grantor, acting through its duly authorized officers, has selected the Trustee to be the trustee under this agreement, and the Trustee is willing to act as trustee,

NOW, THEREFORE, the Grantor and the Trustee agree as follows:

Section 1. Definitions. As used in this Agreement:

(a) The term "Grantor" means _____the who enters into this Agreement and
[insert mitigation banker's name]
any successors or assigns of the Grantor.

(b) The term "Trustee" means _____ the Trustee who enters into this Agreement
[insert trustee's name]
and any successor Trustee.

(c) The term "Department " means the Florida Department of Environmental Protection a public entity in the State of Florida or any successor thereof.

(d) The term "investment obligations" means:

(i) United States of America Treasury and Federal agency securities or other obligations issued or unconditionally guaranteed as to principal and interest by the United States of America, in each case with maturities of not more than one year from the date acquired;

(ii) Demand deposits, certificates of deposit, bankers acceptance and time deposits of any bank organized or licensed to conduct a banking business under the laws of the United States of America or any state thereof having capital, surplus and undivided profits of not less than $100,000,000, and whose deposits are insured by the Federal Deposit Insurance Corporation or any successor thereof;

(iii) Securities of entities incorporated under the laws of the United States of America or any State thereof commonly known as "commercial paper" that at the time of purchase have been rated and the ratings for which are not less than "P1" if rated by Moody's Investors Service, Inc., and not less than "A1" if rated by Standard and Poor's Corporation, in each case with maturities of not more than one year from the date acquired;

(iv) State or local government securities, which debt obligations at the time of purchase are rated investment grade by one or more nationally recognized rating agencies, in each case with maturities of not more than one year from the date acquired;

(v) Repurchase obligation with any banking or financial institution described in clause (ii) above which are fully collateralized at all times by any of the foregoing obligations;

(vi) Corporate fixed income securities whose ratings at the time of purchase are rated not less than "A-" if rated by Standard and Poor's Corporation and "A3" if rated by Moody's Investors Service, Inc. in each case with maturities of not more than one year from the date acquired; and (vii) Investments in any one or more professionally managed money market funds generally regarded as investment grade with a portfolio size of not less than $100,000,000.

Section 2. Identification of Cost Estimates. This Agreement pertains to the cost estimate for perpetual management of the _____Mitigation Bank identified in Attachment A hereto.

Section 3. Standby Trust. This trust shall remain dormant until funded with the proceeds from the financial mechanism listed on Attachment "A". The Trustee shall have no duties or responsibilities beyond safekeeping this document. Upon funding this trust shall become active and be administered pursuant to the terms of this instrument.

Section 4. Establishment of Fund. The Grantor and the Trustee hereby establish a trust fund (the Fund), for the benefit of the Department (hereafter sometimes referred to as the "Beneficiary") The Grantor and the Trustee intend that no third party have access to the Fund except as herein provided. The Fund is established initially as a standby to receive payments and shall not consist of any property. Payments made by the Grantor pursuant to the Department 's instructions are transferred to the Trustee and referred to as the Fund, together with all earnings and profits thereon, less any payments or distributions made by the Trustee pursuant to this Agreement. The Fund shall be held by the Trustee, IN TRUST, for the benefit of the Department as hereinafter provided. The Trustee shall not be responsible nor shall it undertake any responsibility for the amount or adequacy of, nor any duty to collect from the Grantor, any payments necessary to discharge any liabilities of the Grantor established by the Department .

Section 5. Initial Payments Comprising the Fund. Initial payments made to the Trustee for the Fund shall consist of cash or securities acceptable to the Trustee and shall consist solely of proceeds from the_____ identified in
[Insert "Letter of Credit" or "Surety Bond"]
Attachment A hereto.

Section 6. Additional Payments Into the Fund. After the initial deposit of principal into the Fund, the Grantor shall increase the principal if so required by the Department pursuant to its administrative regulations and the requirements of the mitigation bank permit. Such deposit may be in cash or Securities acceptable under Section 1(d) hereof.

Section 7. Payment for Undertaking Perpetual Management Activities. The Trustee shall make payments from the Fund as the Secretary of the Department or the Secretary's designee shall direct in writing, to provide for the payment of the costs of undertaking activities to provide for the perpetual management of the mitigation bank covered by this Agreement pursuant to the requirements of the mitigation bank permit. The Trustee shall reimburse persons specified by the Department from the Fund for perpetual management expenditures in such amounts as the Department shall direct in writing. In addition, the Trustee shall refund to the Grantor such amounts as the

Department specifies in writing as unnecessary or excessive corpus for purposes of the trust. Upon refund, such funds shall no longer constitute part of the Fund as defined herein.

The Fund may not be drawn upon to cover any of the following:

(a) Any obligation of Grantor under a workers' compensation, disability benefits, or unemployment compensation law or other similar law:

(b) Bodily injury to an employee of Grantor arising from, and in the course of employment by Grantor.

(c) Bodily injury or non-realty property damage arising from the ownership, maintenance, use, or entrustment to others by Grantor of any aircraft, motor vehicle, or watercraft:

(d) Property damage to any property owned, rented, loaned to, in the care, custody, or control of, or occupied by Grantor that is not the direct result of the construction and implementation of the mitigation bank;

(e) Bodily injury or property damage for which Grantor is obligated to pay damages by reason of the assumption of liability in a contract or agreement.

Section 8. Trustee Management. The Trustee shall invest and reinvest the principal and income of the Fund in one or more investments and keep the Fund invested as a single fund, without distinction between principal and income, in accordance with general investment policies and guidelines which the Grantor may communicate in writing to the Trustee from time to time, subject, however, to the provisions of this Section. In investing, reinvesting, exchanging, selling, and managing the Fund, the Trustee shall discharge its duties with respect to the trust fund solely in the interest of the Department and with the care, skill, prudence, and diligence under the circumstances then prevailing which persons of prudence, acting in a like capacity and familiar with such matters, would use in the conduct of an enterprise of a like character and with like aims; except that:

(a) Securities or other obligations of the Grantor, or any other owner or operator of the mitigation bank, or any of their affiliates as defined in the Investment Company Act of 1940, as amended, 15 U.S.C. 80a-2.(a), shall not be acquired or held, unless they are securities or other obligations of the Federal or a state government;

(b) The Trustee is authorized to invest the Fund in time or demand deposits of the Trustee, to the extent insured by an agency of the Federal or a state government; and

(c) The Trustee is authorized to hold cash awaiting investment or distribution uninvested for a reasonable time and without liability for the payment of interest thereon.

Section 9. Commingling and Investment. The Trustee is expressly authorized in its discretion:

(a) To transfer from time to time any or all of the assets of the Fund to any common, commingled, or collective trust fund created by the Trustee in which the Fund is eligible to participate, subject to all of the provisions thereof, to be commingled with the assets of other trusts participating therein; and

(b) To purchase shares in any investment company registered under the Investment Company Act of 1940, 15 U.S.C. 80a-1 et seq., including one which may be created, managed, underwritten, or to which investment advice is rendered or the shares of which are sold by the Trustee. The Trustee may vote such shares in its discretion.

Section 10. Express Power of Trustee. Without in any way limiting the powers and discretion conferred upon the Trustee by the other provisions of this Agreement or by law, the Trustee is expressly authorized and empowered:

(a) To sell, exchange, convey, transfer, or otherwise dispose of any property held by it, by public or private sale. No person dealing with the Trustee shall be bound to see to the application of the purchase money or to inquire into the validity or expediency of any such sale or other disposition;

(b) To make, execute, acknowledge, and deliver any and all documents of transfer and conveyance and any and all other instruments that may be necessary or appropriate to carry out the powers herein granted;

(c) To register any securities held in the Fund in its own name or in the name of a nominee and to hold any security in bearer form or in book entry, or to combine certificates representing such securities with certificates of the same issue held by the Trustee in other fiduciary capacities, or to deposit or arrange for the deposit of such securities in a qualified central depository even though, when so deposited, such securities may be merged and held in bulk in the name of the nominee of such depository with other securities deposited therein by another person, or to deposit or arrange for the deposit of any securities issued by the United States Government, or any agency or instrumentality thereof, with a Federal Reserve bank, but the books and records of the Trustee shall at all times show that all such securities are part of the Fund;

(d) To deposit any cash in the Fund in interest-bearing accounts maintained or savings certificates issued by the Trustee, in its separate corporate capacity, or in any other banking institution affiliated with the Trustee, to the extent insured by an agency of the Federal or a State government; and

(e) To compromise or otherwise adjust all claims in favor of or against the Fund.

Section 11. Taxes and Expenses. All taxes of any kind that may be assessed or levied against or in respect of the Fund and all brokerage commissions incurred by the Fund shall be paid from the Fund. All other expenses incurred by the Trustee in connection with the administration of this Trust, including fees for legal services rendered to the Trustee, the compensation of the Trustee to the extent not paid directly by the Grantor, and all other proper charges and disbursements of the Trustee shall be paid from the Fund.

Section 12. Annual Valuation. The Trust shall annually, at least 30 days prior to the anniversary date of establishment of the Fund, furnish to the Grantor and to the Department a statement confirming the value of the Trust. Any securities in the Fund shall be valued at market value as of no more than 60 days prior to the anniversary date of establishment of the fund. The failure of the Grantor or the Department to object in writing to the Trustee within 90 days after the statement has been furnished to the Grantor and the Department shall constitute a conclusively binding assent by the Grantor, barring the Grantor from asserting any claim or liability against the Trustee with respect to matters disclosed in the statement.

Section 13. Advice of Counsel. The Trustee may from time to time consult with counsel, who may be counsel to the Grantor, with respect to any question arising as to the construction of this Agreement or any action to be taken hereunder. The Trustee shall be fully protected, to the extent permitted by law, in acting upon the advice of counsel.

Section 14. Trustee Compensation. Grantor shall pay the Trustee any necessary fees for services rendered. Where the Grantor is no longer in existence, the Trustee is authorized to charge against the Trust its published Trust fee schedule in effect at the time services are rendered. However, all Trustee compensation charged against the Trust shall be paid from trust income unless the Department authorizes payment from the trust principal in writing.

Section 15. Successor Trustee. The Trustee may resign or the Grantor may replace the Trustee, but such resignation or replacement shall not be effective until the Grantor has appointed a successor Trustee, the successor is approved by the Department , and this successor accepts the appointment. The successor trustee shall have the same powers and duties as those conferred upon the Trustee hereunder. Upon the successor trustee's acceptance of the appointment, the Trustee shall assign, transfer, and pay over to the successor trustee the funds and properties then constituting the Fund. If for any reason the Grantor cannot or does not act in the event of the resignation of the Trustee, the Department may nominate a successor. If the Department does not act, the Trustee may apply to a court of competent jurisdiction for the appointment of a successor trustee or for instructions. The successor trustee shall specify the date on which it assumes administration of the trust in a writing sent to the Grantor, the Department , and the present Trustee by certified mail 10 days before such change becomes effective. Any expenses incurred by the Trustee as a result of any of the acts contemplated by this Section shall be paid as provided in Section 12.

Section 16. Instructions to the Trustee. All orders, requests, and instructions by the Grantor to the Trustee shall be in writing, signed by _____ or such other designees as the Grantor may designate by amendment

to this agreement. The Trustee shall be fully protected in acting without inquiry in accordance with the Grantor's orders, requests, and instructions. All orders, requests, and instructions by the Department to the Trustee shall be in writing, signed by the Department's Secretary, or the Secretary's designee, and the Trustee shall act and shall be fully protected in acting in accordance with such orders, requests, and instructions. The Trustee shall have the right to assume, in the absence of written notice to the contrary, that no event constituting a change or a termination of the authority of any person to act on behalf of the Grantor or the Department hereunder has occurred. The Trustee shall have no duty to act in the absence of such orders, requests, and instructions from the Grantor and/or the Department, except as provided for herein.

Section 17 Amendment of Agreement. This Agreement may be amended by an instrument in writing executed by the Grantor, the Trustee, and the Department, or by the Trustee and the Department if the Grantor dies, is legally incapacitated, is administratively or judicially dissolved or otherwise ceases to exist.

Section 18. Irrevocability and Termination. Subject to the right of the parties to amend this Agreement as provided in Section 15, this Trust shall be irrevocable and shall continue until terminated at the written agreement of the Grantor, the Trustee, and the Department , or by the Trustee and the Department , if the Grantor dies, is legally incapacitated, is administratively or judicially dissolved or otherwise ceases to exist. Upon termination of the Trust, all remaining trust property, less final trust administration expenses, shall be delivered pursuant to the written agreement terminating the trust or, where Grantor has ceased to exist, then to the Department.

Section 19. Immunity and Indemnification. The Trustee shall not incur personal liability of any nature in connection with any act or omission, made in good faith, in the administration of this Trust, or in carrying out any directions by the Grantor or the Department issued in accordance with this Agreement. The Trustee shall be indemnified and saved harmless by the Grantor or from the Trust Fund, or both, from and against any personal liability to which the Trustee may be subjected by reason of any act or conduct in its official capacity, including all expenses reasonably incurred in its defense in the event the Grantor fails to provide such defense.

Section 20. Choice of Law. This Agreement shall be administered, construed, and enforced according to the laws of the State of Florida.

Section 21. Interpretation. As used in this Agreement, words in the singular include the plural and words in the plural include the singular. The descriptive headings for each Section of this Agreement shall not affect the interpretation or the legal efficacy of this Agreement.

IN WITNESS WHEREOF the parties have caused this Agreement to be executed by their respective officers duly authorized and their corporate seals to be hereunto affixed and attested as of the date first above written.

_____	_____
Signature of Grantor	Signature of Trustee
_____	_____
Title	Title
Attest:	Attest:
_____	_____
Title	Title
Seal	Seal

STATE OF FLORIDA
COUNTY OF _____

The foregoing instrument was acknowledged before me this _____ day of _____, 199_, by _____, the _____ of _____, a Florida corporation, on behalf of the corporation. Such person did not take an oath and:

_____ is/are personally known to me
_____ produced a current Florida driver's license as identification
_____ produced _____ as identification

_____
Signature of Notary

(Notary Seal)

_____
Name of Notary (typed, printed or stamped)
Commission number (if not legible on seal) _____
My commission expires: (if not legible on seal) _____

STATE OF FLORIDA
COUNTY OF _____

The foregoing instrument was acknowledged before me this _____ day of _____, 199_, by _____, the _____ of _____ Bank, on behalf of the corporation. Such person did not take an oath and :

_____ is/are personally known to me
_____ produced a current Florida driver's license as identification
_____ produced _____ as identification

_____
Signature of Notary

(Notary Seal)

_____
Name of Notary (typed, printed or stamped)
Commission number (if not legible on seal) _____
My commission expires: (if not legible on seal) _____

ATTACHMENT A

SURETY BOND OR IRREVOCABLE LETTER OF CREDIT

ATTACHMENT A-13 – HUNTING LEASE CONDITIONS

1) Hunting leases will be reviewed every two years to assure that activities are not contrary to the overall mitigation bank goals. Hunting is being allowed because of the stewardship history and security benefits ed by the hunt Clubs. These conditions are tied into the Mitigation Bank Security Plan. It is expected that hunt club members shall function as the primary security apparatus in place for this area. Conditions are subject to modification pending evaluation of bi-annual reviews.

2) Hunting leases authorize access for hunt club members and their supervised guests for hunting, fishing and security checks only. Hunting pressure is limited to one hunter per 150 acres. Low intensity and frequency visitation by individuals not associated with the hunt lease may occur that would not negatively affect the integrity of the mitigation bank project may occur.

3) All club members and their guest must abide by all State and Federal laws and regulations regarding the taking of fish and wildlife. Additional restrictions on the taking and reporting of game species are specified below:

   a) Hunting is restricted to the following species:
      1. White-tailed deer
      2. Feral hog
      3. Wild turkey
      4. Gray squirrel
      5. Mourning and white-winged dove
      6. Coyote

      Only these species may be hunted. No other game or non-game species may be hunted, taken, harassed or otherwise disturbed. This applies to all other species including reptiles and amphibians.

   b) All leases are required to participate in a Quality Deer Management program that protects young bucks. Harvest regulations must require bucks to have at least one branched antler to be legal to take.

   c) Leases must participate in the FWC antlerless deer program.

   d) The use of dogs to hunt deer and hogs is authorized during day light hours only. All dogs are required to be caught and removed from the area by the end of each day.

   e) Only adult male turkeys are legal to take.

   f) There is no size restriction, bag limit or season on the taking of feral hogs.

   g) All other legal game can be harvested according to State and Federal seasons and bag limits. Additional harvest restrictions may be established depending on harvest reports.

   h) An annual harvest report must be submitted to St. Joe Timberland Company no later than June 1 of each year.

4) No modification or disturbance of habitats is allowed.

5) Off-road use of 4X4 or ATV vehicles is prohibited. Vehicles use is restricted to named/numbered roads. The only allowable uses for vehicles are hunting, fishing and security checks.

6) St. Joe Timberland Company shall convene an annual meeting with all hunt clubs leasing property within the area to educate club members on the goals of the mitigation bank, area regulations and review compliance with these conditions.

7) No hunting is allowed within 750 feet of any bald eagle nest. “No trespassing” signs will be posted along the perimeter of these zones.

ATTACHMENT A-14 – IMPLEMENTATION COST ESTIMATE

Breakfast Point Mitigation Bank Implementation Costs

Phase	Task	Units	2004	2005	2006	2007	2008	2009	2010	2011
1	Burn	1046	$28,775		$28,775		$28,775			
1	Selective Logging	801	$0							
1	Hydrologic improvements									
1	Install culvert stoplogs	1	$5,000							
1	Construct low water crossings/weirs	1			$20,000					
1	Ditch blocks	1	$5,000							
1	Install surface water gage	2	$6,000							
1	Install monitoring well	3	$3,000							
1	Install rain gage	1	$2,500							
1	monitor & adjust stoplogs	1	$4,680	$4,680	$4,680					
1	Planting		$2,165							
1	Aerial photography of site		$235	$235	$235	$235	$235			
1	Exotic control	1072	$2,000	$2,000	$2,000	$2,000	$2,000			
1	Install gates	4	$7,500							
1	Monitoring and reporting	1072	$35,376	$35,376	$35,376	$35,376	$35,376			
1	**Subtotal**		**$102,231**	**$42,291**	**$91,066**	**$37,611**	**$66,386**	**$0**	**LTM[2]**	**LTM**
2	Burn	2280		$62,686		$62,686		$62,686		
2	Selective Logging	2139		$0						
2	Hydrologic improvements									
	Install culvert	1		$1,000						
2	Install culvert stoplogs	3		$15,000						
2	Construct low water crossings/weirs	4				$80,000				
2	Ditch blocks	3		$15,000						
2	Install surface water gage	2		$6,000						
2	Install monitoring well	3		$3,000						
2	monitor & adjust stoplogs	1		$4,680	$4,680	$4,680				
2	Aerial photography of site		$235	$235	$235	$235	$235	$235		
2	Exotic control	2322		$1,000	$1,000	$1,000	$1,000	$1,000		
2	Monitoring and reporting	2322		$76,626	$76,626	$76,626	$76,626	$76,626		
2	**Subtotal**			**$185,227**	**$82,541**	**$225,227**	**$77,861**	**$140,547**	**LTM**	**LTM**
3	Burn	812			$22,338		$22,338			
3	Selective Logging	762			$0					
3	Hydrologic improvements									
3	Install culverts	1								
3	Construct low water crossings/weirs	1								
3	Ditch blocks	1			$600					
3	Install surface water gage	1			$0					
3	Install monitoring well	1			$20,000					
3	monitor & adjust stoplogs	1			$4,680	$4,680	$4,680			

Breakfast Point Mitigation Bank Implementation Costs

Phase	Task	Units	2004	2005	2006	2007	2008	2009	2010	2011
3	Aerial photography of site			$235	$235	$235	$235	$235	$235	
3	Exotic control	824			$2,000	$2,000	$2,000	$2,000	$2,000	
3	Monitoring and reporting	824			$27,192	$27,192	$27,192	$27,192	$27,192	
3	**Subtotal**				**$77,045**	**$34,107**	**$56,445**	**$29,427**	**$29,427**	**LTM**
4	Burn	408				$11,232		$11,232		
4	Selective Logging	339				$0				
4	Aerial photography of site					$235	$235	$235	$235	$235
4	Exotic control	418				$2,000	$2,000	$2,000	$2,000	$2,000
4	Monitoring and reporting	418				$13,794	$13,794	$13,794	$13,794	$13,794
4	**Subtotal**					**$27,261**	**$16,029**	**$27,261**	**$16,029**	**$16,029**
	Annual Total		$102,231	$227,518	$250,652	$324,206	$216,721	$197,235	$45,456	$16,029
					Grand total:		**$1,380,048**			

NOTES:

1Burning will occur on this schedule unless drought or lack of fuel prevents the use of prescribed fire at that time. In such cases, fire will be applied as soon as reasonably and safely possible.

2LTM = Long term (perpetual) management phase

Section 9 - Ongoing Tasks and Cost, Perpetual Management

Property Title: Final Breakfast Point PAR | Dataset: FL001 | PAR ID: 0410802F | 02/10/2004

Budget: PAR

Task list	Specificaton	Unit	Number of Units	Cost / Unit	Annual Cost	Divide Years	Total Cost
HABITAT MAINTENANCE							
Exotic Plant Control	Herbicide 41% con.	Gal.	10.00	108.60	1,086.00	1	1,086.00
Exotic Plant Control	Herbicide	Gal.	10.00	17.50	175.00	1	175.00
Exotic Plant Control	Backpack Spray	L. Hours	32.00	25.00	800.00	1	800.00
Controlled Burning	Helitorch, avg. ac. per year	Acre	1,092.00	27.50	30,030.00	1	30,030.00
Fire Breaks	Maintenance	L. Hours	8.00	15.00	120.00	1	120.00
Sub-Total							32,211.00
WATER MANAGEMENT							
Water Control	Weir Maintenance	L. Hours	60.00	15.00	900.00	1	900.00
Water Control	Weir	Item	6.00	15,000.00	90,000.00	35	2,571.43
Sub-Total							3,471.43
GENERAL MAINTENANCE							
Other	Fence & gate repair/replace	Item	1.00	1,000.00	1,000.00	1	1,000.00
Sub-Total							1,000.00
REPORTING							
Photodocumentation	Field Survey	L. Hours	16.00	45.00	720.00	1	720.00
Aerial Photo, 2 sets color	Infrared 9"x 9"	Flight	1.00	899.00	899.00	5	179.80
Monitoring Reports	Monitoring Documentation	L. Hours	96.00	45.00	4,320.00	1	4,320.00
Sub-Total							5,219.80
OFFICE MAINTENANCE							
Taxes and Fees	Property or District	Year	1.00	11,288.00	11,288.00	1	11,288.00
Sub-Total							11,288.00
CONTINGENCY & ADMINISTRATION							
Contingency							5,319.02
Administration							12,872.04
Sub-Total							18,191.06
Total							71,381.29

Chris E. Brockmeier
2/09/04
CHRIS E. BROCKMEIER, P.E.
FLORIDA REGISTERED ENGINEER # 56859
WILSONMILLER, INC. FL. LICENSE #LC-C000170
WILSONMILLER, INC. CERTIFICATE # LB043

PAR(0 ac.)

	Rate %	Total $
INITIAL FINANCIAL REQUIREMENTS		

Initial costs are attached.

ANNUAL ONGOING FINANCIAL REQUIREMENTS (BASED ON 99 YEARS OF MANAGEMENT)		
Ongoing Costs		52,830
Ongoing Contingency Expense	10.00	5,283
Total Ongoing Management Costs		58,113
Ongoing Administrative Costs of Total Ongoing Management costs	22.00	12,785
Total Ongoing Costs		70,898
ENDOWMENT REQUIREMENTS FOR ONGOING STEWARDSHIP		
Endowment to Provide Income of $ 70,898		1,417,960
Endowment per Acre is $ NA*		
Ongoing Management Costs Based on 5.00% of Endowment per Year.		
Ongoing Management Funding is $ 70,898 per Year Resulting in $NA* per Acre per Year.		
TOTAL CONTRIBUTION		1,417,960

* No acreage input; per acre figures not applicable

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ATTACHMENT A-16 – PRINCIPLES OF FOREST AND WILDLIFE MANAGEMENT

Principles for Forest and Wildlife Management of Conservation Units within the Regional General Permit Area and Ecosystem Management Area

Prepared by:
Kevin Smith, Steve Shea and Jim Moyers
St. Joe Timberland Company

Purpose

To provide an outline for forest and wildlife management within the Conservation Units (CUs) included in the West Bay to East Walton Regional General Permit and Ecosystem Management Agreement (GP/EMA) areas. This document provides the frame-work that will guide the development of future land management plans for CUs.

Methodology

Using the Revised Land and Resource Management Plan for National Forests in Florida and the Cecil Field Timber Management Plan as a framework, the guidelines will prescribe forest and wildlife management strategies that enhance conservation, habitat restoration, and ecological functions within the CUs.

History

The primary land management goal for most of the GP/EMA area historically has been the production of forest products. Intensive silvicultural management of slash pine (Pinus elliottii) and sand pine (P. clausa) plantations has occurred on the CUs for the past 30 to 40 years. Silvicultural practices implemented on the area include clear-cutting, roller chopping, site-preparation burning, bedding, planting, and fertilization. Most stands within the GP/EMA area have been through one or more rotations of planted pine. While forest management practices have degraded the natural habitats of many uplands and wetlands, some wetlands within the CUs have experienced little or no silvicultural impacts.

Prescribed Management

The primary forest management objective for this area is to prescribe management activities that will restore and enhance the vegetative communities and function of historic ecosystems. Restoration forestry practices will replace historical intensive silvicultural practices within the CUs. Harvest operations, controlled burning and other restoration prescriptions will be used to convert the existing even-aged pine monoculture to an uneven-aged management regime. Proposed objectives, suggested management prescriptions and benefits are summarized below. Management prescriptions support the long term vision of ecological restoration, management and vitality of native Coastal Plain Ecosystem habitats.

I. Forest Management

1. ***Objective-***To implement harvest, planting, and management operations that restore and maintain the vegetative species composition, stem density, basal area, understory, hydrology, wildlife species diversity and ecological functions of historically naturally occurring ecosystems.
2. ***Prescription***
    - All forest management operations will adhere to the *Silviculture Best Management Practices* (BMPs) outlined by the Florida Division of Forestry.
    - Slash pine plantations will be thinned to 28-112 trees per acre with an overall goal of 30-60 BA. Replanting of longleaf will be limited to no more than 400 trees per acre. Some small patch clear-cuts will be established in areas where longleaf pine (*P. palustris*) establishment is prescribed. Clear-cut size will be limited to 50 acres. However, series of clear-cuts may be connected by narrow skid-row corridors. Clear-cuts may exceed 50 acres in areas where tree mortality (i.e., wind, fire, insect damage) necessitate larger reforestation patches. Clear-cut size limitations do not apply to the Cypress and Wet Pine Flats CU,

where a larger timber harvest may be required to facilitate County water treatment objectives.

- Thinning operations are not economically feasible until stands reach merchantable age. Therefore, harvest prescriptions will not be implemented until stands attain minimum volume specifications.
- Harvest activities in all wet pine flatwoods and other jurisdictional wetlands will adhere to Wetland BMPs.
- Silvicultural activities deemed detrimental to ecosystem functioning (herbicide application, fertilization, bedding, roller-chopping, row planting) will be excluded except where appropriate to meet restoration objectives.
- Patch clear-cutting combined with longleaf reestablishment will be used to convert some even-aged slash and sand pine stands to uneven-aged longleaf stands over time.
- Longleaf pine reestablishment sites will be selected by evaluating the vegetative communities, soils and hydrology of prospective restoration areas.
- Uneven-aged management of naturally regenerated slash pine stands can be difficult due to high mortality rates of young pines when regularly burned. Therefore, the establishment of a diverse juxtaposition of small even-aged stands will be used to create the same effect as uneven-aged management.
- Limited use of herbicides also could be used to complement burning to create uneven-aged slash pine stands.

3. Benefits

- Reduction in stand density will promote the restoration and establishment of a naturally occurring under-story vegetative community and restoration of natural hydrology.
- Harvest, planting and burning operations will promote and maintain longleaf pine restoration within CUs.
- Thinning will reduce tree density and promote canopy development, restoration and establishment of a naturally occurring under-story vegetative community and increase the aesthetics and natural beauty of the CUs.
- Thinning operations also will reduce mid-story fuel levels and improve conditions for the use of prescribed fire.

II. Prescribed Fire

1. ***Objective***-To establish a prescribed fire regime that restores and maintains the ecological functions of naturally occurring upland and wetland communities in the CUs.

2. Prescription

- Remove existing fire-lines around wetlands to enhance hydrologic function and ensure inclusion of fire into formerly fire-suppressed areas.
- After burning, reclaim and disk all new fire lines to minimize impacts to hydrology.
- Implement dormant-season fire in all fire-dependent upland and wetland ecosystems to reduce fuel loads. Dormant-season fire will be implemented on a 2-5-year rotation for two rotations.
- Implement growing-season fire on a 2- to 3-year rotation after fuel reduction is accomplished.
- Use site-preparation fire before reestablishing longleaf pine.

3. ***Benefits***
    - Fire inclusion in wetlands will reduce woody vegetation and restore and maintain the natural under-story and ground cover plant communities.
    - Dormant-season fire will reduce fuel loads, the risk of catastrophic fire and prepare sites for implementation of growing-season fire.
    - Growing-season prescriptions will mimic natural fire regimes which will enhance and maintain fire-dependent ecosystems, under-story, and ground cover.
    - Growing-season fire will improve habitat for many species of wildlife and rare plants.
    - Prescribed fire will promote successful natural regeneration of longleaf pine, prepare sites for restoration planting and control noxious vegetation.
    - Prescribed fire will promote and enhance the aesthetic value and outdoor recreational opportunities in CUs.

III. Wildlife Management

1. ***Objective***-To prescribe and implement wildlife habitat and population management strategies that enhance species diversity and population levels.
2. ***Prescription***
    - Determine the presence, location, and population status of threatened, endangered and other protected species.
    - Monitor and evaluate responses of protected species to habitat management activities.
    - Identify and implement habitat and population management measures that improve the recovery and status of protected species.
    - Promote and develop inter-agency partnerships that will enhance the management of protected species in the CUs.
    - Identify, promote and establish protocol for public recreational consumptive and non-consumptive uses of wildlife species in the CUs.
    - Promote and establish educational and public outreach opportunities related to wildlife species in the CUs.
3. ***Benefits***
    - Species monitoring will help ensure permit compliance, increase public outreach opportunities and assist in evaluating management efforts.
    - Species-specific management prescriptions and development of partnerships will promote population growth and recovery of protected species and improve communication and relationships with regulators.
    - Promotion of recreational opportunities will encourage public participation and improve attitudes about and acceptance of land management objectives.
    - Restoration efforts will create and maintain diverse and healthy biotic communities that will serve as keystone ecosystems for evaluating future management decisions.

IV. Exotic Vegetation

1. ***Objective***-To identify, control and eradicate exotic and nuisance plant and animal species.
2. ***Prescription***
    - Conduct vegetation and wildlife surveys in the CUs to identify the occurrence, location and severity of exotic plant and animal infestations.
    - Develop and implement an exotic plant control and eradication plan.

- Implement herbicide, fire, and other management prescriptions to meet eradication objectives.
- Implement lethal and non-lethal measures to control exotic animals.
- Monitor infestation sites and evaluate the success of control measures to determine ecological lift.

3. Benefits

- Control of exotic plants will improve habitat quality and reduce competition with native species.
- Control of exotic wildlife species will reduce habitat degradation and competition with native wildlife species.