Florida Department of Environmental Protection

Bob Martinez Center
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Rick Scott
Governor

Jennifer Carroll
Lt. Governor

Herschel T. Vinyard, Jr.
Secretary

June 11, 2012

Tom Odom, P.E.
Mitigation Resources, LLC
713 West Montrose St., Suite B
Clermont, FL 34711

Dear Mr. Odom:

File No. 0294280-001, Bay and Calhoun Counties
Bear Creek Mitigation Bank

Enclosed is Mitigation Bank Permit, Permit No. 0294280-001 issued pursuant to Part IV of Chapter 373, Florida Statutes, and Title 62-342, Florida Administrative Code.

The permit contains conditions that must be met when permitted activities are undertaken. Please review this document carefully to ensure compliance with both the general and specific conditions contained herein. If you have any questions about the document, please contact me at 850-245-8492.

Sincerely,

Victoria K. Tauxe
Bureau of Submerged Lands and
Environmental Resources

Attachments: Final Permit, Figures and Attachments

Copies (by email) furnished to:
Jon Griffin, Marie Huber, U. S. Army Corps of Engineers
Mary Mittiga, Ted Martin, US Fish & Wildlife Service
Eric Hughes, EPA, Jacksonville
Ted Hoehn, Fish and Wildlife Conservation Commission
Andy Joslyn, DEP, Northwest District Office
Duncan Cairns, NWFWMD

Florida Department of
Environmental Protection
Bob Martinez Center
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Rick Scott
Governor

Jennifer Carroll
Lt. Governor

Herschel T. Vinyard, Jr.
Secretary

ENVIRONMENTAL RESOURCE - MITIGATION BANK PERMIT

PERMITTEE:
Bear Creek Timber, LLC
c/o Tom Odom – Mitigation Resources
713 West Montrose Street
Clermont, FL 34711

PROJECT:
Bear Creek Mitigation Bank
Permit Number: 0294280-001
Issued: June 11, 2012
Expiration Date: Perpetual
County: Bay and Calhoun

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.). The activity is not exempt from the requirement to obtain this mitigation bank/environmental resource permit (MB/ERP). Pursuant to operating agreements between the Department and the Water Management Districts, as referenced in Chapter 62-113, F.A.C., the Department is responsible for reviewing and taking final agency action on this activity.

This permit also constitutes certification of compliance with water quality standards under Section 401, *Clean Water Act* (CWA), 33 United States Code (USC) 1341, and a finding of consistency with Florida's Coastal Zone Management Program, as required by Section 307 of the *Coastal Zone Management Act* (CZMA).

A copy of this authorization also has been sent to the U. S. Army Corps of Engineers (COE) for review. The COE may require a separate permit. Failure to obtain this authorization prior to construction could subject you to enforcement action by that agency. You are hereby advised that authorizations also may be required by other federal, state, and local entities. This authorization does not relieve you from the requirements to obtain all other required permits and authorizations.

The above-named permittee is hereby authorized to implement the project described in the application, plans, and other documents attached hereto or on file with the Department and made a part hereof. This permit is subject to the limits, conditions, and locations of work shown in the attached drawings, and is also subject to the attached General Conditions and Specific Conditions, which are a binding part of this permit. You are advised to read and understand these drawings and conditions prior to commencing the authorized activities, and to ensure the work is conducted in conformance with all the terms, conditions, and drawings.

If you are utilizing a contractor, the contractor also should read and understand these drawings and conditions prior to commencing the authorized activities. Failure to comply with all drawings and conditions shall constitute grounds for revocation of the permit and appropriate enforcement action. Operation of the facility is not authorized except when determined to be in conformance with all applicable rules and with the general and specific conditions of this permit, as specifically described.

PROJECT DESCRIPTION:

The project is to establish the Bear Creek Mitigation Bank ("BCMB") on a ~ 3,000 acre site in 3 phases. The mitigation bank project includes the preservation of the site and the restoration or enhancement of cypress basin swamp, wet prairie and mesic flatwoods. Credits generated at BCMB may be used as mitigation for future unavoidable impacts to wetlands typical of these systems within the service area. Enhancement and restoration will be accomplished through selective canopy thinning in existing upland and wetland pine plantation areas, nuisance and invasive exotic vegetation species control, supplemental planting, prescribed fire, and hydrologic enhancements through low-water crossings and ditch blocks. Management of the BCMB site includes prescribed fire and control of nuisance and invasive exotic vegetation species. The mitigation was assessed by the Uniform Mitigation Assessment Method (UMAM) (Chapter 62-345, F.A.C.) as having a total potential of 561.2 credits: 460.6 Wet Prairie/Flatwoods Credits and 100.6 Forested Wetland Credits.

PROJECT LOCATION:

The BCMB is located in Bearthick Swamp, northeast of Panama City, south of Scotts Ferry Road at the Bay and Calhoun county line, specifically: Sections 5, 6, 7, 8, 18 and 19, Township 2 S, Range 11 W, Calhoun County; and Section 12, 13 and 24, Township 2 S, Range 11 W, Bay County (Figure 1). The site is at the boundary of the St. Andrew's Bay (HUC #03140101) and Chipola River (HUC #03130012) basins. The mitigation and service area includes portions of these basins and a small portion of the Apalachicola River basin within Bay, Calhoun and Gulf Counties as depicted in Figure 2.

GENERAL CONDITIONS:

1. All activities authorized by this permit shall be implemented as set forth in the plans, specifications and performance criteria approved by this permit. Any deviation from the permitted activity and the conditions for undertaking that activity may constitute grounds for revocation or enforcement action by the Department, unless a modification has been applied for and approved in accordance with Rule 62-346.100, F.A.C.
2. This permit or a copy thereof, complete with all conditions, attachments, exhibits, and modifications, shall be kept at the work site of the permitted activity during the construction phase. The complete permit shall be available for review at the work site upon request by the Department staff. The permittee shall require the contractor to review the complete permit prior to commencement of the activity authorized by this permit. A weather-resistant sign, measuring at least 8 1/2 inches by 11 inches, and including the permit number (in lettering that is easily visible from the access road) shall be placed on the property facing the road.
3. Activities approved by this permit shall be conducted in a manner that does not cause violations of state water quality standards.
4. Immediately prior to, during construction, and for the period of time after construction to allow for stabilization of all disturbed areas, the permittee shall implement and maintain erosion and sediment control best management practices, such as silt fences, erosion control blankets, mulch, sediment traps, polyacrylamide (PAM), temporary grass seed, permanent sod, and floating turbidity screens to retain sediment on-site and to prevent violations of state water quality standards. These devices shall be installed, used, and maintained at all locations where the possibility of transferring suspended solids into the receiving waterbody exists due to the permitted work, and shall remain in place at all locations until construction is completed and soils are permanently stabilized. All best management practices shall be in accordance with the guidelines and specifications described in the State of Florida Erosion and Sediment Control Designer and Reviewer Manual (Florida Department of Transportation and Florida Department of Environmental Protection, 2007), unless a project-specific erosion and sediment control plan is approved as part of the permit. If project-specific conditions require additional measures during any phase of construction or operation to prevent erosion or control sediments beyond those specified in the approved erosion and sediment control plan, the permittee shall implement additional best management practices as necessary, in accordance with the guidelines and specifications in the *State of Florida Erosion and Sediment Control Designer and Reviewer Manual*, Prepared for Florida Department of Transportation & Florida Department of Environmental Protection by HydroDynamics Incorporated in cooperation with Stormwater Management Academy, June 2007. The permittee shall correct any erosion or shoaling that causes adverse impacts to the water resources as soon as practicable. Once project construction has been deemed complete, including the re-stabilization of all side slopes,

embankments, and other disturbed areas, and before conversion of the permit to the operation and maintenance phase, all silt screens and fences, temporary baffles, and other materials that are no longer required for erosion and sediment control shall be removed.

5. Stabilization measures shall be initiated for erosion and sediment control on disturbed areas as soon as practicable in portions of the site where construction activities have temporarily or permanently ceased, but in no case more than seven days after the construction activity in that portion of the site has temporarily or permanently ceased.

6. At least 48 hours prior to commencement of activity authorized by this permit, the permittee shall submit to the Department a fully executed Form 62-346.900(3), "Construction Commencement Notice," incorporated by reference herein, indicating the expected start and completion dates. Information on how a copy of this form may be obtained is contained in Rule 62-346.900, F.A.C.

7. Within 30 days after completion of construction of the whole system, or independent portion of the system, the permittee shall notify the Department that construction has been completed and the system is ready for inspection by submitting one of the following forms to the Department office that issued the permit:

a. For systems other than those that serve an individual, private single-family residential dwelling unit, duplex, triplex, or quadruplex, Form 62-346.900(4), "As-Built Certification by a Registered Professional." If the registered professional has certified that the system has been built substantially in compliance with the plans and specifications in the permit, and that such system is ready for inspection, the permittee shall also submit Form 62-346.900(6), "Request for Conversion of Environmental Resource Individual Permit Construction Phase to Operation and Maintenance Phase." The system shall not be used and operated for its permitted purpose until the Department has approved the request to authorize the operation phase, in accordance with Rule 62-346.095, F.A.C. The "As-Built Certification" shall be for the purpose of determining if the work was completed in substantial compliance with permitted plans and specifications. The certification shall include as-built drawings in the form of the permitted drawings that clearly show any substantial deviations made during construction. The plans must be clearly labeled as "as-built" or "record" drawings.

b. For systems that serve an individual, private single-family residential dwelling unit, duplex, triplex, or quadruplex, Form 62-346.900(5), "Construction Completion and Inspection Certification for a System Serving an Individual, Private Single-Family Dwelling Unit."

8. Each phase or independent portion of the permitted system must be completed in accordance with the permitted plans and permit conditions prior to the initiation of the permitted use of the facility, or the site infrastructure located within the area served by that portion or phase of the system.

9. The permittee shall remain liable for compliance with the operation and maintenance of the system in accordance with the terms and conditions of the permit for the life of the system, unless such permit is transferred to an acceptable responsible entity in accordance with Rules 62-346.095 and 62-346.130, F.A.C. Once transfer of the permit has been approved by the Department, the transferee shall be liable for compliance with all the terms and conditions of the operation and maintenance phase of the permit for the life of the system.
10. Should any other regulatory agency require changes to the permitted system, the permittee shall notify the Department in writing of the changes prior to implementation so that the Department can determine whether a permit modification is appropriate.
11. This permit does not convey to the permittee or create in the permittee any property right or any interest in real property, nor does it authorize any entrance upon or activities on property that is not owned or controlled by the permittee, or convey any rights or privileges other than those specified in this permit or Chapter 62-346, F.A.C. Permittees having the right to exercise the power of eminent domain or who had a contract to purchase the property subject to this permit shall not commence any work under this permit until the permittee has provided the Department with proof of transfer of ownership of the property in the name of the permittee. If such transfer of ownership does not occur, the permittee shall surrender this permit, and the permit shall be null and void.
12. Pursuant to Section 373.422, F.S., prior to conducting any activities on sovereign submerged lands, the permittee must receive all necessary approvals and authorizations under Chapters 253 and 258, F.S. Written authorization that requires formal execution by the Board of Trustees of the Internal Improvement Trust Fund shall not be considered received until it has been fully executed.
13. The permittee shall hold and save the Department harmless from any and all damages, claims, or liabilities that may arise by reason of the construction, alteration, operation, maintenance, removal, abandonment or use of any system authorized by the permit.
14. The permittee shall notify the Department in writing at least 30 days prior to any sale, conveyance, or other transfer of ownership or control of a permitted system or the real property on which the permitted system is located. Where ownership of the land subject to the permit was demonstrated through a long-term lease, the lessee must have transferred ownership and control of the permitted system to the current landowner or new lessee, effective prior to or on the date of expiration of the lease. All transfers of ownership or transfers of a permit are subject to the requirements of Rules 62-346.095 and 62-346.130, F.A.C.
15. Upon reasonable notice to the permittee, Department staff with proper identification shall have permission to enter, inspect, sample and test the system to ensure conformity with the plans and specifications authorized in the permit.
16. If historical or archaeological artifacts are discovered at any time on the project site, the permittee shall immediately notify the Department.

17. The permittee shall immediately notify the Department in writing of any previously submitted information that is later discovered to be inaccurate.
18. The issuance of this permit does not relieve the permittee from the responsibility to obtain any other required federal, state, and local authorizations.
19. The permittee is advised that, pursuant to Section 556.105, F.S., excavating contractors are required to provide certain information concerning the excavation that may affect underground facilities through the one-call notification system not less than two, nor more than five, business days before beginning any excavation.

SPECIFIC CONDITIONS:

Please note that some of the following Specific Conditions further define or substitute for the requirements of General Condition 4-7. The remaining General Conditions are part of the reasonable assurance required for the issuance of this permit.

Administrative, Real Estate and Financial Requirements

1. This permit authorizes the permittee to establish a mitigation bank and obligates the permittee to timely and completely implement all of the conditions in this permit. This mitigation bank permit shall automatically expire five years from the date of issuance if the permittee has not conveyed a fee-simple interest or conservation easement on the bank property to the Department in accordance with the permit and Rule 62-342.650, F.A.C. Except for that provision, this mitigation bank permit shall be perpetual unless revoked. Any deviation from permit conditions must be authorized by the Department through a permit modification. The permit may be modified or transferred in accordance with the requirements of Rules 62-346 and 62-342.800, F.A.C.

2. Unless otherwise specified, all reports and other information required for this permit shall be submitted to Florida Department of Environmental Protection, Bureau of Submerged Lands and Environmental Resources, 2600 Blair Stone Road, MS 2500, Tallahassee, Florida 32399-2400. Currently, the permittee is Bear Creek Timber, LLC, represented by its manager, Mathew Whitley, and the authorized agent is Mitigation Resources, LLC, represented by Tom Odom. Pursuant to General Condition 14, the permittee shall notify the Department in writing within 30 days of any sale, conveyance, or other transfer of ownership or control of this permit or the real property on which the permitted mitigation bank is located. Additionally, in the event that there is any change in the authorized individuals representing the permittee, the permittee shall notify the Department, identifying the new permittee representative or agent and contact information, and providing documentation that the new designee is appropriately authorized. Failure to provide notification is a violation of the permit, subject to revocation of any agency actions or ledger modifications issued under the signature of any unauthorized designee.

3. Prior to construction, the permittee shall provide a letter to the Department from the Bureau of Historic Preservation, Division of Historical Resources (DHR) indicating the permittee has provided any necessary professional survey of construction areas, as requested in the March 30, 2009 DHR letter to the Department. If cultural resources, historical or archaeological artifacts are discovered at any time within the project site, the permittee shall immediately discontinue any activities that could harm or displace the resource in question and notify the Department and the Bureau of Historic Preservation.

4. Phases. This project is proposed to be implemented in 3 phases, as shown in Figure 3, in numerical order. However, phases may be combined for implementation *provided that Phase 1 is initiated first.* Once initiated, each phase is considered to be incorporated into the bank as a whole for the purpose of permit compliance and management. A phase is initiated by receiving a credit release based on establishing its preservation and financial assurance pursuant to Specific Conditions 6-8. All phases shall be initiated within 5 years of permit issuance. The mitigation bank shall not attain a final success determination until all phases have reached success criteria; however, monitoring requirements may be released for any phases that attain the success criteria in Specific Condition 16 a-g.

5. Project Oversight. In each phase, prior to the commencement of mitigation activities authorized in Specific Conditions 9-14, the permittee shall retain a qualified mitigation supervisor (QMS) to oversee all aspects of mitigation bank site implementation, management, monitoring, and corrective actions in this permit until final success criteria are met and a long-term management entity is established.

a. Although the permittee will have the ultimate responsibility, the QMS shall have the contractual obligation to serve as the principle contact and manager regarding mitigation activities, including reporting, and to ensure that the mitigation bank requirements are conducted in accordance with the permit.
b. Within 30 days of issuance of this permit, the permittee shall submit the name of QMS retained to oversee the mitigation work and provide supporting documentation demonstrating that QMS is authorized and qualified to oversee this work. The QMS must be approved by the Department prior to commencement of the mitigation activities.
c. Within 30 days of the discharge of any approved QMS, the permittee shall submit the name and supporting documentation of a new QMS to the Department for its review. Department approval of a QMS is required prior to any subsequent agency action.
d. The permittee shall have the approved 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 the Department concurs that any proposed modifications would improve the likelihood of mitigation success, the permittee shall submit the modification request to the Department for processing.

6. Protection and Preservation. Prior to initiating Mitigation Activities or release of credits, the property on which the BCMB, or phase thereof, is to be implemented shall be preserved and protected in accordance with a perpetual Conservation Easement (CE) granted to Department and recorded in the Public Records of Bay and Calhoun Counties (62-342.650, F.A.C.). A copy of the draft language to be used for this CE is in the permit file; however, prior to recording the CE, the permittee shall submit the final draft of the easement, and updated title commitment and survey for the bank or phase thereof for final Department review and approval. The permittee accepts the risk that review of the updated title commitment and survey may find encumbrances or exceptions that must be rectified prior to approval or recordation, and thus delay or deny credit release.

After recording the CE, the permittee shall provide the following:

a. A title insurance policy for the easement updated to the date of conveyance;
b. 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 FAC);
c. Legal descriptions and survey of the CE certified to the Department and title company by a Florida registered land surveyor; and
d. A clerk-of-the-court certified copy of the recorded CE.

7. Security, Hunting, and Recreation. Prior to initiating Mitigation Activities or release of credits, the BCMB property, or phase thereof, shall be secured at all entrances with sturdy locked gates and boundary signs (every 1000 ft.) that display "Bear Creek Mitigation Bank; Conservation Area; No Trespassing" and provide the name and contact information of the permittee (Figure 3). No hunting is allowed on initiated phases, except that the permittee may authorize limited hunting under a Department-approved plan or annual hunting lease agreement that is consistent with this permit, the restoration goals of the mitigation bank, and all state and federal hunting regulations. A hunting plan or lease authorized by the Department for permittee use shall only allow hunting of deer, turkey and feral hog (no limit), restrict the number of hunters to less than 1 hunter per 200 acres at any one time, prohibit all ATVs, and restrict all other vehicles to existing management roads, prohibit food plots or other soil disturbance, permanent structures, blinds or stands, and require security and harvest reporting. Besides approved hunting leases, no commercial use or public access is allowed without prior notification and approval of the Department to ensure that it is not contrary to the goals and conditions of the mitigation bank and conservation easement.

8. Financial Assurance. Prior to construction or release of credits in any phase, the permittee shall provide the Department with the financial responsibility mechanisms required by Rule 62-342.700, F.A.C. and consistent with an approved cost estimate pursuant to Rule 62-342.700 (10), F.A.C. The permittee shall secure financial assurance for all mitigation activities not completed at the time of credit release, including construction, monitoring, maintenance, and reporting requirements prior to success for each phase, and a separate financial assurance for post-success long-term management requirements of the bank (all initiated phases), as follows:

a. The permittee shall establish financial assurance for the construction and implementation in the form of a Letter of Credit (LOC) or performance bond surety, payable into a contemporaneously established standby trust account. The amount of the surety is based on 110% of the estimated costs for the remaining construction, monitoring, and maintenance prior to success. The permittee may request a partial reduction in the amount of the construction assurance after the successful completion of significant portions of work (i.e., logging/mechanical work, hydrological improvements, etc.) and submittal of a request and updated cost estimate. The permittee 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.
b. The permittee shall establish the financial assurance for long-term management in the form of a LOC or performance bond surety, payable into a contemporaneously established standby or active trust account. It is anticipated that a portion of credit proceeds shall be placed in the trust, but regardless of sales, the long-term management trust fund for each initiated phase shall be fully funded in cash prior to the phase attaining success criteria or within 5 years of its initiation, whichever occurs first. The permittee may request a reduction in the surety as the trust becomes funded in cash.
c. Secured trust accounts may be separate or combined for each phase; however, cost-estimates of all initiated phases shall be updated and surety adjustments made, as necessary, at the initiation of any phase and every two years after Phase 3 initiation pursuant to Rule 62-342.700 (11), F.A.C. and prior to final credit release.
d. The Department may draw upon the financial mechanisms required for the bank when the permittee has materially failed to comply with the terms and conditions of the permit and continues to be in noncompliance after thirty days written notice has been provided to the permittee.
e. The interest earned from the principal deposited in the perpetual management trust may be withdrawn for use for long-term management purposes once the mitigation bank has received the final credit release. Disbursement shall be made by the trustee at the written direction of the Department in accordance with the trust agreement.

Mitigation Activities

Existing conditions are shown in Figure 4 and Figures 5a, 5b, and 5c, and mitigation activities are depicted graphically in Figure 6. The goals of the mitigation activities are to enhance hydrology and to restore the communities depicted on Figures 7a, 7b, 7c, 8 and 9, and Attachment A. A list of appropriate species is in the permit file.

9. Community Targets. The permittee shall implement the restoration and enhancement activities on the site, or phase thereof, to achieve the target communities and acreage as detailed in specific conditions.

Acreage, by Phase, of Existing and Target Communities, and Proposed Activities:

Existing Community*	Phase (acres) 1	2	3	Total Acres	Principle Activities	Target Community	Phase (acres) 1	2	3	Total Acres
MF-PP	288	52	158	498	Pine Harvest, Rx Fire, Planting	Mesic Flatwoods	288	52	158	498
CBS	488	34	21	543	Mechanical/ Chemical Shrub Reduction, Rx Fire	Cypress-Basin Swamp	488	34	21	543
WP	7.5	0	0	7.5	Rx Fire	Wet Prairie	909	594	420	1923
WP-HW	293	66	98	457	Rx Fire, Shrub x					
WP-PP	400	420	322	1142	Pine Harvest, Rx Fire, Seed/Plug					
WP-W	208	1	0	209	Mechanical, Rx Fire					
WP-PP-A	0	107	0	107	Pine/Bed Reduction, Rx Fire					

*Key: Mesic Flatwoods in Pine Plantation (MF-PP), Cypress-Basin Swamp (CBS), intact Wet Prairie (WP), Wet Prairie with Hardwood overgrowth (WP-HW), Wet Prairie in Pine Plantation (WP-PP), Wet Prairie cleared into Windrows (WPP-W), and Wet Prairie recently bedded or planted as Pine Plantation (WP-PP-A)

10. Vegetation control and removal:

a. Slash Pine Removal/Thinning and Bedding Removal. Within 2 years following the initiation of each phase, slash pine (*Pinus elliottii*) on the target mesic flatwoods and wet prairie shall be thinned to <200 trees per acre using silviculture harvest best management practice (BMP). The initial thinning target shall be developed in consultation with the Department and local restoration land managers based on a balance of ecological factors (success targets, needle-cast for fuel, light penetration for groundcover, future management benefits, woody debris, soil disturbance, etc.). Ultimate target density (Specific Condition 16) may require additional thinning using fire, hand-felling or girdling techniques rather than a separate mechanical harvest. Harvested pines will be removed from the bank property. As part of the harvest process, the QMS shall direct activities to disrupt existing bedding and furrows and to remove or consolidate harvest debris (small trees and limbs) to expedite micro-topographic and groundcover recovery and facilitate future planting and management.

b. Woody Understory Reduction. During harvest activities and prior to the initial prescribed fire, cover by woody shrubs shall be mechanically reduced, using low ground-pressure equipment, such as walk-down, disk harrow or roller chop under the direction of the QMS. The goals of mechanical woody understory reduction are to reduce competition and promote growth of groundcover, cypress and other wetland tree species and as a means for site preparation for prescribed fire, supplemental seeding and planting as needed. This work shall be conducted within the slash pine removal/thinning areas and the portions of the cypress basin swamp where the following conditions are met: (i) soil conditions are dry enough to support equipment without rutting; (ii) wiregrass groundcover is absent or minimal; (iii) an initial fire of standing shrubs would potentially kill or adversely affect canopy wetland trees; and (iv) fire alone is unlikely to meet shrub cover success criteria. It is expected that most of the cypress basin swamp adjacent to wet prairie or mesic flatwoods burn boundaries would meet this criteria, whereas, most of the wet prairie areas would not be expected to need additional mechanical treatment.

   Following the initial prescribed burn, the QMS may direct additional treatments of nuisance shrubs and vines by light mechanical treatment, hand-felling, or hand-application of foliar and stump herbicide (targeting broad-leaf or vine vegetation) to restore native herbaceous groundcover or cypress. Aerial herbicide application may not be used without prior written authorization by the Department identifying a specific plan or event.

c. Removal of Windrows. Within 2 years of the initiation of any phase, vegetation and soil mounds within the windrows of the wet prairie-windrow areas shall be leveled to the maximum extent practical. Prior to initiating this activity the QMS shall provide to the Department the proposed method (such as roller chopping, gyro-tracking, harrowing or alternative mechanical treatments) for discussion to ensure that the proposed methods will be effective with minimal impact on adjacent wet prairie.

d. Protections. Prior to harvest or mechanical treatment, the QMS will traverse the logging or treatment area to identify and flag areas of relatively intact groundcover as determined by a significant density of wiregrass (*Aristida stricta* var. *beyrichiana*). Soil disturbance will be prohibited within these areas. The QMS shall instruct and direct harvest or machine operations to avoid impacts to wiregrass and native wetland trees. *No mechanical or herbicide treatment (except for exotic species) is authorized within the intact wet prairie, and shrub control shall be by prescribed fire only.*

e. Exotic vegetation control. Within 1 year after harvesting activities in any phase, invasive exotic vegetation listed as Category I or II by the Florida Exotic Pest Plant Council (FLEPPC) (http://www.fleppc.org), including but not limited to Chinese tallow, cogon grass and Japanese climbing fern and nuisance species shall be GPS-located and treated by appropriate herbicide application and/or physical removal under the direction of the QMS and state-certified spray applicator. Non-target species shall be protected using best management practices.

f. Reporting and Performance. The dates and locations of these vegetation treatments will be described and mapped in the status reports, and summarized, with documentation (photos, maps, dates, etc.), in the credit release request associated with this activity. For credit release, thinned pines shall be within target density, all exotic vegetation has been treated, and QMS-directed treatment of woody shrubs and windrows are complete and documented within appropriate areas, and any rutting or damage has been repaired.

11. Fire Management. Prescribed fire shall be implemented in accordance with this condition and the Fire Management Plan (Attachment B) to attain the proposed enhancement, and as a long-term management tool to sustain the communities and function. Within 2 years following harvest, initial fuel reduction burns shall be conducted across all assessment areas with the exception of cypress basin swamp (CBS) interior. Subsequent restoration burns shall be conducted on a 1-4 year rotation or as frequently as fuel and weather conditions would result in a complete restoration burn. The Department must be contacted if a burn is not initiated within 3 years of the previous fire in the burn unit to discuss the reasons, alternatives or need for permit modifications. At least half of the burns shall be targeted for implementation during the late spring or early summer growing season to favor groundcover species. The existing network of internal roads, natural wetland barriers, and burn techniques shall serve as firebreaks; no mechanical fire breaks shall be installed. In the event that emergency plow-lines or breaks are required, the Department shall be notified and the damage restored.

Each prescribed burn event will be developed and supervised by a state certified burner. Maps and dates of each prescribed burn shall submitted in status reports with documentation, including site photographs, signed by QMS and state certified burner, and a summary assessment of the burn success (defined as 80% cover over the burn unit, a positive vegetative response in the form of new growth, minimal loss of canopy cypress, escapes or out-of-prescription burns are reported and restored in accordance with the project goals). The individual burn reports shall be summarized and submitted along with GPS ground-truthing, and aerial and ground photos for the credit release request for this activity. One or more individual successful burn events may be required to cover the site or phase for the purpose of credit release or success criteria,

which requires that all mesic flatwoods and wet prairie areas and significant ecotone areas of the cypress basin of the site or phase have been appropriately burned.

12. Construction/Hydrologic Enhancement. The goal of the hydrologic enhancement activity is to reduce drainage and to provide improved hydrologic connections between communities on site by the strategic installation of ditch blocks or raised culverts and low water crossings (LWC) or road removal. The intent is to restore natural hydrologic conditions to the extent possible in each phase. The file contains engineering figures suitable for expressing these goals; however, the engineered details of the construction will be provided following the completion of harvest activities and shrub reduction in order to incorporate the latest field-specific information.

a. Engineering Figures. The existing culverts, roads and ditches are shown in Figure 5a-c. The general location of culverts to remain and the proposed low water crossings and ditch blocks are shown in Figure 7a-c. The placement and number of these structures were determined using historic and recent surface water data for the site. However, at least 90 days *prior to any construction authorized in this condition*, or 18 months following initiation of any phase (whichever is first), detailed construction drawings of all proposed hydrologic structures, signed and sealed by a professional engineer registered in the State of Florida ("engineering figures"), shall be submitted to the Department as a permit modification for review and written approval. The construction design and engineering figures shall be consistent with the above-stated goals and following conditions, and shall provide the final field-located plan views, along with fully dimensioned profile and/or section views, topographic and elevation details, and typical details and descriptions.
b. Low water crossings (LWC)/road removal. Within the length of the LWC, the fill road will be excavated, and any adjacent ditches filled, to an elevation of ~6-12" below the elevation of adjacent natural grade, lined with geotextile fabric, and covered with crushed rock/stone to match adjacent natural grade. Where a road constructed within wetlands is no longer necessary for management, the road fill shall be removed to natural grade and vegetation restored.
c. Ditch blocks. Ditch blocks shall be constructed to reduce drainage and promote sheetflow to wetlands on site, while maintaining road integrity.
    i. Ditch blocks within roadside ditches shall be filled using appropriate adjacent or onsite material to match adjacent natural grade elevations. Roads with double ditches will have both sides blocked except at boundary roads, where only the onsite side will be blocked.
    ii. Ditch blocks within excavated channels or natural drainages, and those within roadside ditches that directly discharge to an offsite drainage channel with a ≥36" culvert shall be designed and placed in accordance with field located and updated dimensioned engineering figures.

iii. Some ditch blocks may be substituted with raised culverts in the modification request, as supported with appropriate scaled engineering figures, and may be the preferred option to minimally impact a natural channel or depression.

d. The QMS and construction engineer shall determine natural elevations for all construction elements and for the dimensioned engineering figures.
e. Within 30 days of completion of the hydrologic construction work in any phase, the permittee shall submit a detailed report that includes a statement from the QMS summarizing the construction activities, and as-built certifications, prepared by the Engineer of Record licensed in the State of Florida, to document the low-water crossings, road removal, and ditch block installation.
f. Prior to the request for release of credits associated with the hydrologic construction activities, the permittee shall arrange a post-construction site visit that includes the Department, QMS, and any IRT members that are available to review the activities.

13. Turbidity Controls. Earthwork will be implemented when there is no standing water (except within ditches) and no flowing water, to the greatest extent possible. Best Management Practices for the control of turbidity and erosion shall be implemented during all work on site. All construction activities shall be conducted in accordance with state and federal National Pollutant Discharge Elimination System (NPDES) regulations and an approved Stormwater Pollution Prevention Plan (SWPPP). Erosion and turbidity control measures shall be inspected regularly. All graded areas shall be stabilized within 48 hours and at any other time necessary to prevent erosion, siltation and turbid discharges. Turbidity monitoring shall be conducted daily using a portable turbidimeter whenever there is discharge to surface waters during construction activities. The background monitoring site shall be placed upstream of the influence of the discharge. Compliance monitoring sites shall be within 10 feet of the discharge or turbidity curtain, and within any visible plume. If measurements exceed 29 NTUs above background, work shall be discontinued until turbidity levels are corrected, and the Department shall be notified within 24 hours.

14. Supplemental Planting. Vegetation shall be enhanced in accordance with the plan in Attachment C, and as follows:

a. *Herbaceous seeding*: Following harvest, woody shrub treatments and fuel reduction fires, mesic flatwoods and wet prairie restoration areas will be seeded with groundcover species collected from appropriate, approved donor sites.
b. *Longleaf pine*: Following the second prescribed burn, longleaf pine (seedlings or container plants) shall be planted in the mesic flatwoods and ~100' into adjacent wet prairie at a rate of ~100/ac. Longleaf pine may be planted and thinned, in consultation with the Department, to achieve management, interim and final goals and criteria.

c. *Cypress basin swamp:* After shrub reduction and initial fire, the QMS shall assess the cypress basin swamp to determine the density and canopy cover by cypress and other wetland tree species. Cypress (seedling or container) shall be planted at adequate density to attain at least 30% canopy cover for success determination.
d. *Wiregrass plugs*: After shrub reduction, initial fire, and any seeding, the QMS shall assess mesic flatwoods and wet prairie to determine the groundcover response and the likelihood that species richness and wiregrass density are adequate to reach success criteria. Wiregrass plugs and other groundcover species shall be planted accordingly.
e. *Road/Ditch Revegetation*: Graded road removal and ditch fill areas shall be stabilized and seeded with appropriate on-site or near-site native community seeds and wiregrass plugs shall be used to enhance cover and diversity.

All seeding and planting shall be conducted at a season that optimizes growth and survival and in accordance with Attachment C. The QMS-planting assessment protocol, maps, dates and results, as well as any seeding or planting conducted, shall be reported in semi-annual status reports, and summarized with documentation (purchase orders, photos, etc.) following completion of the supplemental seeding and planting. Additional supplemental plugging and/or seeding shall be conducted wherever and whenever inspection and monitoring indicate poor survival or germination or a lack of a trajectory toward success criteria.

15. Work schedule. The following table provides the basic sequence and timing of activities for Phase 1, relative to CE recordation, unless stated otherwise. The same schedule will apply to subsequent phases as they are placed under a conservation easement. The sequence of activities and dates given below are somewhat flexible estimates; however, recurrent failure to progress with activities may be grounds for a finding of non-compliance.

Sequence and Estimated Timetable for Implementation

Activity	Projected Dates
Inspections and Status Reports beginning after permit issuance	Every Jan & June; ongoing
CE, Security, Financial Assurance – Initiate Phase 1*	Within 1 year of permit issuance
Initial Baseline Monitoring (SC 26, Att. F)	First fall after CE
Pine harvesting and mechanical shrub reduction (SC 10)	3-18 mo. after CE
Implement fire management /conduct initial burns (SC 11)	3-18 mo. after CE (per Att. B)
Planting assessment ; Herbaceous seeding/plugging (SC 14)	After harvest & burn; ~2 yrs
Field locate & submit engineering figures for structures (SC 12)	Within 18 mo. after CE
Construction of approved structures (SC 12/13)	After harvest; within ~2 years

Monitoring (for reference); annual thereafter (SC 26, Att. F)	First fall after SC 10-13 activities
Attain first interim success (SC 17)	2-4 years; at least 1 yr. after above
Second prescribed burn (SC 11)	3-5 yr
Longleaf planting (also cypress, as needed) (SC 14)	After 2nd burn; 3-4 yrs
Re-assess mapping, criteria (SC 18)	Prior to 2nd interim release request
Second interim success	3-5 yr.; at least 1 yr after 1st interim
Third prescribed burn (SC 11)	5-8 yr.
Demonstrate Final Success in Phase 1 (SC 16)	5-8 yr.; at least 1 yr after 2nd interim
Demonstrate Final Success in all initiated Phases (SC 16)	10-13 yr.

*All Phases to be initiated within 5 years of permit issuance. Thereafter, each phase's schedule is relative to the recordation of its CE, in accordance with the above schedule.

Success Criteria

16. Final Success. The overall goal of the mitigation bank is to restore the native mesic flatwoods, wet prairie/flatwoods, and cypress basin swamp communities (Figure 8). The mesic flatwoods are characterized by an open, longleaf pine-dominated canopy over a dense and diverse herbaceous, pyrophitic groundcover; the wet prairie/flatwoods also have a dense and diverse herbaceous, pyrophitic groundcover but with a sparse canopy of pine or cypress and a minor component of coppiced woody shrubs or subcanopy; the cypress basin swamp has a canopy dominated by cypress or other wetland canopy trees with a water, bare ground or herbaceous/low shrub ground cover. A graphic representation of the success criteria is shown on Figure 9 and described in Attachment A. A list of appropriate species is in the permit file.

The bank, or phase thereof, shall be deemed successful when representative quantitative, qualitative and photographic monitoring and visual inspections indicate that the following criteria, in addition to the community descriptions in Attachment A, have been met for a period of at least one full year following the last interim credit release for that phase, during which no corrective actions or maintenance was necessary beyond routine management. Alternative criteria may be proposed after several monitoring events if actual onsite data indicate that such criteria provide a better assessment of the ecological goals and outcomes upon which credit was assessed. In particular, data from the relatively intact wet prairie assessment areas can serve as a reference to help determine appropriate species richness, density, structure or composition of other wet prairie assessment areas.

For the purposes of this permit and for success determination, "woody shrubs" include those species typically reduced by fire to coppice, such as gallberry (*Ilex glabra*), fetterbush (*Leucothoe racemosa, Lyonia* spp.), Clethra (*Clethra alnifolia*), yaupon (*Ilex vomitoria*), titi (*Cyrilla racemiflora and Cliftonia monophylla*), and wax myrtle (*Myrica cerifera*). Slash pine is *Pinus elliottii*, and longleaf pine is *Pinus palustris*. Cypress is *Taxodium ascendens* (pond cypress). Wiregrass is *Aristida stricta* var. *beyrichiana*.

a. Entire Site:
   1. The acreage based on updated mapping of target communities is within 10% of the acreage tables in Specific Condition 9, or the permit has been modified in accordance with Specific Condition 18;
   2. Plants are reproducing naturally, either by normal, healthy vegetative spread (in ways that would be normal for each species) or through seedling establishment, growth, and survival;
   3. All wetland target communities meet wetland delineation criteria as defined by 62-340, F.A.C.;
   4. Cover by category I and II invasive exotic plant species (pursuant to the most current list established by the Florida Exotic Pest Council at www.fleppc.org) shall not exceed 1% total cover per acre;
   5. Nuisance species including, but not limited to *Rubus*, and vine species such *Vitis* and *Smilax*, are <5% cover per acre;
   6. Plant species and structure in each target community is consistent with description in Attachment A, except for areas with immature canopy, but are otherwise meeting success criteria; and
   7. The site is appropriately fenced, posted, and secured as depicted in Figure 3 and protected against unauthorized entry or activity.

b. Overall Hydrology.
   1. All hydrology construction areas have been completed to the satisfaction of the Department, are stabilized and showing no signs of erosion, and have operated as designed (and with no repair required in previous two years);
   2. Ditch blocks and road removal areas have a combined ground, shrub and tree cover of ≥80% with appropriate native species for the community;
   3. There is no evidence of wash outs, erosion, or other indications of unnatural channelized water flow throughout the site; and
   4. Water level recorder data and random soil core samples representing each wetland community shall indicate appropriate water levels and appropriate hydric soils to support the community.

c. Mesic Flatwoods:
   1. Transects have ≥ 40 native, non-canopy species (including coppice shrubs) appropriate to pine flatwoods identified in literature such as the Florida Plant Atlas (USF) and Guide to the Vascular Plants of Florida (Wunderlin, 2003);
   2. There is at least 80% total cover (bare ground ≤ 20%) in groundcover stratum, with a relative cover of herbaceous species ≥70% (less than 30% relative cover with woody shrubs);
   3. Woody shrubs are reduced to coppice, typically <1.5m high and with a total aerial cover (all strata) averaging <30%;
   4. Pine saplings and trees average <70 stems per acre with at least 30% being longleaf pine that is taller than grass-stage; and
   5. Wiregrass is among the top five dominant groundcover species.

d. Wet Prairie:
   1. Transects have ≥50 native, non-canopy wetland (FACW or OBL) species appropriate to wet prairie or flatwoods as identified in literature such as the Florida Plant Atlas (USF) and Guide to the Vascular Plants of Florida (Wunderlin , 2003) (not including tree species);
   2. There is at least 80% total cover (bare ground ≤ 20%) in groundcover stratum;
   3. The relative cover of herbaceous species ≥70% (less than 30% relative cover with woody shrubs or slash pine seedlings), dominated by grass species;
   4. Woody shrubs and tree seedlings (not counting cypress) are reduced to coppice (<1.5m high) and have a total aerial cover (*across all strata*) <20%;
   5. Average of less than 20 slash pine canopy or subcanopy (≥1" dbh) trees per acre and > 30 total trees per acre, excluding cypress (because a wide range of cypress cover was historically present and would be appropriate); and
   6. Wiregrass is among the top five dominant groundcover species.

e. Cypress Basin Swamp:
   1. There is ≤ 50% total aerial cover (all strata) of woody shrubs as estimated from a line intercept methodology, qualitative transects and inspection;
   2. Woody shrubs are reduced to coppice along the community margins;
   3. Slash pine is <20 stems per acre and an insignificant portion of canopy; and
   4. Aerial cover of canopy (>4" dbh) and subcanopy (1-4" dbh) wetland tree species (not woody shrub species) is ≥60%, or is increasing annually and has a minimum of 30% cover, with cypress as the dominate tree species.

f. UMAM Assessment. Using monitoring data and reports, and in conjunction with the permittee and available members of the IRT, the Department shall inspect the site and conduct a UMAM analysis to ensure that all communities have reached, or are expected to reach and maintain, the "with mitigation" vision and scores in Attachment D.

g. Compliance.
   i. The permittee, or QMS, has conducted inspections, monitoring and management, including the appropriate schedule or prescribed burns (as defined in Specific Condition 25) and has submitted all required reports to the satisfaction of the Department;
   ii. All security measures are established and are in working order;
   iii. At least 3 successful prescribed burns have been completed in accordance with Specific Condition 11 in all initiated phases; and
   iv. An updated, long-term management plan (expanded version of Specific Condition 25) and long term management entity has been submitted and approved by the Department, and the long term management trust fund has been funded.

h. Phasing.
   All phases have attained the success criteria in Specific Condition 16 a-g.

17. Interim Release Criteria. Prior to achieving the final success criteria described in Specific Condition 16, and in order to qualify for the interim credit releases associated with the Credit Release Schedule (Specific Condition 21), the standards that must be attained by the site or phase thereof are as follows. Credits will be released only after at least one year has passed since the monitoring associated with previous credit release and when inspection and monitoring data provided in Annual Reports indicate that the following criteria are met and will be maintained under the required management plan:

a. Exotic species are maintained or trending towards <1% cover;
b. Construction sites and structures are functioning as designed;
c. Mesic flatwoods and wet prairie target areas shall demonstrate <30% bare ground/leaf litter, >40% relative cover with herbaceous species, <50% cover with woody shrubs, >20 species per transect in each assessment area, ***and***, when compared to the monitoring data from the previous credit release, there is *at least* a 10% improvement in these variables or monitoring and site inspections indicate that these variables are nearing final success;
d. The cypress-basin swamp area demonstrates that tree canopy is increasing annually (or has achieved ≥60%) with appropriate tree species consistent with the community criteria and descriptions, and wood shrub cover is decreased by at least 15% over previous monitoring; and
e. For the second interim release, longleaf planting has been completed, at least 2 prescribed burns completed, and an interim evaluation conducted (Specific Condition 18) with a modification request submitted, as necessary.

18. Interim Evaluation. Prior to the modification request for the second interim credit release, the permittee shall meet with the Department to re-evaluate permit figures (community configurations) and criteria to determine whether current site conditions accurately reflect permit conditions. From historic aerials and remnant vegetation, it appears that portions of the currently mapped cypress basin swamp may have been more typical of a wet prairie with a cypress canopy. Likewise, portions of the wet prairie may respond with significant cypress generation. Should mitigation activities result in a community shift that is different than was expected when permitted, the permittee may request a modification to the community boundaries, criteria or credit assessment. In addition, if the site data and conditions are not trending toward and expected to attain success criteria within 15 years after permit issuance, the permittee shall submit a modification request to the Department for any requisite figure, criteria, credit assessment or release schedule before the Department releases any additional credits.

Banking Operations

19. Assessment of Credits. Credits were determined using UMAM, Chapter 62-345, F.A.C. A summary of the credit assessment is provided as Attachment D. As a result of mitigation activities, BCMB has the potential to provide for a total of 561.2 credits: 460.6 as Wet Prairie/Flatwoods Credits and 100.6 as Forested Wetland Credits. Credits will be released incrementally, as detailed in Specific Condition 21, in the same proportions as the overall assessment: 82% Wet Prairie/Flatwoods Credits as and 18% as Forested Wetland Credits.

20. Ledger. In order to track credit releases and withdrawals, a ledger shall be kept by both the Department and the permittee indicating all potential, released, withdrawn, and available credits. The format for the ledger, indicating potential credits, is provided as Attachment E.

21. Credit Release Schedule. Mitigation credits will be released for use in accordance with the following Credit Release Schedule. The actual release will be determined by when the specified activity or criteria is satisfactorily completed or achieved rather than the expected timeframes in Specific Condition 15.

Credit Release Schedule by Activity or Criteria, Credit Type, and Phase

Credit Release Activity or Performance Criteria	Specific Condition	%	Wet Prairie/Flatwoods			Forested Wetland			Totals
			1	2	3	1	2	3	
CE; Financial; Security; QMS	5-8	15	37.0	16.8	15.2	8.1	3.7	3.3	84.2
Vegetation/Windrow Treatment	10	10	24.7	11.2	10.2	5.4	2.5	2.2	56.1
Initial Prescribed Burn	11	10	24.7	11.2	10.2	5.4	2.5	2.2	56.1
Construction & Seeding/Plugging	12-14	5	12.3	5.6	5.1	2.7	1.2	1.1	28.1
First Interim Success	9, 17	15	37.0	16.8	15.2	8.1	3.7	3.3	84.2
2nd Rx Burn; Longleaf Planting	11, 14	5	12.3	5.6	5.1	2.7	1.2	1.1	28.1
Second Interim Success	9, 17	15	37.0	16.8	15.2	8.1	3.7	3.3	84.2
3rd Rx Burn	11	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final Success of Phase	9, 16	20	49.3	22.4	20.3	10.8	4.9	4.5	112.2
All Phases Attain Final Success	9, 16	5	12.3	5.6	5.1	2.7	1.2	1.1	28.1
TOTAL		100	246.6	112.0	101.6	54.1	24.6	22.3	561.2

Upon completion of a credit release activity, the permittee may submit a minor modification request (with fee), along with supporting documentation, for the release of the appropriate number of credits. The Department 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.

22. Implementation and End-Date. A material part of the reasonable assurances the Department relies on in issuing this permit is that the permittee will timely and completely implement all of the conditions and phases. Failure to timely and completely comply with all of the conditions of this permit may result in a revocation or suspension of the permit. As specified in Rule 62-342.470(6), F.A.C., if at any time the bank is not in material compliance with the terms of this permit, no mitigation credits may be released or withdrawn (suspension of credit use). Mitigation credits shall again be available if the permittee comes back into compliance. If the permittee has not attained a modification for final credit release within 15 years after permit issuance, or otherwise obtained a permit modification to revise the schedule, figures, criteria, credit assessment, or management to adjust for revised expectations, in accordance with the permit interim evaluation in Specific Condition 18, any potential credits that have not been released shall be forfeited, and annual qualitative monitoring and reporting (Specific Conditions 26 and 28) may be discontinued. However, the permittee is still required to maintain the site according to Specific Condition 25.

23. Mitigation Credit Withdrawal. Withdrawal of the mitigation bank credits as mitigation for wetland impacts shall be accomplished though a minor modification of this permit. Modification requests for credit withdrawal shall not require a modification fee. Withdrawal modification requests shall be made in writing by the permittee or agent within 60 days of issuance of final agency action requiring the credits. The modification request shall include:

a. A list of all Department or Water Management District (WMD) permits (or other applicable regulatory actions) requiring mitigation credits from BCMB;
b. The permit number (or other regulatory action), issue date, and Department or District contact; and
c. Identification of the number and type of wetland credits required under each of these permits/actions.

An updated mitigation bank credit ledger sheet shall be included by FDEP as an attachment to each minor modification approval for credit withdrawal.

24. Mitigation Service Area (MSA). The MSA is the geographic area within which adverse impacts may be offset by the bank. The MSA for BCMB depicted on Figure 2 includes most of the St. Andrews Bay basin (HUC) south of Highway 20 and north of the bay, intra-coastal waterway, and the Airport Conservation Area. The eastern boundary is the Chipola River basin south of Hwy 20, and a small area of the Apalachicola River basin. It includes portions of Bay, Calhoun, and Gulf Counties.

The Wet Prairie/ Flatwoods and Forested Wetland credits are intended for use as mitigation for future unavoidable impacts to wetlands typical of these habitats. Appropriateness of the bank to offset impacts, as well as the number and type of required mitigation credits, is made on a case-by-case basis by the impact permit reviewing agency. Bank credits are not intended to offset impacts to river floodplain or impacts within the range of Panama City crayfish (generally south and west of the bank), which may require alternative or additional mitigation in accordance with technical review by Florida Fish and Wildlife Conservation Commission.

Inspections, Monitoring, and Maintenance

25. Adaptive Management and Maintenance. At a minimum, the QMS shall conduct quarterly inspections of the property until success attainment in each phase and semiannual inspections thereafter, in perpetuity, for the purpose of assessing and correcting the following management or maintenance needs. Inspections shall include boundary access, existing and constructed hydrology features, management roads, piezometers, areas of past exotic vegetation treatments, and several transects across the different community types. Monitoring data, observation and the QMS's professional judgment will dictate the type and frequency of management activities. The following management activities shall be required to achieve success and in the long term to ensure that success criteria are maintained:

a. Assessing target vegetation density, especially wiregrass, and replanting, plugging or seeding as necessary to achieve community goals and criteria in accordance with the Revegetation Plan (Attachment C);
b. Assessing fuel loads and conducting prescribed burns in accordance with Specific Condition 11 and Attachment B at a frequency and season optimal to promote habitat goals, with a minimum return frequency of 3 years principally targeted for growing season burns;
c. Conducting exotic and nuisance plant control, as necessary, to avoid infestation of these species. At no time shall the cover of these species exceed 5% in any one acre prior to remedial eradication activities;
d. Reporting and timely maintenance, restoration, stabilization or repair of any damaged structures, gates, fencing, equipment, roads or erosion areas identified in the quarterly/semiannual inspection;
e. Removing feral/exotic animals that threaten the mitigation activities or success, such as feral hogs; and
f. Other management activities deemed necessary by the QMS to achieve success.

26. Monitoring. Qualitative and quantitative monitoring of the vegetation and community structure shall be required after initiation of a Phase until the bank is determined to have achieved success criteria in Specific Condition 16 a-f in any phase, and for the final success determination in Specific Condition 16.h. or has otherwise been transferred to long-term management by a permit modification associated with Specific Condition 22. The Department has reviewed the proposed monitoring plan in Attachment F and 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, after completing the initial baseline monitoring and reporting, and in consultation with the Department, the permittee shall submit, for the Department's written approval, an updated monitoring and reporting plan prior to conducting the next annual monitoring for this permit.

27. Status Reports. Beginning the first July or January after permit issuance, and every 6 months thereafter, including after success, the permittee shall submit semi-annual (two per year) status reports containing the following information regarding the project:

a. The name, authorized representative, signature, and current contact information for the permittee; any agent of the permittee; and QMS individual(s);
b. The chronology file (Specific Condition 29) of compliance activities;
c. Hydrology data, per monitoring plan;

d. Date construction or management activities were begun or are anticipated to begin;
e. Brief description and dates of each construction or management activity completed since the previous report (or since permit issuance);
f. Site figures or drawings indicating areas where activities are ongoing or completed (i.e., areas burned, areas of harvest or shrub treatment, dates);
g. A description of problems encountered and solutions undertaken; and
h. A brief description of the work and management the anticipated to be commencing, continuing, or completing in the next six months; and
i. Site inspection dates, findings and repairs.

28. Annual Reports. The Annual Report is a summary of the yearly monitoring for success and an assessment of the degree to which the bank is attaining success. This report shall be submitted after completion of the end-of-growing-season vegetation monitoring and shall be prepared according to the format required and approved in accordance with Specific Condition 26. This report is due by January 30 each year after permit issuance, until final bank-wide success is achieved.
The Annual Report that requests a determination of final success per phase and for final bank success in accordance with Specific Condition 16 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 criteria 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.

The Report requesting the final success determination shall be submitted to both the Department and the long-term manager.

29. Chronology. The permittee shall maintain an electronic file (worksheet) that provides a list and submittal or receipt date of all documents, notifications and other correspondence required by this permit or associated with documentation of permit compliance. The chronology shall be submitted with each status report and credit release request.

Attachments:
Permit Figures 1-9
A. Community Descriptions
B. Prescribed Fire Management Plan
C. Planting Plan
D. UMAM Assessment Summary and Table
E. Ledger
F. Monitoring Plan

STATE OF FLORIDA DEPARTMENT
OF ENVIRONMENTAL PROTECTION

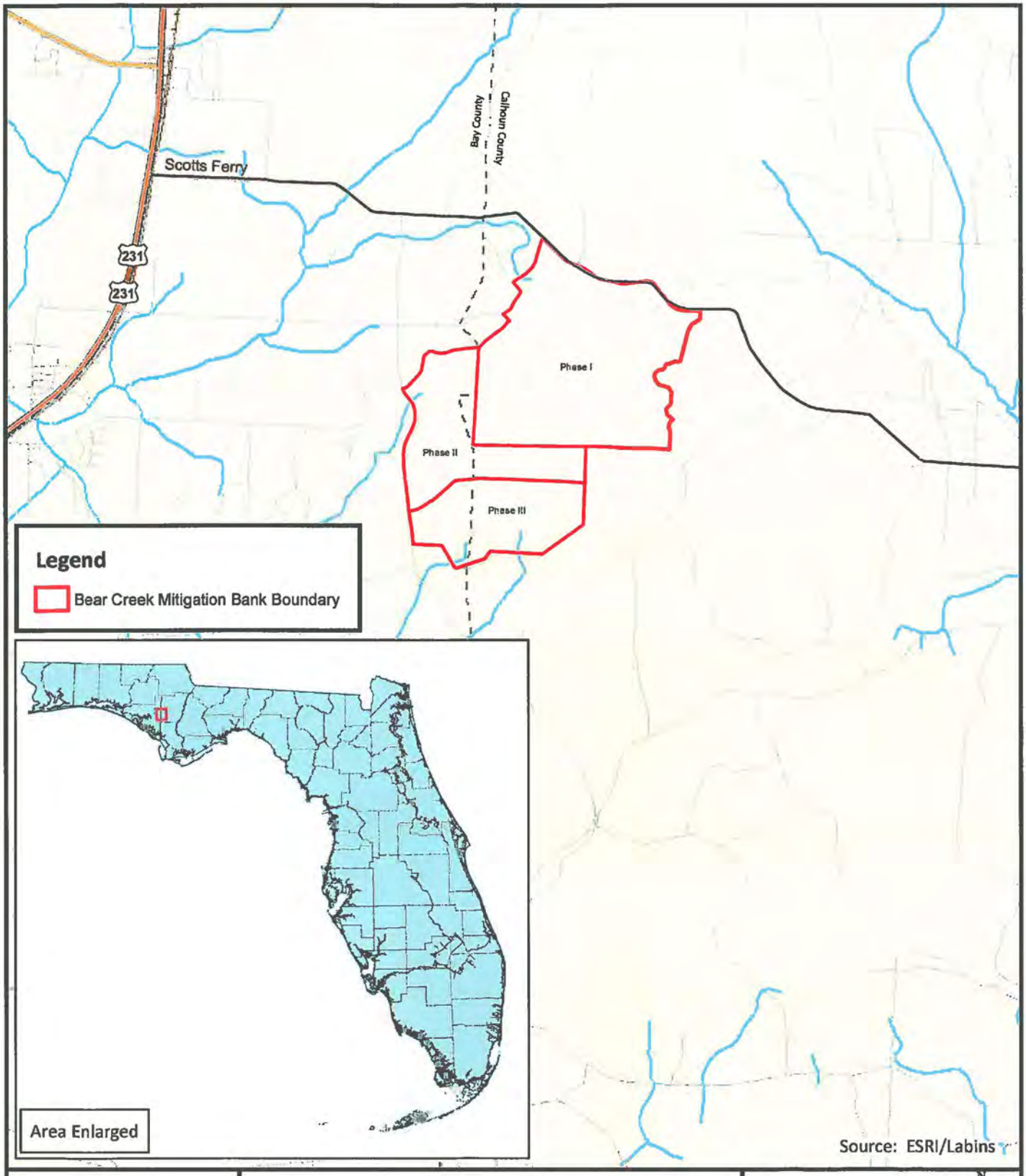
Mark Thomasson, P.E., Director
Division of Water Resource Management

CERTIFICATE OF SERVICE, FILING AND ACKNOWLEDGMENT

The undersigned duly designated deputy clerk hereby certifies this **PERMIT** was mailed before the close of business, and FILED, on this date, pursuant to 120.52(7) F. S., with the designated Department Clerk, receipt of which is hereby acknowledged.

Clerk

6/12/12
Date



Mitigation Resources

Bear Creek Mitigation Bank
Location Map
Bay and Calhoun Counties, Florida

M:\Projects\Bear Creek MB\RAI 3\Draft Permit Revisions\Figures\Figure 1 Location Map

Figure No. 1
Project No. BCMB-004-07

N W E S

Scale: 0 0.4 0.8 Miles

Date: 05/04/2010

Drawn By: SEG

Approved By: TFO

Mitigation Resources

Bear Creek Mitigation Bank
Mitigation Service Area
Bay and Calhoun Counties, Florida

M:\Projects\Bear Creek MB\PSJ and BCMB MSA Modification\MSA 2-2012

Figure
Project No. 2
Project No. BCMB-004-07

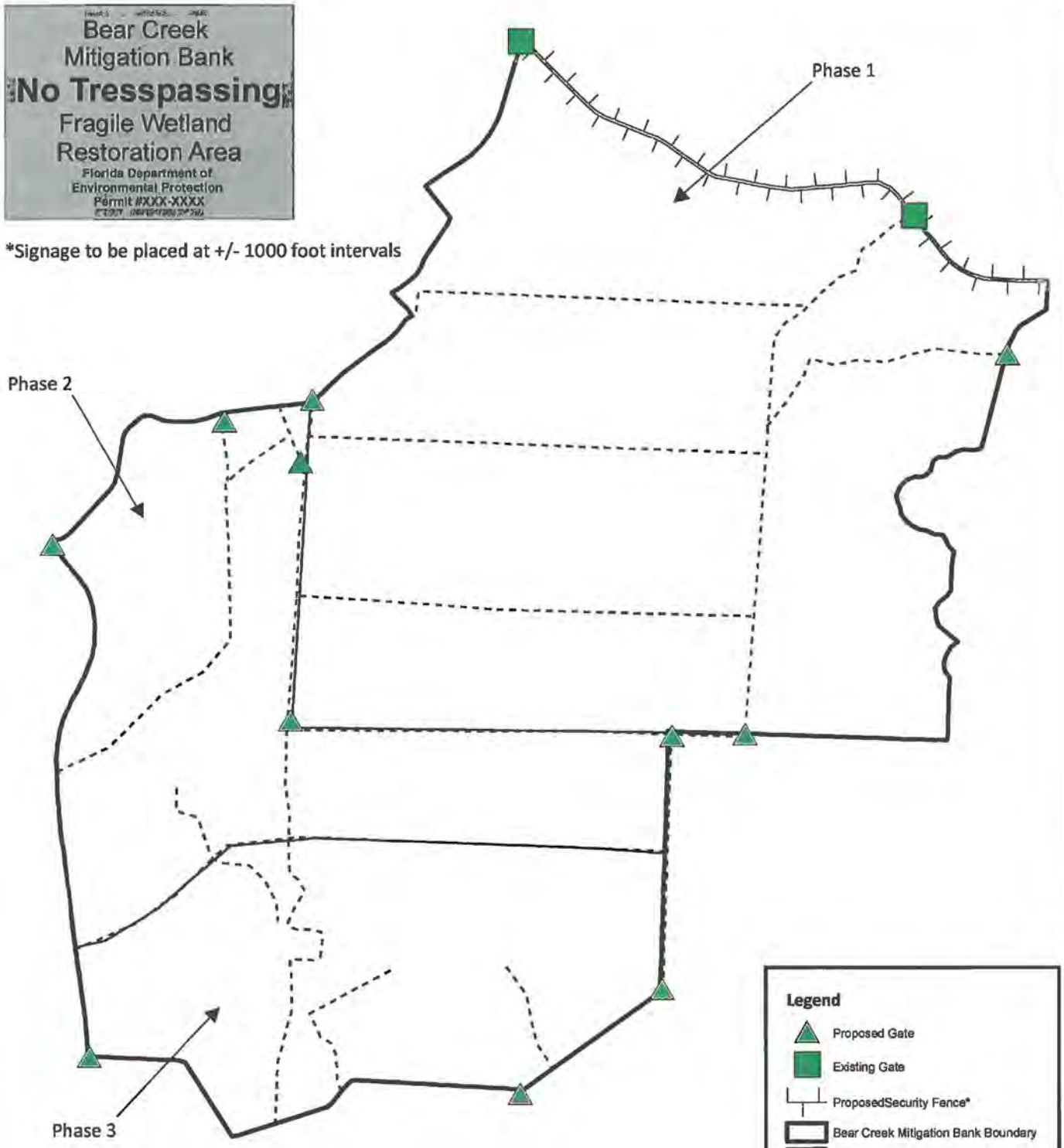
N W E S

Scale: 0 2.5 5 Miles

Date: 02/9/2012

Drawn By: SEG

Approved By: TFO



Source: Preble-Rish, Inc.

Mitigation Resources

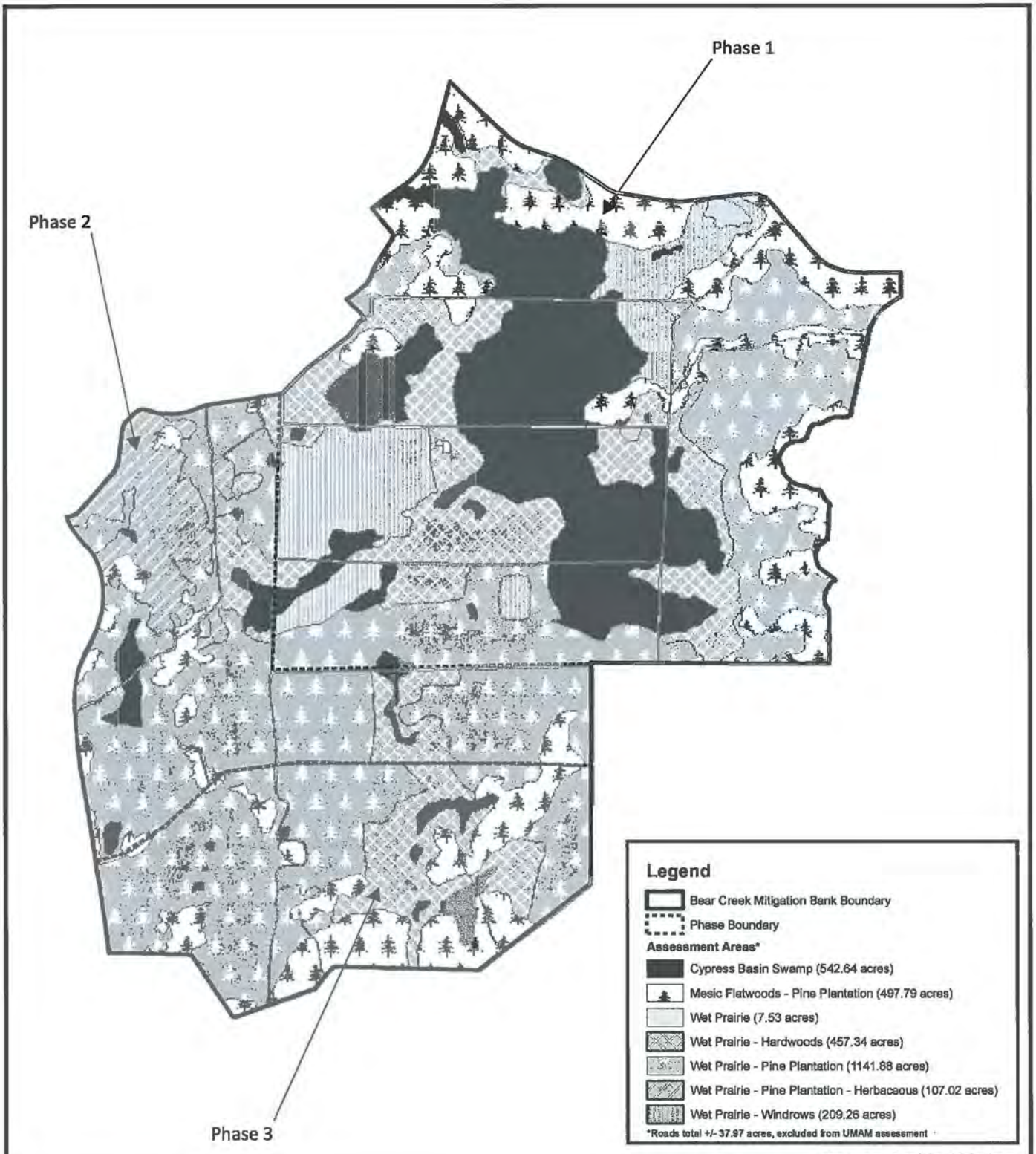
Bear Creek Mitigation Bank
Security/Fencing Map
Bay and Calhoun Counties, Florida

M:\Projects\Bear Creek MB\RAI 3\Draft Permit Revisions\Figures

Figure No. 3
Project No. BCMB-004-07

N W E S

Scale:	Date:
NTS	04/20/2009
Drawn By:	Approved By:
KJD	MDG



Source: Preble-Rish, Inc.

Mitigation Resources

Bear Creek Mitigation Bank
Existing Conditions
Bay and Calhoun Counties, Florida

M:\Projects\Bear Creek MB\RAI 3\Draft Permit Revisions\Figures\Figure 4 - Existing Conditions

Figure No. 4
Project No. BCMB-004-07

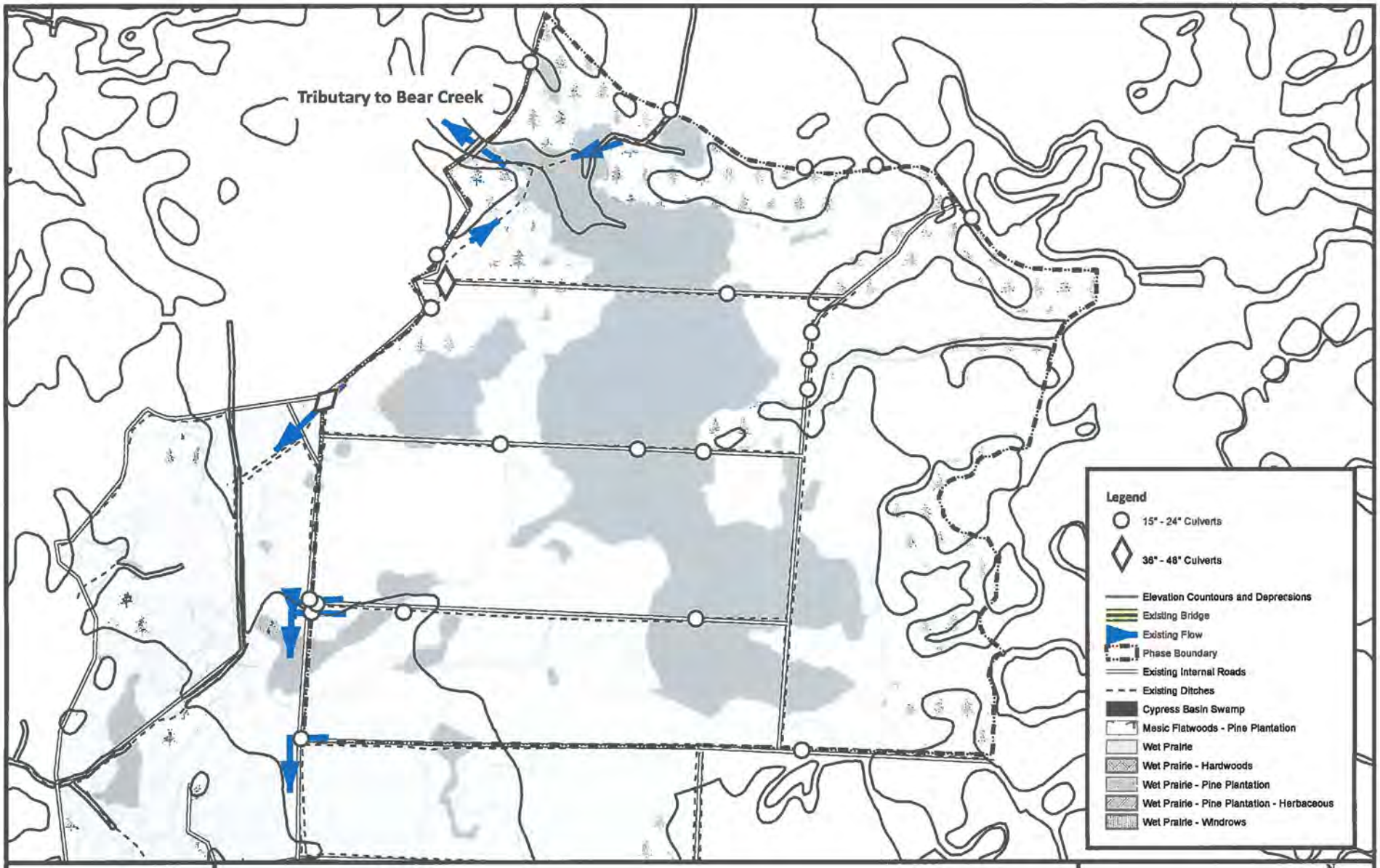
N W E S

Scale: 0 660 1,320 Feet

Date: 04/12/2010

Drawn By: SEG

Approved By: TFO



Mitigation Resources

Bear Creek Mitigation Bank
Existing Hydrologic Conditions - Phase I
Bay and Calhoun Counties, Florida

M:\Projects\Bear Creek MB\Permit Finale\Revised Permit\Figures\Figure 5a - Hydrologic Features Phase I Existing Revised

Figure No. 5a
Project No. BCMB-004-07

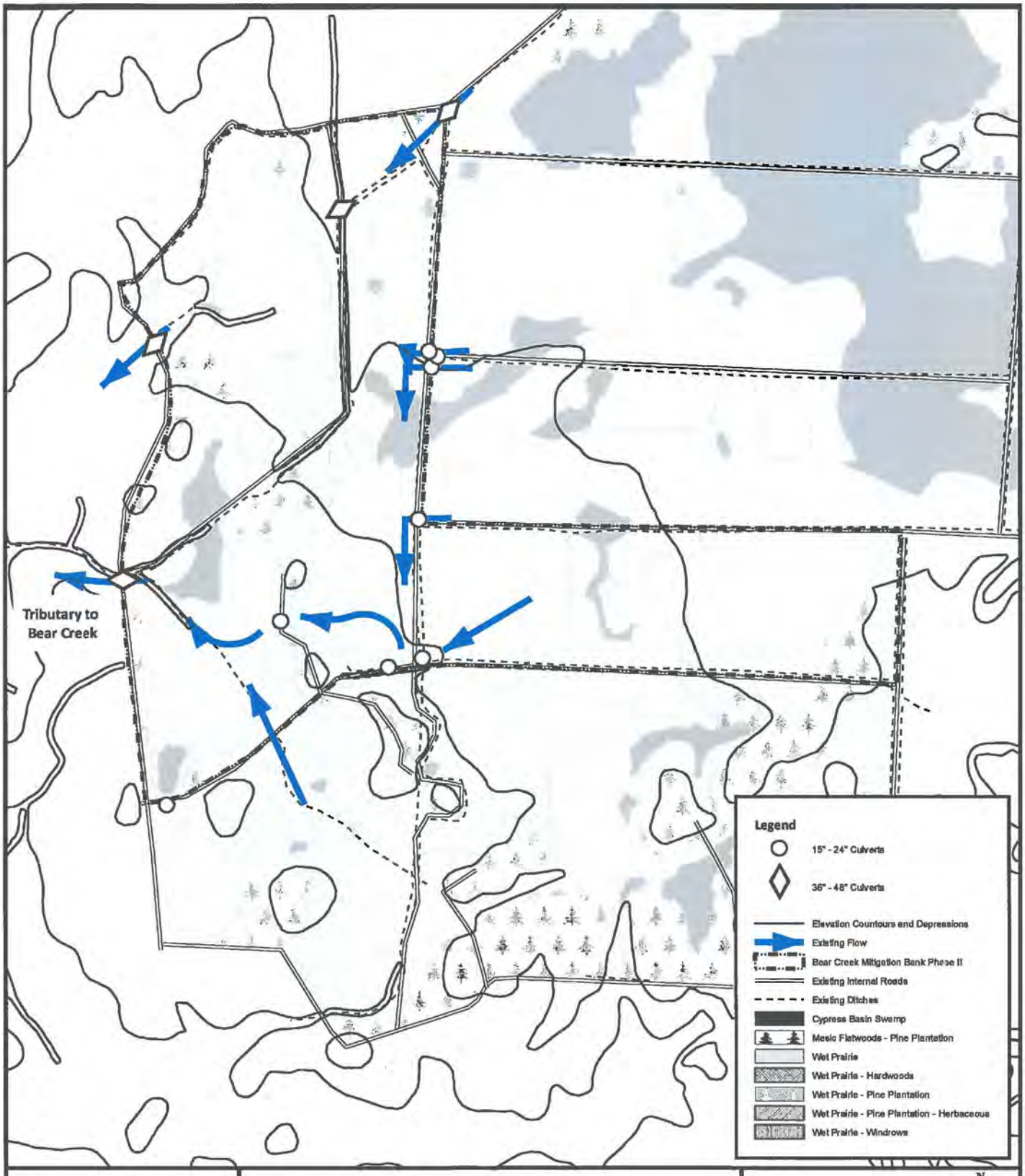
N
W E
S

Scale: 0 660 1,320 Feet

Date: 07/15/2011

Drawn By: SEG

Approved By: TFO



Mitigation Resources

Bear Creek Mitigation Bank
Existing Hydrologic Conditions - Phase II
Bay and Calhoun Counties, Florida

M:\Projects\Bear Creek MB\RAI 3 (12-2010)\Figures\Figure 5b - Hydrologic Features Phase II Existing

Figure No. 5b
Project No. BCMB-004-07

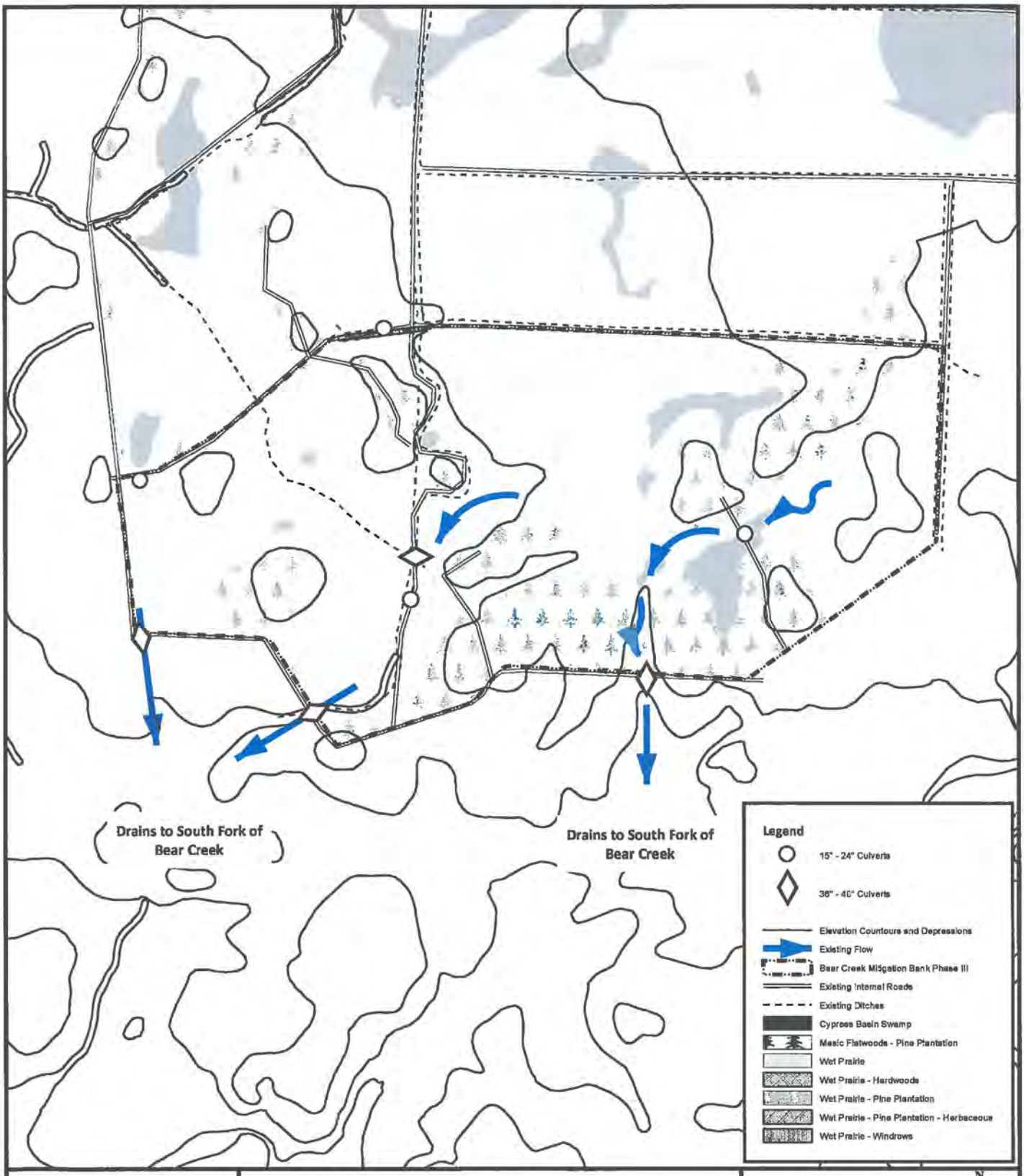
N
W E
S

Scale: 0 440 880 Feet

Date: 02/21/2011

Drawn By: SEG

Approved By: TFO



Mitigation Resources

Bear Creek Mitigation Bank
Existing Hydrologic Conditions - Phase III
Bay and Calhoun Counties, Florida

M:\Projects\Bear Creek MB\RAI 3 (12-2010)\Figures\Figure 5c - Hydrologic Features Phase III Existing

Figure No. 5c
Project No. BCMB-004-07

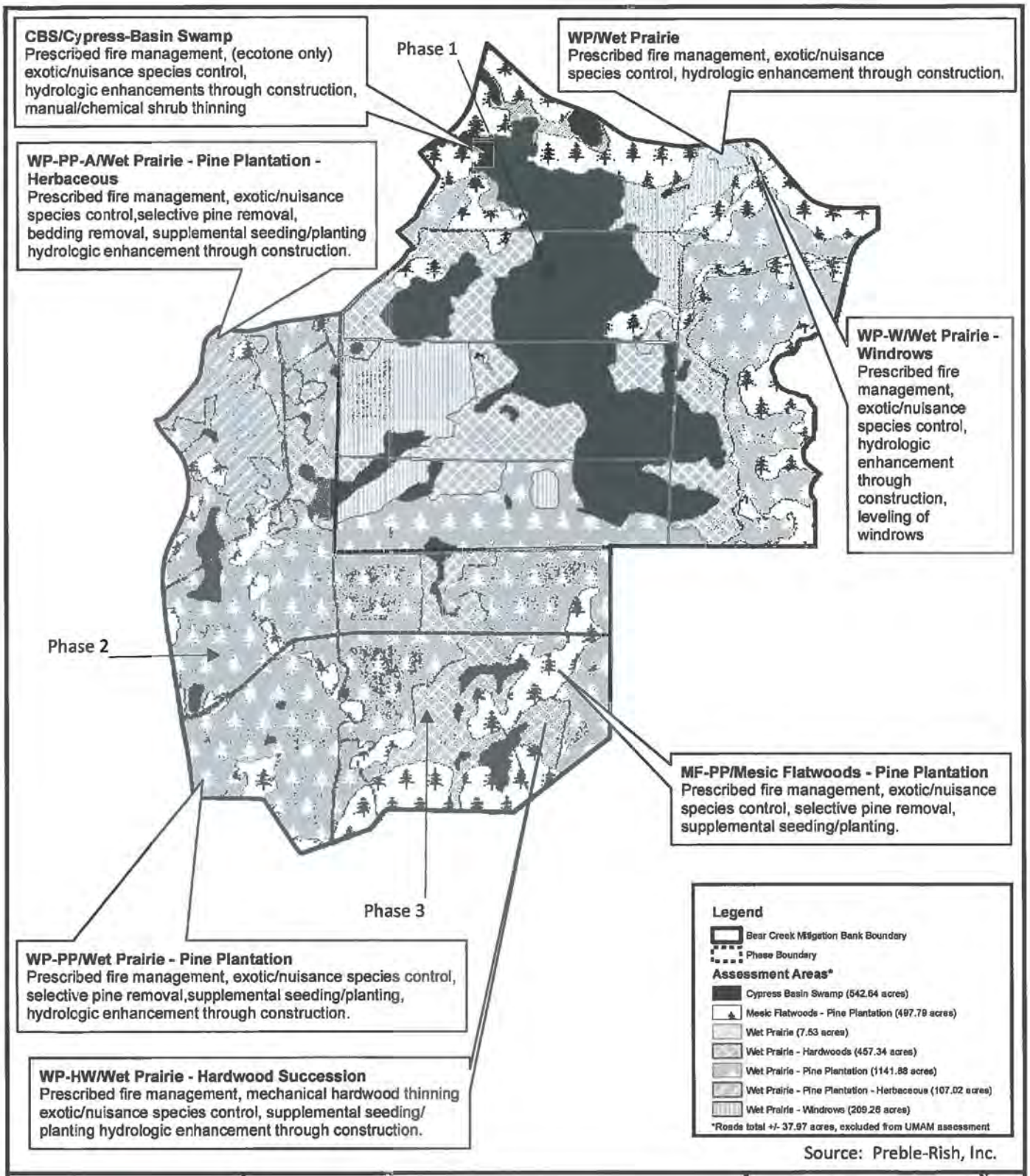
N W E S

Scale: 0 440 880 Feet

Date: 02/21/2011

Drawn By: SEG

Approved By: TFO



Source: Preble-Rish, Inc.

Mitigation Resources

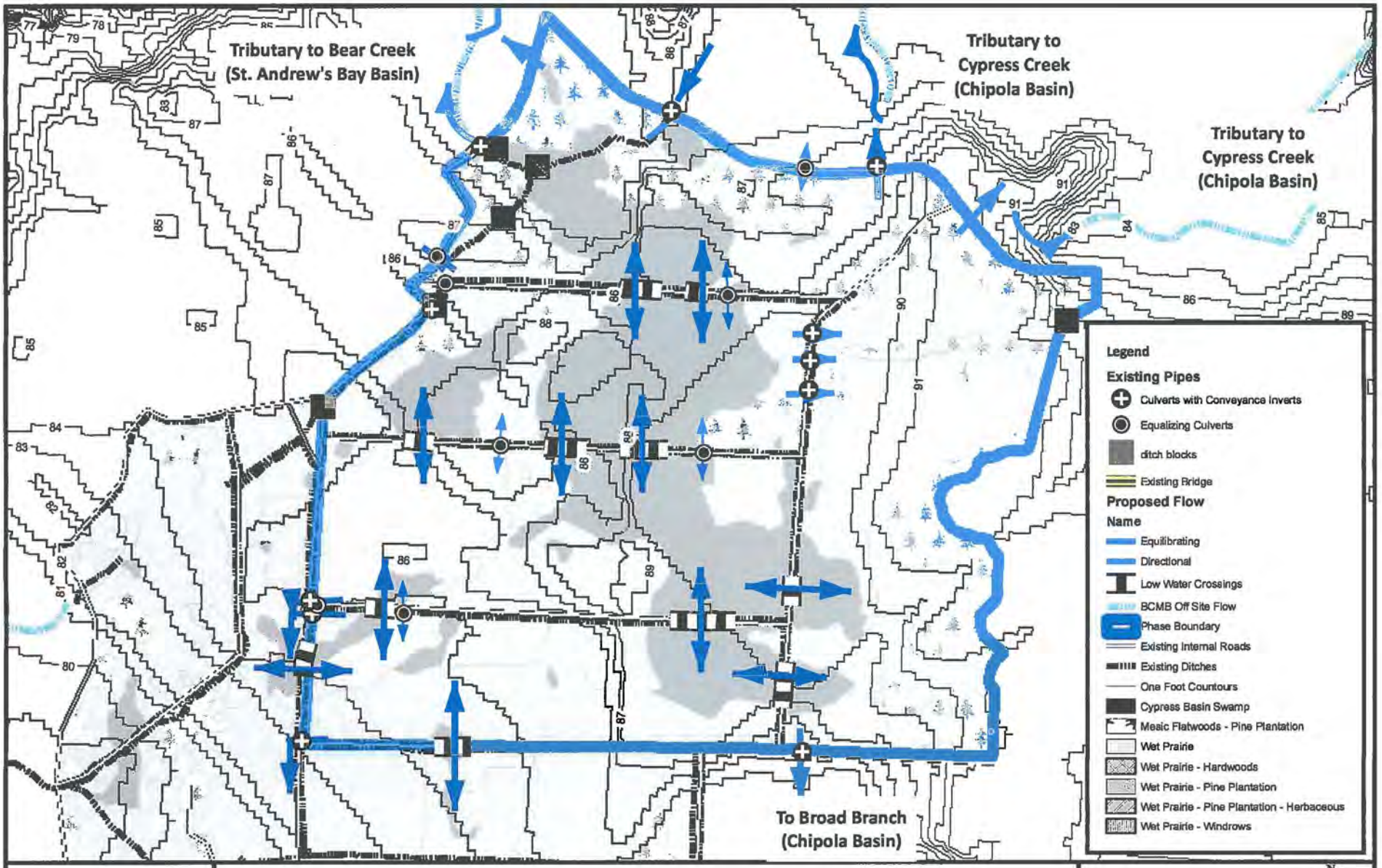
Bear Creek Mitigation Bank
Mitigation Activities
Bay and Calhoun Counties, Florida

M:\Projects\Bear Creek MB\RAI 2 (8-2009)\Figures\Draft Permit Figures\Figure 6 Vegetation Enhancements

Figure No. 6
Project No. BCMB-004-07

N W E S

Scale: 0 660 1,320 Feet	Date: 04/12/2010
Drawn By: SEG	Approved By: TFO



Mitigation Resources

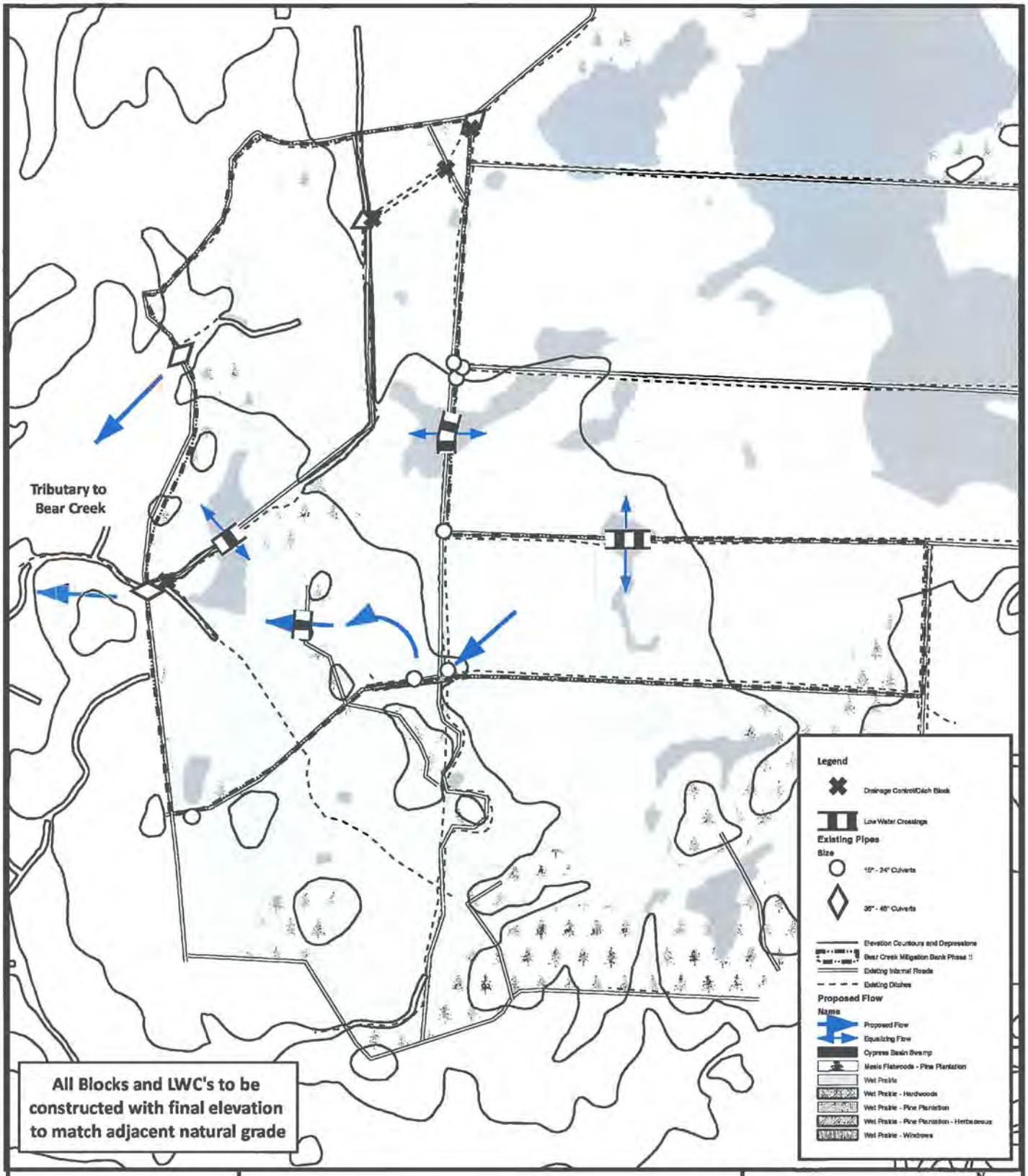
Bear Creek Mitigation Bank
Proposed Hydrologic Conditions - Phase I
Bay and Calhoun Counties, Florida

M:\Projects\Bear Creek MB\Permit Finale\Revised Permit\Figures\Figure 7a - Hydrologic Features Phase I Proposed Revised

Figure No. 7a
Project No. BCMB-004-07

N
W E
S

Scale:	Date:
0 660 1,320 Feet	07/15/2011
Drawn By: SEG	Approved By: TFO



Mitigation Resources

Bear Creek Mitigation Bank
Proposed Hydrologic Conditions - Phase II
Bay and Calhoun Counties, Florida

M:\Projects\Bear Creek MB\RAI 3 (12-2010)\Figures\Figure 7b - Hydrologic Features Phase II Proposed

Figure No. 7b
Project No. BCMB-004-07

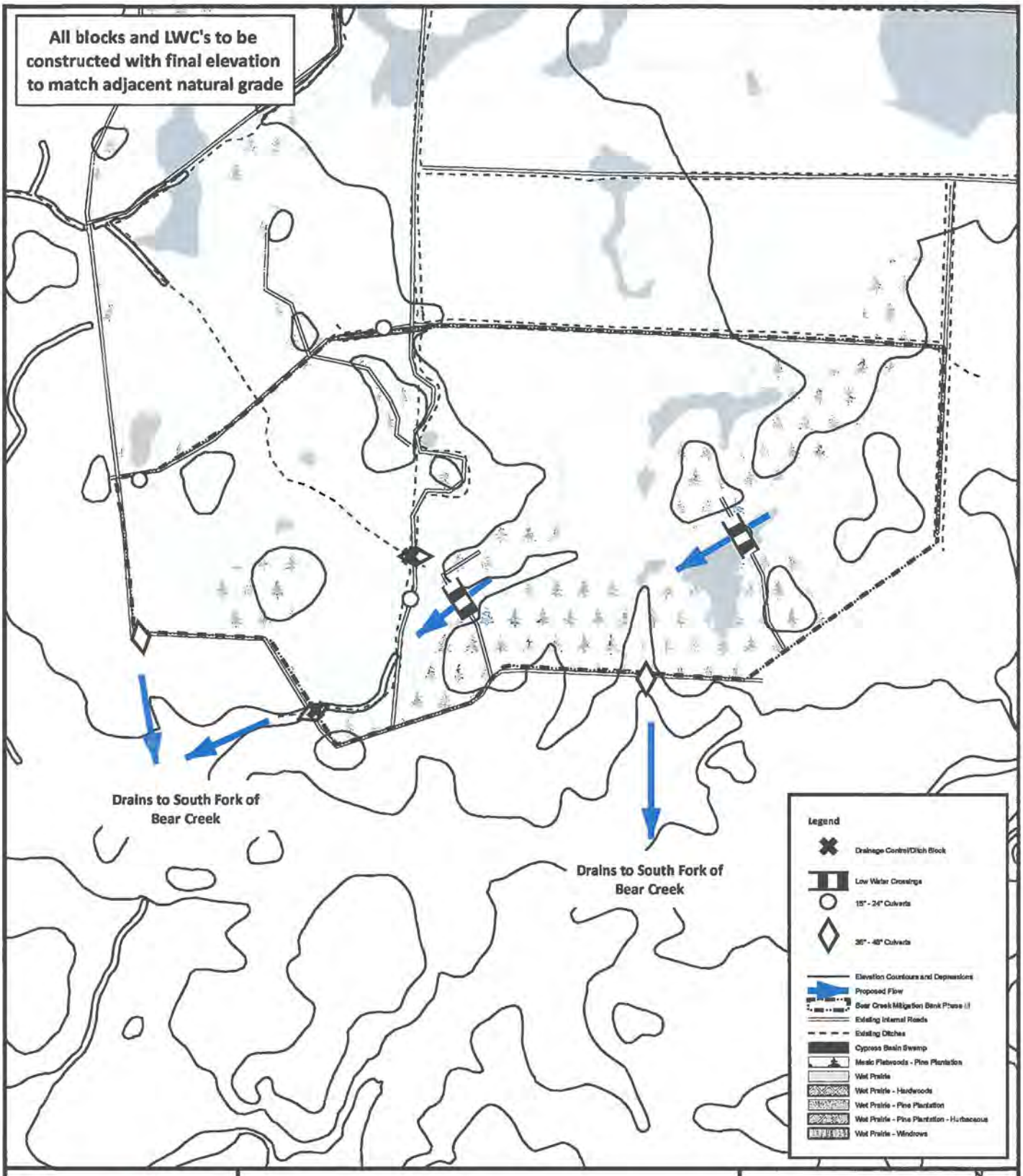
N
W E
S

Scale: 0 440 880 Feet

Date: 02/21/2011

Drawn By: SEG

Approved By: TFO



Mitigation Resources

Bear Creek Mitigation Bank
Proposed Hydrologic Conditions - Phase III
Bay and Calhoun Counties, Florida

M:\Projects\Bear Creek MB\RAI 3 (12-2010)\Figures\Figure 7c - Hydrologic Features Proposed Phase III

Figure No. 7c
Project No. BCMB-004-07

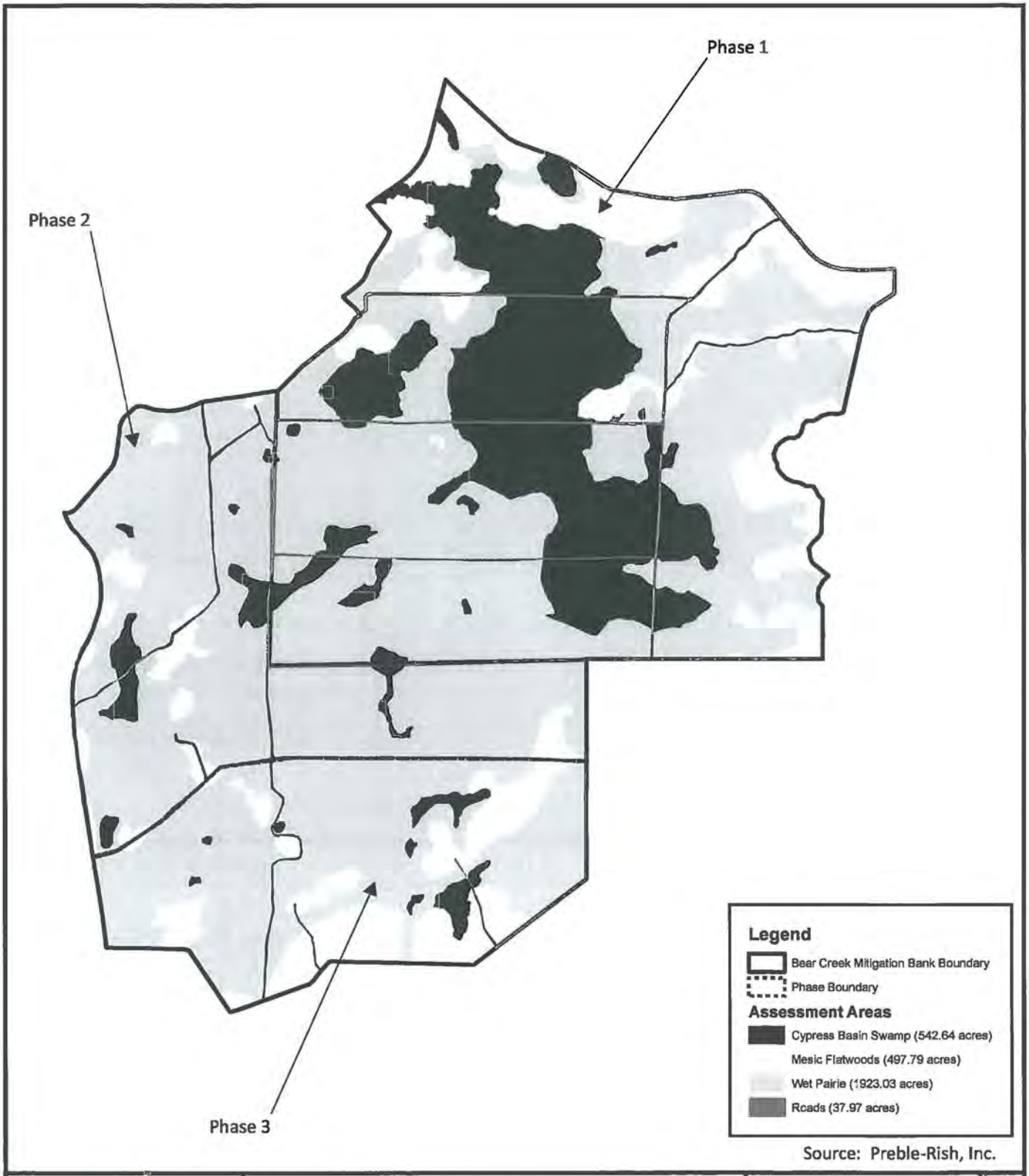
N
W E
S

Scale: 0 440 880 Feet

Date: 02/21/2011

Drawn By: SEG

Approved By: TFO



Source: Preble-Rish, Inc.

Mitigation Resources

Bear Creek Mitigation Bank
Proposed Communities
Bay and Calhoun Counties, Florida

M:\Projects\Bear Creek MB\RAI 3\Draft Permit Revisions\Figures\Figure 8 Proposed Communities

Figure No. 8
Project No. BCMB-004-07

N W E S

Scale: 0 660 1,320 Feet	Date: 04/12/2010
Drawn By: SEG	Approved By: TFO

Figure 9 - Community Specific Success Criteria and Cross Section			
Community/Targets	**Cypress Basin Swamp**	**Wet Prairie**	**Mesic Flatwoods**
Assessment Area I.D.	**CBS**	**WP / WP-PP / WP-PP-A / WP-HW / WP - W**	**MF-PP**
Herbaceous Groundcover	Appropriate and as described in Attachment A	80% total cover, >70% relative cover of herbaceous species (grass dominated)	80% total cover, >70% relative cover of herbaceous species
Species Diversity	Appropriate and as described in Attachment A	50 or more appropriate non-canopy FACW or OBL species with wiregrass as one of top five dominants	40 or more appropriate non canopy species with wiregrass as one of top five dominants
Shrubs	<50% cover-combined stata; reduced to coppice	Reduced to coppice <1.5m high and <20% aerial coverage	Reduced to coppice <1.5m high and <30% aerial coverage not counting palmetto
Canopy	<20 Slash pine/ac; 60% cypress-dominated canopy cover or >30%, increasing annually	<20 slash pine stems per acre; <30 total trees/ac. excluding cypress	30-70 stems per acre, 50 long leaf pine per acre taller than the grass stage, long leaf pine >80% of all saplings
Prescribed Fire Events	Prescribed fire to burn into CBS margins to control titi, decrease fuel and duff, promote groundcover	3 or more with > 80% cover; herbaceous response	3 or more with a minimum of 80% cover as qualitatively measured post burn
Hydrology	Meets wetland criteria; water levels equal across roads; no aparent drawdown due to ditch drainage	Meets wetland criteria; water levels equal across roads; no aparent drawdown due to ditch drainage	**N/A**

ATTACHMENT A: NATURAL COMMUNITY DESCRIPTIONS

Mesic Flatwoods (MF-PP) - (synonyms: mesic pine flatwoods, north Florida flatwoods, longleaf pinelands)

Target Community: Mesic flatwoods occur on flat or gently sloping terrain and are characterized by an open canopy of longleaf pine (*Pinus palustris*) with a fire-adapted, mostly herbaceous understory of grasses, forbs, and low shrubs and saw palmetto. Bracken fern (*Pteridium*) is also a common component of the groundcover at this site. Because the pine harvesting will leave a canopy of slash pine and subsequent planting will be longleaf pine, the resulting canopy will be somewhat mixed and immature. The final canopy structure will be comprised of 30-70 pine stems per acre with at least 30% comprised of longleaf pine per acre with an overstory of slash pine. Shrubs typical of mesic flatwoods include gallberry (*Ilex glabra*), various species of staggerbush (*Lyonia* spp.) and several species oak (*Quercus* spp.) that are kept low and shrubby by fire, as well as blueberry species (*Vaccinium spp*). Generally, wiregrass is the dominant ground cover. Other typical groundcover species include bracken fern, bluestem grasses (*Andropogon* spp.), St. John's wort (*Hypericum* spp.), lopsided indiangrass (*Sorghastrum secundum*), silk grass (*Pityopsis* spp.),dropseeds (*Sporobolus* spp.), panicgrasses (*Dichanthelium* spp.), and flowering forbs.

Pictures show slash pine canopy, to be replaced by longleaf by underplanting.

Cypress-Basin Swamp (CBS) - (syn: basin swamp, cypress stringer, freshwater swamp)

Typical Community Description: Cypress Basin Swamp systems within wet prairie are wetland natural communities that occur in shallow depressions or sloughs and are characterized by a canopy of pond cypress (*Taxodium ascendens*). Other trees include red maple (*Acer rubrum*) , swamp tupelo (*Nyssa sylvatica* var. *biflora*), sweetbay (*Magnolia virginiana*), and myrtle holly (*Ilex myrtifolia*). Shrubs such as titi (*Cyrilla racemiflora* and *Cliftonia monophylla*), fetterbush (*Lyonia lucida*), and sweet pepperbush (*Clethera alnifolia*) may also be present, often at high densities (no greater than 50% cover) within the interior of the swamp, but are mostly reduced to coppice along broad ecotones and often well into the basin swamp community. Shrubs in the deeper interiors of these wetlands should be restricted to hummocks. The groundcover stratum varies in density, with lush pyrophitic herbaceous vegetation common, and more shade tolerant species in the canopied interior, such as ferns like royal fern (*Osmunda regalis* var. *spectabilis*), chainfern (*Woodwardia virginca*) and cinnamon fern (*Osmunda cinnamomea*). Broad areas of the mapped community will interface and integrate with wet prairie often share the same set of herbaceous species in the groundcover with the adjacent pyrogenic community. These species include pitcher plants, wiregrasses and St. John's wort.

Wet Prairie (WP, WP-HW, WP-PP, WP-PP-A and WP-W) - (synonyms: pitcher plant bog, and seepage savannah. Also includes wet flatwoods on this site)

Typical Community Description: Wet prairies occur on flat or gently sloping terrain and are maintained by frequent growing season fires. As a result, these systems generally lack a canopy, although pond cypress, slash pine and longleaf pine may occur very sparsely. In areas formerly in silvicultural rotation, slash pine may be present in the canopy at low densities per acre. Wet prairies are dominated by a diverse groundcover mostly comprised of grasses such as threeawn grasses (*Aristida stricta*) and toothache grass (*Ctenium aromaticum*) in addition to other monocots such as yellow-eyed grass (*Xyris spp.*), beaksedges (*Rhynchospora* spp.), flatsedges (*Cyperus* spp.) and nutrushes (*Scleria* spp.). Insectivorous plants such as pitcher plants (*Sarracenia* spp.), sundews (*Drosera* spp.) and butterworts (*Pinguicula* spp.) can also be abundant within wt prairies. Other groundcover species include sneezeweeds (*Helenium* spp.), pipeworts (*Eriocaulon* spp.), bog buttons (*Lachnocaulon* spp.), club mosses (*Lycopodiella* spp.) and terrestrial orchids. Shrubby species such as titi, black titi (*Cliftonia monophylla*) myrtle dahoon and Apalachicola St. John's wort (*Hypericum chapmanii*) are kept low by frequent fire.

There are several areas within the bank that resemble target community, and all wet prairie qualitative and quantitative monitoring should approach or demonstrate significant trending toward the conditions in these areas.

ATTACHMENT B - PRESCRIBED FIRE MANAGEMENT PLAN

Summary
Prescribed fire on the property seeks to achieve three goals, while operating within safety and prescription constraints. The first is to conduct a fuel reduction and woody debris burn following mechanical harvest and shrub treatments. The second goal focuses on establishing desired fuel conditions for frequent controlled burns that promote the target habitat structure and function in the long-term. A third goal is to expand the aerial extent of burning into the Cypress Basin Swamp where titi dominates cover and inhibits groundcover and cypress seedling growth by shading and thick layer of organic duff. A successful burn shall mean that the fire carries over a minimum of 80% of the Mesic Flatwoods and Wet Prairie community types, extending into the adjacent Cypress Basin Swamp. No internal fire breaks will be established, except as directed by the certified burn specialist or QMS to avoid or control excursions from the prescription.

I. Burning Sequencing and Schedule

Restoring the fire-dependent ecosystems on BCMB will require an aggressive burning regime targeted toward a 2-3 year rotation. All units within each phase shall be burned within 2 years following the pine and shrub reduction activities in the phase within the Mesic Flatwoods and Wet Prairie and as much of the Cypress Basin Swamp as is deemed safe and practicable by the certified burn specialist and QMS. Thereafter, monitoring and inspections will dictate the season, intensity and rotation of each fire. However, if a burn is not initiated in a burn unit within 3 years of the previous burn, the Department must be notified.

All burns will be conducted under prescriptions developed by a certified burn professional experienced in restoration burning and authorized by the Florida Division of Forestry. Most burns will be targeted for the early growing season, though not constrained to that season. Frequency will be on average 2-3 year return interval. If wildfires are within prescription, they will be allowed to burn and count towards burn acres. Aerial ignition is likely to be the principle method to maximize coverage, but ground ignition may be used as recommended by the burn specialist and QMS.

II. Site Preparation

Currently the property is broken into phases each with multiple burn units segmented by management roads. Under most conditions, each burn unit will be managed individually. However, several burn units may be burned in one day or sequential days. Although desirable, it is unlikely that an entire phase will be able to be burned at one time, at least for the initial burns. Credit releases associated with a prescribed burn shall document that all burn units with the phase have been successfully burned at least the requisite number of times. Due to its rural location, BCMB should have few constraints. Nonetheless, appropriate safety precaution methodology will be followed.

III. Prescribed Fire Objectives/Standards

A. Performance Standards

Ideal wet prairie and mesic flatwoods will contain little midstory other than the recruitment of cypress or pine into the overstory. Initial fuel reduction burns should yield at least 80% of the understory scorched or consumed within the Mesic Flatwoods and Wet Prairie community types and a significant portion of the adjoining Cypress Basin Swamp. After the initial burn, subsequent burns will be targeted toward the dryer, early growing season as closely as possible without getting into a burn-ban period. These burns will target maximum scorch of woody shrubs and the maximum growth and flowering response of herbaceous vegetation.

Fire will not be restricted from entering the Cypress Basin Swamp (CBS), other than targeting soil moisture to discourage burning into the deepest areas of muck. However, much of the CBS has sandy soils under a layer of duff from woody shrubs, and fires are likely to carry through or across these shallow depressions. It would not be surprising if fire burned over 30-50% of the community with little to no detrimental effect on canopy trees.

B. Assessment Methods and Reporting

1) Preliminary Report: Shortly following the burn, the QMS and burn supervisor shall conduct a qualitative assessment of the following parameters:
   a) % of unit burned, i.e. groundcover/needle cast fuel consumption;
   b) woody understory scorch versus consumption;
   c) overstory tree crown scorch, wilting, etc.;
   d) other observations such as stump consumption, animal/insect mortality, unburned patches related to vegetation structure, etc. are noted.
   e) photos that exemplify typical areas and noteworthy elements will document the above assessment.
   f) This preliminary assessment may be sent to the Department shortly after the fire in a burn unit, and will be included in the following status report.

2) Success Report: The initial evaluation will be followed by an assessment of fire coverage and vegetation response by conducting qualitative transects and/or aerial photography that will be included in any request for credit. This assessment will summarize the initial evaluation, and also add notes and parameters evaluating the coverage and success of the burn in achieving ecological goals, as described in the permit for the entire phase.

3) Damage Report: Prescribed fires that fall out of prescription and are deemed by the QMS as detrimental to the short-term ecological success (such as complete crown scorch in the Cypress Swamp) will be reported to the Department within sixty days. With the help of the Department and IRT, appropriate contingency plans will be made.

ATTACHMENT C - PLANTING PLAN

A. Mesic Flatwoods (MF-PP)

Supplemental seeding and planting for groundcover establishment shall be used in selected areas of the mesic flatwoods following canopy thinning, shrub reduction and the initial prescribed burn. Areas to be seeded will be determined following multiple transects by the QMS to assess the natural groundcover response following the prescribed fire. Based on this assessment, the QMS shall submit a map the areas proposed for seeding, proposed application rates, proposed donor sites, and proposed methods to be used for review. Target seeding locations shall include the following: 1) those with little or no wiregrass, 2) those with <30% cover with native pyrophytic grasses, or 3) those where there are less than 10 herbaceous species in the groundcover. Donor-site criteria include the following: 1) the site is within or near the service area of the project; 2) the donor site has sufficient herbaceous diversity as determined by the QMS; and 3) the donor site has abundant wiregrass (*Aristida stricta*) in the mix. Seeding shall be accomplished by hand or sowing equipment onto the burned and prepared site. Prescribed fire shall be applied to seeded areas approximately 2-3 growing seasons after initial seeding.

Following the 1st or 2nd prescribed burn in any burn unit, longleaf pine (*Pinus palustris*) bare root or containerized seedling/saplings shall be planted at 60-100 stems per acre in the mesic flatwoods target community and extending ~100 ft into the adjacent wet prairie at a rate of 20-50 seedlings/ac. In addition, supplemental planting wiregrass plugs shall be planted wherever the existing groundcover or seeding is not expected to produce target diversity or wiregrass dominance criteria. The necessity of supplemental planting shall be determined by the QMS using quantitative monitoring data and/or qualitative observation. Plugs shall be planted on approximate 4' centers. Additional seed collection and propagation of additional species may also be necessary to meet species diversity success criteria, and will be planted as needed.

B. Wet Prairie

Supplemental seeding for groundcover establishment shall also be used in wet prairie Assessment Areas (WP-HW and WP-PP) to achieve success criteria. Following selective canopy thinning (through fire/mechanical treatment), the QMS shall assess the natural groundcover and initiate supplemental seeding as described herein for mesic flatwoods, and follow up with contingency planting of wiregrass clumps and other species, as needed.

C. Cypress Basin Swamp

Following the initial shrub reduction and fire, the QMS shall assess the density and distribution of pond cypress (*Taxodium ascendens*) and other appropriate canopy trees to determine the need for supplemental planting of cypress seedlings in order to meet success criteria. Bare root or containerized seedlings will be planted in the following winter.

D. Reporting and Implementation

The QMS-assessment of groundcover in the mesic flatwoods and wet prairie and of canopy in the cypress basin swamp, along with proposed planting and seeding methods and locations, shall be submitted to the Department within 6 months of the initial harvest and burn. The Department shall review the plan in writing within 60 days of its receipt for consistency with these criteria, make suggestions or request clarification or specification of the plan or conditions or specifically deny a portion (such as inappropriate donor site or disruptive mechanical dispersal) that is contrary to the permit's restoration goals, conditions and this attachment. Beyond this review, the Department shall not delay the implementation of this activity, as the risk of failure is on the permittee.

Attachment D – UMAM Assessment Summary and Table

Assessment Areas and general Part I descriptions:

This site consists of a ~3000 ac. parcel with approximately 2000 ac. of historic "Wet Prairie" community, with the remainder divided between "Mesic Flatwoods" community and "Cypress Basin Swamp" community. The site is basically an exceedingly flat depression, with a slight northeast to southwest slope across the site, most of which lies between 84' and 81' NGVD. Most of the site's discharge is from the south and west perimeter culverts and bridge, at the headwaters of Bear Creek. Historically, most of the acreage consisted of a broad band of sandy-soiled, wet prairie. Depending on fire frequency and position along the slope, the wet prairie expressions likely varied in pine density (higher near the pine flatwoods) and shrub and cypress density (higher near the cypress basin swamp). Overall, it was characterized by a dense and diverse graminoid, pyrophitic groundcover, with wiregrass and pitcher plants being keystone species.

Currently, the mesic flatwoods have been cleared of native longleaf and converted to slash pine plantation. Likewise, the wet prairie has been significantly impacted by previous harvesting of larger pine and cypress, and most has been converted to slash pine cultivation in bedded rows. Some of historic wet prairie areas have been cleared but not re-planted, with debris pushed into windrows; some areas have significant overgrowth of shrubs and seedlings from fire-suppression; and other areas have been recently re-bedded, with little or no planted pine. A few small areas of the wet prairie remain intact with only minor shrub cover. The cypress basin swamp has clearly been impacted by cypress logging and, due to that disturbance and fire suppression, is currently dominated by canopy-sized black titi, with cypress, slash pine, and, to a lesser degree, a mix of other wetland hardwoods.

The other significant impact in the land management practices has been the construction of a network of logging roads; the construction of these roads using onsite fill created a network of roadside ditches. Small culverts (15"-18") were typically placed under roads to reduce road wash-out and to connect the ditch system. In addition, large 36"- 48" culverts were placed in some natural drainage collections (tributaries, stringers) mostly along the west and south portion of the bank, typically below grade, in an effort to convey and increase drainage off the site. Some ditches traverse parcels with no roads to connect to these outfalls. The current hydrology of the site is generally reflective of regional rainfall and a relatively high, perched water table with vertical and lateral movement of water through sandy soils. Thus, except for some localized areas within and adjacent to the ditches, especially in the area of off-site drainage, there is little evidence of reduced or inappropriate hydroperiods. The mitigation plan, however, addresses the potential for the impoundment, channelization and localized drawdown of water by roads and ditches by the strategic placement of low water crossings and ditch blocks, or the removal of unnecessary fill roads.

General Part II scoring: There is a recognition that completion of the entire bank is more valuable than the 3 individual phases. Given that the mitigation bank proposal is for the entire site, the scoring is reflective and representative of the range of functions from each of seven assessment areas across the bank. The phasing is accounted for through the credit release schedule.

Location and Landscape:
In general, the location of the site in the overall landscape provides connectivity with adjacent wetlands lying within the lower Chipola basin, and comprises a significant portion of the headwaters supporting Bear Creek (St. Andrews Bay basin), a tributary of Deer Point Lake. While most habitats represented within its 3,000 acres are not restricted by major barriers, the degraded condition of each of the assessment areas' communities reduces wildlife and habitat abundance and connectivity between assessment areas to a level scored as moderate-good support of 7. Following enhancement activities, the abundance, availability and access of appropriate wildlife habitat between the onsite communities is improved, as well as increased support for the adjacent and downstream wetlands, and was scored a near-optimal 9. The surrounding silviculture landscape provides less than optimal support to the perimeter.

Hydrology:
In general, the current hydrology supports the existing communities, with little evidence of inappropriate hydroperiod or any water quality degradation. Principally, the current impacts to hydrology are directly associated with the silviculture and land management itself. The bedding causes unnatural microtopography-related hydrology shifts, and the pine trees and encroaching woody species alter water uptake, evapotranspiration, and resulting surface water availability. Restoring the native community plant composition and topography will reverse these impacts over time. The current ditch network on site has prevented connectivity within and between communities and increased some drainage off-site. The enhancement of natural drainage patterns due to low water crossings and ditch blocks or raised culverts will be most evident in the cypress basin swamp.

The water environment enhancements from the restoration plan are more pronounced in the wet prairie currently in pine plantation and with hardwood overgrowth areas (7 to 9), and less pronounced in wet prairie with windrows and the cypress basin swamp assessment areas (8 to 9). The remaining roads and ditches with their localized impediments to sheetflow through the system prevent a score of 10.

Vegetation Structure:
The principal components of the structure variable in this environment are: appropriate species; appropriate diversity and distribution of these species; appropriate vertical structure (i.e., canopy and groundcover); and the ability of the vegetation to carry and withstand fire. Silviculture and other on-side land management have had the greatest effect on the community structure.

The planted mesic flatwoods and the planted wet prairie have a current condition score of 4 and 3, respectively, reflecting the relatively greater alteration of vertical structure and species diversity in the prairie. Wet prairie with recent pine preparation or planting was scored a 4 because the vertical structure is not as altered, allowing for light penetration, while diversity and fire carrying potential is still significantly impaired. Wet prairie with windrows had appropriate grass species but impaired species richness, inadequate cover of perennial pyrophitic clump grasses, and inappropriate topography and shrub growth in the windrows, and was scored a 5. Finally, wet prairie that has been overgrown with shrubs was scored a 6 because it retains much of the potential for carrying fire and at least remnants of appropriate groundcover diversity, although current vertical structure is degrading its function. In the enhanced condition, these areas were scored a near-optimal 9 except for the bedded and planted wet prairie (scored 8) which is unlikely to attain that level of natural density and diversity in the ground cover due to the current lack of native vegetation and seed source. The cypress basin swamp was scored a 6 in its current condition because of the relative shortage of large canopy trees, and an inappropriate cover of and shading by titi and other shrubs, reflecting its history of logging and fire suppression. These shrubs produce a dense duff that not only creates a catastrophic fire risk, but also reduces appropriate groundcover. The enhanced condition was scored an 8 because, within the capacity of mechanical or herbicide or fire treatment of these shrubs, they will continue to exist at a cover level that will continue to have some impact on wetland tree seedling and canopy development, groundcover, and fire patterns. There is a small area of relatively intact prairie that, because of its current high-quality condition, is appropriate for preservation, and has a p-factor of 0.8 because of its critical value in providing a seed source (and reference site) for the rest of the project.

All of the restoration/enhancement assessment areas received a risk factor of 1.25 due to the risk of conducting prescribed burns, without wildfire damage or intervention, at a time and frequency necessary to attain the scored outcomes within the timeframes. Timelag is measured as the time necessary to attain the scored outcome function, considering also the credit release schedule. These time lags for each restoration assessment area reflect the time necessary for long leaf pine maturity and establishing groundcover diversity in mesic flatwoods, perennial pyrophitic clump grass cover and diversity in wet prairies, and for tree canopy cover shift in cypress basin swamp.

Credit types:

Credits are defined as "Wet Prairie/Flatwoods" (82%) and "Forested Wetland" (18%). All WP assessment areas plus 2/3^{rds} of the credits generated by upland areas are attributed to the former; all CBF plus 1/3rd of upland generated credit to the latter. A summary of assessment areas and scoring can be found in the following table.

ATTACHMENT D - Summary Table

Bear Creek Mitigation Bank - UMAM Assessment																
ASSESSMENT AREA	MITIGATION DESCRIPTION	AREA (acres)	SCORE						UMAM W/OUT MIT.	UMAM WITH MIT.	DELTA	TIME LAG	P FACTOR	RISK	RFG	CREDIT
			LANDSCAPE AND		WATER ENVIRONMENT		COMMUNITY STRUCTURE									
			W/OUT or CUR.*	WITH MIT.	W/OUT or CUR.*	WITH MIT.	W/OUT or CUR.*	WITH MIT.								
MF-PP	Mesic Flatwoods from Pine Plantation	497.8	7.00	9.00	n/a	n/a	4.00	9.00	0.55	0.90	0.35	1.25		1.25	0.22	**111.5**
CBS	Cypress-Basin Swamp Enhancement	542.6	7.00	9.00	8.00	9.00	6.00	8.00	0.70	0.87	0.17	1.14		1.25	0.12	**63.5**
WP	Wet Prairie Preservation and Fire Management	7.5	7.00	9.00	7.00	9.00	6.00	9.00	0.67	0.90	0.23	1.00	0.80	1.00	0.19	**1.4**
WP-HW	Wet Prairie from Hardwood Dominance	457.3	7.00	9.00	7.00	9.00	6.00	9.00	0.67	0.90	0.23	1.00		1.25	0.19	**85.4**
WP-PP	Wet Prairie from Pine Plantation	1141.9	7.00	9.00	7.00	9.00	3.00	8.00	0.57	0.87	0.30	1.14		1.25	0.21	**240.4**
WP-PP-A	Wet Prairie Harvest/Pine Prep (still herbaceous)	107.0	7.00	9.00	7.00	9.00	4.00	8.00	0.60	0.87	0.27	1.14		1.25	0.19	**20.0**
WP-W	Wet Prairie from Past Harvest with Windrows	209.3	7.00	9.00	8.00	9.00	5.00	9.00	0.67	0.90	0.23	1.00		1.25	0.19	**39.1**
	Roads	38.0														
TOTALS		**3001.4**														**561.2**

* All assessment areas are scored in Current Condition except the preservation wet prairie that uses Without Preservation

CREDIT TYPES: All WP assessment areas are "Wet Prairie/Flatwoods Credits" (WP/F) ; CBS area are "Forested WetlandCredits" (FW); Credits from uplands are split with two-thirds to WP/F credit type and one third to FW credit type reflecting their position and functional support of both habitat types.

CREDIT TOTALS: "Wet Prairie/Flatwoods" credits = **460.6** 82% "Forested Wetland" credits = **100.6** 18%
(Rounded to tenths)

Phase 1: 246.6 WP/F and 54.1 FW **Phase 2:** 112.0 WP/F and 24.6 FW **Phase 3:** 101.6 WP/F and 22.3 FW

Attachment E - Ledger

Bear Creek Mitigation Bank Ledger
Permit No. 0294280-001
Date

Wet Prairie/Flatwoods: Total Potential Credits = 460.6

Release or Impact Permit	Permit Date	Issuing Agency	Ledger Modification	Credits Added	Credits Used	Balance	Notes
Credit Release	**date**	FDEP		**xx**		**xx**	easement; security; QMS
Project 1	xxxxxxx	FDEP	xx/xx/11		y	xx-y	
Project 2	xxxxxxx	FDEP	xx/xx/11		y	xx-y	

Forested Wetland Credits: Total Potential Credits = 100.6

Release or Impact Permit	Permit Date	Issuing Agency	Ledger Modification	Credits Added	Credits Used	Balance	Notes
Credit Release	**date**	FDEP		**xx**		**xx**	easement; security; QMS
Project 3	xxxxxxx	FDEP	xx/xx/11		y	xx-y	
Project 4	xxxxxxx	FDEP	xx/xx/11		y	xx-y	

ATTACHMENT F - Monitoring Plan

Abstract: The monitoring of the enhancement of Assessment Areas at Bear Creek Mitigation Bank (BCMB) shall consist of quantitative and qualitative vegetation data collection, recording instrument and soil core water level data, and aerial and ground photography. Qualitative and quantitative vegetation monitoring will be conducted in September (approximate - generally described as 'fall' or at the end of the growing season). The first monitoring shall be conducted in the first fall following the initiation of a phase, prior to enhancement activities onsite to establish baseline data and to determine any necessary revisions to the monitoring plan. Vegetation monitoring will also be conducted at the end of the first fall following the completion of the permitted restoration activities in a phase, as an assessment of conditions for reference in the determination of interim success. Monitoring will continue annually thereafter until final success attainment. The specific monitoring techniques to be employed are described below.

A. Quantitative Vegetation Monitoring

1) Introduction: Quantitative monitoring parameters shall consist of:
   a) percent cover and composition of groundcover species;
   b) percent cover and composition of shrub species;
   c) diameter at breast height (dbh) and composition of canopy species;
   d) species, counts and heights of seedlings (distinguished as planted or natural recruitment) of canopy tree species and of cabbage palms in any stratum

The raw data will be extrapolated to measure success criteria, including percent cover of nuisance and invasive exotic species, tree stem counts (stand density), percent cover of dominant or target species (e.g. wiregrass in mesic flatwoods and wet prairie Assessment Areas), and shrub height and cover. The monitoring data shall also be used to supplement qualitative assessments of planting and seeding success, as well as interim and final success criteria.

2) Methods: Methods are based on Barry and Saha (2008). A total of seventy four 50 meter (m) transects shall be established using a sub-meter Global Positioning System as indicated in Figure F-1. Transects will be installed upon implementation of each phase; Phase I contains 42 transects, Phase II contains 19 transects, and Phase III contains 13 transects. Each transect shall be permanently marked with rebar at each end. Trees in the vicinity of each transect end shall be flagged using pink tape to assist in relocating transects. A 50 m transect tape shall be strung between the two transect endpoints at a taut/straight position for consistency. Transect bearings vary, but the origins of the transects always begin at the north or east terminus. A schematic diagram of the monitoring transects is in Figure J-2.

The vegetation along the transects will be divided into three strata, as defined herein, and identified to species level, when possible. **Canopy** will be defined as woody vegetation typically considered as having a "tree" growth form, with a diameter at breast height (dbh) greater than 1 inch (2.5 cm). The **shrub** layer consists of saw palmetto, vine foliage (between 1m and 3m), and woody vegetation > 1m in height. Common shrub species, such as wax-myrtle (*Myrica cerifera*), Carolina willow (*Salix caroliniana*), and saltbush (*Baccharis* sp.) that may attain a dbh greater than 1 in./2.5 cm will be counted in the shrub layer. **Groundcover** consists primarily of vegetation that is <1 m (and annual or herbaceous species such as sawgrass or dog fennel that may grow taller than 1 m), and will be further distinguished as wiregrass, graminoid, or 'other' herbaceous species, shrubs, tree seedlings or vines.

Canopy trees shall be identified and recorded along 5 m wide belt transects. Diameters of all canopy trees shall be measured and the location along the transect noted to facilitate re-sampling and to document plant health, survival/mortality and recruitment. Planted trees, regardless of stratum or size, shall be tagged along transects in order to document health, survival and height. In addition to tree counts, the belt transects will be used to provide semi-quantitative cover estimates for vine foliage >3m. Additional belt transects may be needed to obtain representative sampling. Qualitative estimates of (non-vine) canopy cover and of vine cover shall be documented in all belt transects. Canopy data shall be supplemented and supported by up to date (<2 yr old) aerial photography (oblique OK).

The composition and cover of the shrub strata shall be quantified using the line-intercept method (Mueller-Dombois & Ellenberg 1974) along each transect. Intercept lengths include all overhanging or underlying shrub species (except those recorded in groundcover quadrats) and vine foliage between 1m and 3m. From these data, percent coverage shall be estimated. Planted shrub species along monitoring transects will be noted and survival documented.

Groundcover species composition and cover shall be quantified using a 1 m square quadrats placed at 5 m intervals along the transect using modified Daubenmire (1959) cover classes for all species and overhanging shrub and vine species. These seven cover classes shall be: <1%; 1-5%; 5-25%; 25-50%; 50-75%; 75-95%; and, 95-100%. All plant species whose stems originated from within the quadrat shall be assigned cover class values. The portions of shrubs and vines <1m that overhang the quadrat shall be assigned cover class values regardless of where the stems originate. Non-vegetated portions of the quadrat (bare ground, leaf litter and water) shall be recorded in the same manner to allow for calculation of absolute cover.

All plant nomenclature shall follow Wunderlin (2003). Species not identified to species level shall be identified to the lowest taxonomic level possible and a specimen shall be taken from outside the transect as a voucher if possible.

3) Data Entry: Data and tables shall be provided in a Microsoft Excel database. Data recorded include: a) belt transects: tree species, count, planted trees height, cover estimates for canopy and vines; b) line intercept data: palmetto, tree and shrub species and cover estimates, and vine cover estimates, c) quadrat data: species with absolute and relative cover, growth form (graminoid, herbaceous, woody, shrub, seedling, vine), indicator (UP, FAC, etc., exotic, nuisance), cover and/or size, planted *vs* volunteer (for trees), and potentially other relevant characteristics.

4) Data Analyses: Descriptive statistics shall be calculated and presented for each of the field methods including standard forestry parameters such as density for belt transect data, percent cover for line intercept data, and absolute percent cover and relative percent cover in quadrats. Formulas for calculating these statistics shall be as follows:

Tree Density = $\sum S_i$/ Area; Where S_i = the number of stems for a given species

Total Shrub Cover = $\sum S_{total}$/ transect length; Where S_{total} is the sum of the intercept length of all shrub species.

Percent Cover (for individual species) = $\sum S_i$/ transect length; Where S_i is the sum of the intercept length of a given species. Note that since this method counts overhanging and underlying vegetation, it is possible to have greater than 100% cover, but each individual cover will be reported as a proportion of total shrub cover.

Total or Absolute Groundcover Cover = 100 - %cover bare ground/water/leaf litter

Relative Percent Cover (for the groundcover stratum) = $\sum S_i/S_{total}$

Where S_i = the % cover class value of a given species (or class of interest, such as exotic species) and S_{total} = the sum of all ground cover class values across a given transect.

B. Qualitative Monitoring

Qualitative monitoring information to be included in the monitoring reports shall consist of: a) an overall hydrologic assessment of the wetland; b) estimation of the percent cover and dominant species in each community type (and any pragmatic sub-grouping identified during monitoring); c) documentation of the presence or spread of nuisance species including significant vine cover; d) wildlife utilization; e) general biological integrity of each assessed community; and, f) an indication of the similarity

to quantitative sampling (i.e., how representative is it). This information will gathered by observations along pedestrian transects through several polygons of each community type. These transects shall be recorded with GPS for mapping in the monitoring report.

Vegetation: Qualitative vegetation monitoring shall occur at each quantitative sampling transect, in addition to points along pedestrian transects covering areas without quantitative plots. Vegetation cover and dominant species data shall be noted at points along the pedestrian transects identified before sampling, such that there are at least 2 qualitative points of the same community type for each quantitative transect (which will also have qualitative point data). All qualitative points will be GPS located. Vegetation Monitoring Data Sheets (Exhibit A) will be used for notes on the points and to summarize the condition of each quantitative transect or pedestrian transect segment. Notes on general health and reproductive status of vegetation, overall estimates of cover and dominant species, notation of recruitment of new species, the presence or spread of nuisance/exotic species, and the hydrologic condition, wildlife use and general observations shall be recorded on field data sheets. An evaluation shall be made regarding how representative the monitoring areas are relative to the community being measured. Potential problems and appropriate solutions shall also be identified.

Photographic Stations: Photographs shall be taken in cardinal directions at permanently established endpoints of each quantitative transect. Additional photographs will be taken along the pedestrian transects, representing typical conditions. These photographs shall provide additional documentation on the conditions. The latest available aerial photos will also be provided with rectified or oblique photos provided annually.

Wildlife Utilization: Wildlife observations including direct sightings, scat, tracks, nests, vocalizations or other signs shall be recorded.

C. Hydrologic Monitoring

Hydrologic data shall be collected daily by means of automated Water Level Recorders (currently installed and operational) as depicted in Figure F-1. The data will be collected from all recorders in all Phases to be analyzed and reported within each semi-annual status report until there is a success determination. Within 60 days of permit issuance, the current hydrologic data shall be re-verified and calibrated, and graphs of that data shall be submitted to the Department for approval of the format of the data graphs to be submitted with the status reports, and to be used for success determination. A synopsis of data, and subsequent analyses, shall be addressed in the Annual Monitoring Report and compared to previous data and related success criteria.

Additionally, field samples will be taken at each qualitative point to corroborate Water Level Recorder data. Surface water depths will be measured or, if no surface water is

evident, a standard shovel soil core sample (~12-18 inch depth) will be conducted to measure the depth to saturation and depth to groundwater intercept, if possible. Data provided include recorder hydrographs, sample date, core photos, and notes on hydrology indicators and hydric soils. These data will be reported with the quantitative data and used to determine if water level recorder data is representative or additional data is required.

D. Prescribed Fire Monitoring

Subsequent to each prescribed fire event, the total burned area shall be quantified in order to determine if a burn can be deemed successful. The perimeter of a burned area shall be traversed with a GPS unit and a track log shall be taken. Significant un-burned inclusions within the burned area shall also be traversed in the same manner. GIS analysis of this information shall be used to calculate the total acreage burned. Aerial photographs, when available, that show apparent, well defined burned areas can augment (or, if rectified and observable, possibly substitute for) the above method. Additional observations on plant community response (i.e. seeding, flowering and coppice production) to the fire would also be documented. These reports will be sent with the following status report and summarized with any request for credit release.

F. Reporting

Monitoring reports shall be provided in accordance to the Department's guidance provided in 2011, and with any Department-recommended changes following the initial (baseline) report (1st fall after issuance) and 'time-zero' report (following initial enhancement activities).

After the initial baseline or time-zero sampling, it may become apparent that modifications to transect locations or sampling protocol will lead to a simpler and/or representative method. The permittee will propose alternative locations or protocols to the Department for review and written approval. If the changes are significant, a permit modification may be required.

For the final success determination, the report shall summarize all of the previous reports and provide information on when each Assessment Area attains UMAM scores proposed during the permitting process. It shall contain photographic and qualitative documentation that all community types have maintained that level of success or greater. Finally, it shall provide information useful for the continued successful management of the site.

ATTACHMENT F – Exhibit A – Sample Field Sheet – Qualitative Data for Assessment Areas

Transect Identifyer	DATE	TIME	WEATHER	FLUCCS
Ped #3			Cloudy, 85	643

COMMUNITY	Wet Prairie
PLANT SPECIES (generally in order of dominance per stratum)-summary of all points	CANOPY: slash pine dominant nut ~15-20% of canopy is cypress or sweetbay GROUNDCOVER: dominated by Rynchosporas and titi sprouts, but patches of wiregrass were seen (GPSed)
PHOTOS	#/transect 1 – wiregrass area 2- soil core 3,4-typical canopy, note grape 5-7 groundcover - typical 8- pine thicket (typical of ~20% area)
NUISANCE/EXOTIC SPECIES	Muscadine grape dense on remaining pine (estimated 25% cover); scattered tallow
CANOPY PERCENT COVER	25-30%
PERCENT COVER – VEGETATION	80-90%
PERCENT COVER – BARE GROUND	<20%
DIVERSITY	**Approx # of Species/Type** - ~25 -moderate (~3 trees, 3shrubs, 15+ herbaceous, 2 vine)
DISTURBANCE INDICATORS/ SEVERITY	Inappropriate shrub density, low diversity, needs fire
WILDLIFE USAGE	**List fish, herps, birds, mammals and approximate # or other evidence**
Saw several unidentified song birds, saw 2 red-shouldered hawks perched, crayfish mounds, scat – raccoon?, deer hoof track,	

WETLAND INFORMATION

CORE SAMPLE DATA POINT 1
Coordinates:

HYDRIC SOIL INDICATORS	
INDICATORS OF HYDROLOGY	
DEPTH TO SATURATION	

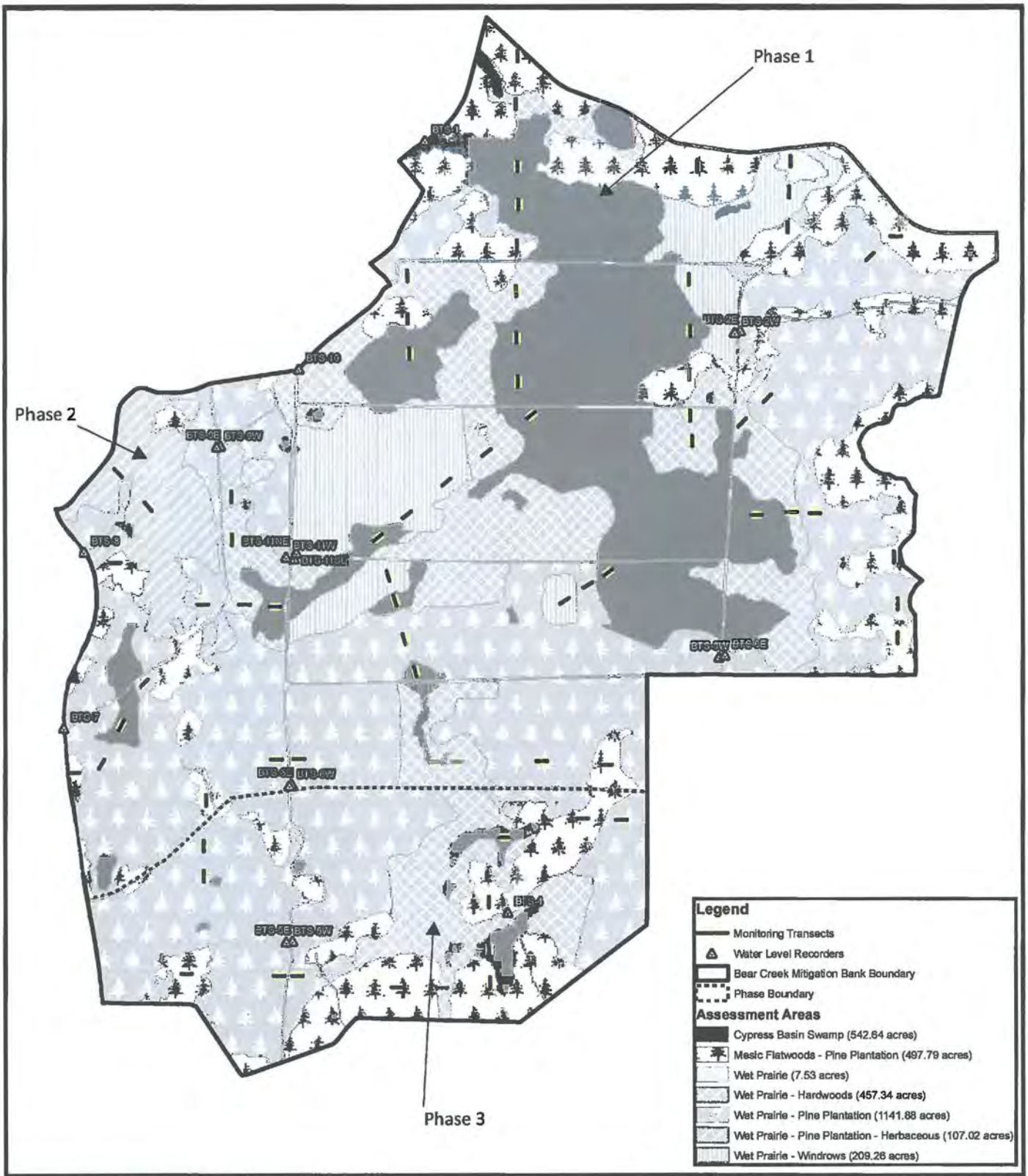
CORE SAMPLE DATA POINT 2
Coordinates:

HYDRIC SOIL INDICATORS	
INDICATORS OF HYDROLOGY	
DEPTH TO SATURATION	

COMMENTS/SUMMARY

Point 1- really shrub dominated with pine sapling/young treed - FIRE
Point 2-wetter and better – mostly herbaceous and some wiregrass nearby
Point 3-lots of andropogon with herbaceous forbs, shrub cover OK, no wiregrass
Etc.

…..Mostly just needs more fire, but southern portion area around point 3 should be plugged with wiregrass



Mitigation Resources

Bear Creek Mitigation Bank
Monitoring Plan
Bay and Calhoun Counties, Florida

M:\Projects\Bear Creek MB\RAI 2 (8-2009)\Figures\Draft Permit Figures\Monitoring Plan

Figure No. F1
Project No. BCMB-004-07

N W E S

Scale:	Date:
NTS	04/12/2010
Drawn By:	Approved By:
SEG	TFO

Monitoring - Figure F-2