

ATTACHMENT C: MITIGATION WORK PLAN
FOR **PINE FLATWOODS/SAVANNA** HABITAT
[NAME OF BANK] MITIGATION BANK

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MITIGATION WORK PLAN FOR PINE SAVANNA HABITAT

[Information in brackets and red font are instructions to be followed during the composition of this document. Information in black font is considered required language and any changes requested in this language must be provided with a supportive comment as to the reason for such changes. Changes will be considered on a case-by-case basis. Changes in the standard language may result in extended review time]

I. Bank Property

A. Property Location

The center point of the property is located at latitude [Coordinates in decimal degrees] and longitude [Coordinates in decimal degrees] in [Name] Parish, Louisiana (See Attachment A). the location includes all or portions of Sections, Township and Range. The property is located approximately xx miles [Compass Direction] from [Town Name], Louisiana. The property is located in the [HUC] and [Watershed Name].

Driving directions to the site are as follows: [Give directions from the largest nearby city].

B. Property Ownership

The property owner is XXXX XXXXX (Owner), who/which has owned the property for XX years.

C. Property Legal Definition

A certain parcel of land, together with all buildings and improvements thereon, and all of the rights, ways, privileges, servitudes, prescriptions, advantages and appurtenances thereunto belonging, or in anywise appertaining, situated as stated above and more fully described as follows:

[INSERT LEGAL DESCRIPTION OF THE PROPERTY TO BE ENCUMBERED BY THE CONSERVATION SERVITUDE HERE].

The perimeter of the Property is defined by the following coordinates in decimal degrees:

Latitude _____ N and Longitude – _____ W
Latitude _____ N and Longitude – _____ W
Latitude _____ N and Longitude – _____ W
Latitude _____ N and Longitude – _____ W

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Latitude _____ N and Longitude – _____ W
Latitude _____ N and Longitude – _____ W

D. Recorded Liens, Encumbrances, Easements, Servitudes or Restrictions

Clear and merchantable title to the Property has been documented by a title report/opinion (Attachment B) generated by [Company Name] which was **updated two weeks prior to execution of the conservation servitude**. Any exceptions to the real estate title not subordinated to the conservation servitude are listed below:

[PROVIDE A DETERMINATION AS TO WHETHER OR NOT THERE ARE ANY RECORDED LIENS, ENCUMBRANCES, EASEMENTS, SERVITUDES, OR RESTRICTIONS ON THE PROPERTY THAT CAN NOT BE SUBORDINATED TO THE CONSERVATION SERVITUDE OR WOULD OTHERWISE AFFECT THE RESTORATION/ENHANCEMENT/ PRESERVATION EFFORTS ON THE PROPERTY CONTRARY TO THIS MBI.]

II. Objective

The Bank will provide [INSERT AMOUNT] acres of [RESOURCE TYPE] to compensate for unavoidable wetland impacts for the [WATERSHED] area. Goals, objectives and contributions to overall watershed/regional functions provided by the Bank are described in this Mitigation Work Plan.

A. Aquatic Resource Type and Functions to be Restored/Enhanced /Preserved

This Bank will provide [Method(s) of Compensation] [X] acres pine flatwoods/savanna (PF/S) habitat.

[Describe the habitat type, including any habitat inclusions, that this project will be restoring utilizing information from *The Natural Communities of Louisiana* published in 2009 by the Louisiana Department of Wildlife and Fisheries and the Louisiana Natural Heritage Program.]

This project will [Identify the wetland functions that will be restored, enhanced, and/or preserved from this mitigation bank].

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B. Watershed Contributions

1. Watershed Need

[Describe the needs of the watershed, ecoregion, physiographic province, or other geographic area interest for wetland restoration/enhancement/preservation and how this compensatory mitigation project would address those needs]

2. Watershed Benefits

[How this compensatory mitigation project would address the needs listed above]

III. Site Selection

[Describe all factors considered during the site selection process. This should include:

1. Consideration of watershed needs
2. Onsite alternatives where applicable.
3. The practicability of accomplishing ecologically self-sustaining aquatic resource restoration, establishment, enhancement, and/or preservation at the compensatory mitigation project site. (See § 332.3 (d)).

IV. Site Protection instrument

A conservation servitude placed over [insert acreage] will serve as the site protection instrument. (See Section X. Long-Term Protection and Maintenance, Subsection A. "Conservation Servitude" of this MBI.)

V. Baseline information

This section contains both the historical and current ecological and physical information about the Bank Site.

A. Land Use

1. Historical Land Use

[Identify and describe the history of land use for the Bank. Starting with the oldest obtainable property record, provide the time-frame of each type of land use as well as the source of such information. If the property has a logging history please provides the date that it was last logged.]

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2. Current Land Use

[Identify the official land use(s) of the site and within one mile of the site boundary. Identify the source of this information and reference a map that should be provided that shows these land uses and follows the requirements identified in the most current “Checklist for Mitigation Bank Drawings”.]

B. Soils

[Provide the following:

1. A soil map as an attachment showing all soil types on the Bank site and reference the attachment in this Section.
2. An identification and description of the soils on the Bank site using the most current Natural Resource Conservation Service (NRCS) Soils Layer.
3. A substantiation for each soil type as to whether NRCS has identified the soil, as hydric or non-hydric for this parish location (the Bank site).
4. A discussion describing how past land uses may have impacted the soils.
5. Details on the source of information including the year that it was collected and/or published.]

C. Hydrology

1. Historical Hydrology and Drainage Patterns

[Provide the following:

1. A description of the sources of water that historically affected the Bank site and drainage patterns of these sources prior to any artificial, human-induced impacts to that hydrology.
2. Provide a map showing this “pre-impact” drainage pattern as an attachment and reference it in this section.
3. Include the historical hydrology patterns of the site on the above map.
4. Provide a description of all impacts to drainage that have occurred over time inclusive of approximate time frames of such changes.]
5. Provide a copy of the Corps issued JD with a reference number.

2. Existing Hydrology and Drainage Patterns

[Provide the following:

1. A description of sources of water currently affecting the Bank and the current drainage patterns that exist on the Bank site.
2. Provide a map as an attachment showing the existing drainage patterns on the Bank site.
3. Describe all current impacts to drainage on the site and describe how these Impacts have altered the hydrologic regime of the site.

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4. Describe what challenges, if any, these impacts will have on the sponsor's ability to restore hydrologic restoration to the site.

D. Vegetation

1. Historical Plant Community

[Provide a description of the habitat type(s) that historically occurred on the Bank site while providing a time frame for the presence of this/these habitat type(s) as well as a reference for the source of such information. Discuss any changes that have occurred over the years while giving approximate time frames for such changes as well as probable reasons for such changes and give reference support this information.]

2. Existing Plant Community

[Provide the following:

1. A Description of the existing plant communities located on the Bank site.
2. A species list of those individuals in each community. This list should include exotic/invasive species, percentage of each, maximum DBH of dominant species, and the percent overstory, midstory, and understory in each community.
3. A map that clearly shows the location and acreage of the different communities that exist on the Bank site.
4. A map that clearly shows the existing elevations of the Bank Site.
5. Provide a reference number for the above mentioned map in this section.

VI. Description of Work

This Bank will provide [Insert Amount] acres of [Resource Type] to compensate for unavoidable wetland impacts for the [Watershed Name] area (See Attachment MWP-A). In order to accomplish this task, the Sponsor shall complete the following soils/hydrologic and habitat work.

A. Soils/Hydrologic Work Plan

[Provide detailed work descriptions and written specifications for all work that is intended to affect the current hydrology of the Bank site including but not limited to the following:

1. Complete description of all construction methods used with timing and sequence. If work is to be performed in phases provide an explanation of the reason for such decision as well as a map depicting the different phases..
2. Complete description of all work. This description shall include a preparatory plan that discusses any clearing, grading, and pre-planting burns.
3. Provide plan views and cross sectional views of all work, with appropriate

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legends on the drawings to depict the work that is being done.

4. Maps that identify the location of adjacent waterways and are referenced in this section.
5. Proposed grading plan, including elevations and slopes of substrates with drawings that depict such work.
6. Soil management and erosion control measures.
7. An explanation of how the completion of such work will support this restoration project.]

B. Vegetation Work Plan

[For each habitat type that is being restored/and or enhanced provide specific information and specifications on the restoration plan, including but not limited to:

1. List of plant communities to be established.
2. Complete species list and the percentage of each species planted. (**Note: For an initial longleaf pine planting there must be present an initial density of 300 trees per acre. Seedlings can be planted in cohorts or patches where a well-developed grassy ground cover is in place, averaging 25-50 trees per cohort, or may be planted in a linear fashion in areas lacking a well-developed grassy ground cover where follow-up chemical release of seedlings will be necessary.**)
3. Methodology used for the establishment of desired plant communities.
4. Discussion of regeneration.
5. Species distribution.
6. Planting methods.
7. Herbivory minimization and control plan.
8. Weed species minimization and control plan.
9. Exotic nuisance vegetation control and management plan.]

VII. Maintenance Plan

[Provide a detailed description and schedule of the perceived maintenance requirements for the Bank, throughout the different work phases, to support the restoration efforts. This information should reflect the maintenance (including a burn plan) that is required to insure the continued viability of the resource once initial construction is completed and before the long-term milestones have been achieved.]

VIII. Performance Standards

In order for the Bank to be considered acceptable for mitigating wetland impacts associated with DA permits, the Property will be restored in accordance with the Mitigation Work Plan such that it meets wetland criteria as described in the 1987 Corps of Engineers Wetland Delineation Manual (the 1987 Manual) as well as the November 2010 Regional Supplement for the Corps of Engineers Wetland Delineation Manual:

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Atlantic and Gulf Coastal Plain Region Version 2.0. Performance standards (success criteria) used to measure the success of the Bank are provided below.

Ecological enhancement of pine flatwoods/savanna and related habitats is measured by the progress from its current state (as described in the baseline conditions) towards an open, highly species diverse pine flatwood/savanna ecosystem with natural bayhead and slash/pine pond cypress (Southeast Louisiana only) or flatwood ponds (Southwest Louisiana only) inclusions occurring in isolated pockets and along drains. Elements that can be measured to show this progression include basic hydrologic information, longleaf pine seedling survival and growth data, vegetation composition and structure (including overstory species and percent (%) cover, midstory woody composition and percent (%) cover, and groundcover composition and percent (%) cover). The control of woody shrubs and hardwood encroachment or lack of encroachment into savanna areas can be used to measure the success of management in moving the site to a high quality ecosystem. The following criteria use these elements to measure success.

A. Initial Success Criteria

1. Hydrology: Ground surface elevations must be conducive to establishment and support of hydrophytic vegetation, and re-establishment and maintenance of hydric soil characteristics. To that end, all alterations of the natural topography (ditching, spoil banks, land leveling, bedding, fire breaks, etc) that have affected the duration and extent of surface water have been removed or otherwise rendered ineffective in accordance with this Mitigation Work Plan.

2. Vegetation: Floristic survey of current site conditions completed. During dry season, non-indigenous hardwood overstory species within the savanna areas will be removed to a level below 10% canopy coverage and non-indigenous pine species will be thinned to below 40% canopy coverage. For an initial longleaf pine planting there must be present an initial density of 300 trees per acre. Seedlings should be planted in cohorts or patches where a well-developed grassy ground cover is in place, averaging 25-50 trees per cohort, or planted in a linear fashion in areas lacking a well-developed grassy ground cover where follow-up chemical release of seedlings will be necessary. The planting will follow the planting regime described in the site restoration plan. A minimum of 50 trees per acre must survive through the end of the spring following planting (i.e. Year 1). Controlled burns must have occurred throughout the site including along the margins of and into bayheads.

B. Interim Success Criteria

1. Hydrology: By Year 5 (four years following attainment of the one-year survivorship criteria) site hydrology will be restored such that the Property meets the wetland criterion as described in the 1987 Manual as well as the November 2010 Regional Supplement to the Corps of Engineers wetland Delineation Manual: Atlantic and Gulf

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Coastal Plain Region Version 2.0. Data demonstrating that wetland hydrology has been re-established is to be collected by the Sponsor and submitted to CEMVN in the monitoring report for the interim success criteria.

2. Vegetation and Vegetative Plantings:

a. A minimum of 40 longleaf pine seedlings/saplings per acre have survived through 3 growing seasons. These must exhibit at least 4 consecutive years (after 1 year survivorship) of annual increase in stem ground diameter or height from ground to bud tip.

b. Plant composition of pine flatwoods/savanna and related habitats. Vegetative monitoring data should indicate that:

(1) The diversity of desirable indigenous herb species (Attachment MWP-D) shows progress toward the long-term standard of 10+ species on average per square meter (10.75 sq. feet) with a minimum average of 5 desirable species per square meter, and;

(2) Undesirable species have become less prominent, averaging less than 1 undesirable species present per plot, and;

(3) Woody shrub height and density are managed such that the average height is less than five feet and cover is less than 20%. The Bank and the perimeter will be virtually free (approximately 5% or less on an acre-by-acre basis) of exotic/invasive vegetation.

Select one of the appropriate success criteria for habitat inclusions below:

(4) Vegetative composition of bayhead swamps closely resembles that for undisturbed bayhead swamps. At least five overstory species should be represented in the bayhead swamp. Typical species for this habitat include *Magnolia virginiana*, *Nyssa sylvatica*, *Taxodium ascendens*, *Pinus elliotii*, *Quercus laurifolia*, *Acer rubrum*, *Liquidambar styraciflua*, and *Liriodendron tulipifera*. Should species indicative of natural bayheads not be present the sponsor shall begin a restocking program to increase species diversity.

OR

(4) Vegetative composition of flatwood ponds dominated by obligate and facultative wet graminoids and virtually free (<1%) of undesirable species. Should species indicative of natural flatwood ponds not be present the sponsor would begin a reseeding program to increase species diversity.

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c. At least two prescribed burns should have occurred throughout the pine flatwood/savanna habitat and at least once along the margins of and into bayheads and/or flatwood ponds.

C. Long-Term Success Criteria (Year 5 and beyond)

1. Vegetative cover for high quality rehabilitated longleaf pine flatwood wetland savanna will fall within the following ranges:

Table 1

Vegetation Strata	Estimated Total Percent Cover
Longleaf pine overstory	10-50%
Total overstory (longleaf pine plus various hardwoods)	15-55%
Woody understory (shrubs/small trees)	<20%
Herbaceous groundcover	90-100%

2. Pine flatwoods/savanna vegetation composition should consist of a variety of indigenous species (Attachment MWP-D) with a predominance of longleaf pine in the overstory, and additional age classes of longleaf pine in the understory. Undesirable species will be maintained at a minimum level. General goals are:

Table 2

Vegetation Composition	Species/type Composition
Overstory (>10 ft. ht.)	70-90%* longleaf pine
Understory (2-10 ft. ht.)	>50%* longleaf pine; at least 4 species of indigenous-shrubs/hardwood trees in pine flatwood wetlands.
Herbaceous groundcover (<2 ft.)	50-90%* grasses/sedges; 10-50%* forbs; >10 native species/meter square; >50 herbaceous species/site; undesirable species <1%*

*percent of total cover of designated strata

Select one of the appropriate success criteria for habitat inclusions below:

3. Vegetative composition of bayhead swamps closely resembles that for undisturbed bayhead swamps. At least five overstory species should be represented in the bayhead swamp. Typical species for this habitat include

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Magnolia virginiana, Nyssa sylvatica, Taxodium ascendens, Pinus elliotii, Quercus laurifolia, Acer rubrum, Liquidambar styraciflua, and Lirodendron tulipifera.

OR

3. Vegetative composition of flatwood ponds dominated by obligate and facultative wet graminoids and virtually free (<1%) of undesirable species.

4. Prescribed burns throughout the pine flatwood/savanna habitat as well as along the margins of and into the bayhead swamps and/or flatwood ponds have occurred at a frequency of once every 2-3 years.
5. The Sponsor will provide documentation that the “Long-Term Maintenance and Protection” escrow account is fully funded.
6. The Bank and the perimeter will be virtually free (approximately 1% or less on an acre-by-acre basis) of exotic/invasive vegetation.

IX. Monitoring Requirements

The Sponsor agrees to perform all work necessary to monitor the Bank to demonstrate compliance with the success criteria established in this Mitigation Work Plan. The Sponsor will monitor the Bank in the fall of each monitoring year using the guidelines within this section of this Mitigation Work Plan.

Surveys of permanent monitoring stations will occur in the following time frame:

1. A baseline report, prior to beginning of site restoration, to be provided in conjunction with the work schedule as required in the MBI under “Requirements for initial Credit Release” (Section XI. F 1-7) to establish baseline information.
2. An “as-built report” providing documentation that vegetative plantings and the work necessary to restore site topography and wetland hydrology of the bank have been completed.
3. An initial success criteria report documenting successful completion of the work as specified in section VI. of this MWP (Description of Work) and in conjunction with initial success criteria as stated in this MWP Section VIII. A. This report will be provided the first fall of 1 year after planting.
4. An interim success criteria report (3-4 years after successfully meeting the initial success criteria as stated in this MWP VIII.B.).

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5. Long-term success criteria report (5 years after meeting the interim success criteria or when the long-term success criteria have been met, and every fifth year thereafter).

If monitoring for any given year determines that the Bank is not progressing as expected, monitoring will continue on an annual basis until the Bank successfully meets or exceeds established milestones. After achieving the initial success criteria, monitoring will occur as stated above.

Surveys will include a summary and map of where, when and percent coverage of burns that have occurred since the previous monitoring report. Data collected for initial, interim and long-term monitoring will be the same as for baseline conditions using the same sample plots.

The survey of the permanent monitoring stations will collect data to evaluate the survival and growth rates of planted vegetation. In addition to planted seedlings, surveys will include the number by species of volunteering trees, shrubs and woody vines. Surveys will also collect information regarding colonizing plant species, the wetland plant status (scaled from obligate (OBL) to upland (UPL)) of each, and the number of undesirable species.

6. Beyond Long-term success the number of monitoring plots can be reduced to half the number, and surveys will include a summary and map of where, when and percent coverage of burns have occurred since the previous monitoring report. Data will be collected to evaluate the survival and presence of appropriate vegetation, and a map will be submitted with the data to show the location of the monitoring plots as well as burn history of those particular plots, photos of those plots (as well as general photos of the overall bank), and overall description of what is taking place with the plots and the bank. Other information may be requested by the IRT if necessary.

A. Management Units

Prior to any restoration work on the site of the Bank, the Sponsor will establish management units by dividing the site to account for habitat types present and areas with management histories that are significantly different from each other, or divided as necessary for logistical management of the site. A map and discussion shall be provided defining/labeling these divisions and providing supportive information for the establishment patterns of such units.

B. Permanent circular monitoring plots

The Sponsor shall establish plots randomly located across each management unit in a manner to insure that they capture the variation in habitat conditions across each unit. Plot locations will be permanently marked with fire-resistant materials (e.g., rebar or aluminum conduit poles). GPS coordinates shall be recorded for each plot and plot locations shall be depicted on maps and drawings submitted.

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Two types of permanent monitoring plots or stations will be established, one type for general vegetation structure and composition monitoring and one type for tree survival and growth monitoring.

1. General Vegetation Plots

- A. A minimum of 1 set of permanent circular nested vegetation structure and composition monitoring plots (plots with a common center point, 10.75 sq. feet and 1/40th acre) per 20 acres will be randomly located in each management unit as described above at IX.A.
- B. Also, one set of plots per 20 acres of habitat inclusions such as bayhead swamp or flatwood pond areas will be sampled, if present.
- C. At least one set of sampling plots shall be placed in non-jurisdictional buffer areas to gauge progress in those areas where present.
- D. Plot size and data to be collected from plots for vegetative structure and composition monitoring are listed below. Additional plant species noted outside sample plots will also be reported to obtain a total species list for the site. This information will be provided in tabular form. Cover will be determined from sample plots as shown in the table 3 below.

2. Tree Survival and Growth Monitoring Plots

Tree Survival Monitoring Plots will be established according to the following methodology.

- A. One permanent circular (1/4th acre plots (1000 sq. meters)) plot per 20 acres will be randomly established in each management unit to monitor longleaf seedling survival and growth.
- B. The survey of the permanent monitoring stations will collect data to evaluate the survival and growth rate of planted longleaf seedlings. Growth rate will either be gauged by measuring stem diameter at ground level, or increase in height from ground to bud tip, for each seedling present in plots.

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Table 3

Plot size	Strata	Data Collected
10.75 sq. feet (1 M²)	Groundcover (herbaceous) and woody plants <2 feet	<ol style="list-style-type: none"> 1. Species present 2. Cover by species 3. Total cover (undesirable species) 4. Total cover (all species) 5. Total cover (all species minus undesirable species) 6. Percent cover grasses/sedges (excluding undesirable species) 7. Percent cover forbs (excluding undesirable species)
1/40th of an acre (1089 sq. feet)	Understory (woody plants 2-10 feet tall)	<ol style="list-style-type: none"> 1. Species present 2. Cover by species 3. Total cover all species 4. Total cover undesirable species
1/40th of an acre (1089 sq. feet)	Overstory (>10 ft.)	<ol style="list-style-type: none"> 1. Species present 2. Cover by species 3. Total cover all species 4. Total cover undesirable species
1/40th of an acre (1089 sq. feet)	Groundcover (<2ft)	Additional species not found in 10.75 sq. feet (1 M²)plots

C. Wetland Delineation

At year 5, the Sponsor will be required to submit a wetland delineation to demonstrate that the Property meets the wetland criterion as described in the 1987 Manual as well as the Regional Supplement of the Corps of Engineers Wetland Delineation manual Atlantic and Gulf Coastal Plain Region Version 2.0.

To submit the information for a wetland delineation the Sponsor will collect necessary data for the Bank and provide it to CEMVN project manager for review and verification.

D. Floristic Survey

To document the attainment of the long-term success criteria the Sponsor will complete a comprehensive floristic survey for the Bank as part of the monitoring requirements.

E. Photographs

Digital images shall be taken from ground level at each monitoring station and from elevated positions throughout the Bank to document overall conditions. These ground level images should provide a North, South, East and West image for each station.

F. Qualitative Analysis

The Sponsor shall evaluate the entire extent of the Bank (or phase of the Bank that this report represents) and provided observations concerning overall seeding survivorship, colonization of the Bank by volunteer plant species, wildlife utilization and any other information that is pertinent to achievement of initial success criteria.

G. Hydrologic Conditions

A description of the condition of any applicable hydrology altering features (culverts, ditches, plugs, etc.) and a general discussion of hydrologic conditions at monitoring stations.

H. Ledgers

The Sponsor will utilize the Regulatory In-Lieu Fee and Bank Information Tracking System (RIBITS) as a ledger to show all transactions. The Sponsor will input the following information: transaction date, permittee name, credits/acres sold and DA

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permit number, and CUP number (if applicable). No other reporting measures are required.

X. Monitoring Reports

Independent of the as-built report the Sponsor will submit monitoring reports documenting monitoring efforts at the Bank to the CEMVN by fall/winter of the year in which monitoring occurs. Besides monitoring results for that monitoring year, reports will include a financial assurance report documenting withdrawals and deposits. The monitoring reports will follow the guidelines listed below:

The monitoring report will include data sufficient for comparison to the performance standards found in Section VIII. of this Work Plan. The Sponsor shall also include, in these reports, a discussion of all activities which took place at the Bank.

A. Base Line Data Report

In order to demonstrate site rehabilitation through management, the Sponsor will perform a Floristic Survey using an acknowledged scientific methodology and collect vegetative monitoring data (See Section IX.B.) from the permanent plots prior to performing any site management. This baseline data will be collected at each sample plot. For habitat inclusions such as bayhead swamp or flatwood pond areas, the sponsor will identify species composition of the various vegetative strata and provide a percentage of the total for each species. In addition, the sponsor will provide a report detailing the hydrologic disturbances that need attention and provide a work plan identifying work necessary to accomplish hydrologic restoration.

B. As-Built Report

An as-built report will be submitted to CEMVN within 60 days following completion of all work required to restore or enhance special aquatic sites. The as-built report will describe in detail the work performed and provide a list of species planted, the number of each species, and the wetland rating. No deviation from the Mitigation Work Plan may occur without prior approval from the IRT. The as-built report will include a discussion of the coordination with IRT members, a description of and reasons for any approved deviation. The as-built report shall provide:

- a. A survey showing finished grades and plantings with written documentation, plan view and cross sectional drawings of all construction and establishment work implemented on the bank.
- b. Survey data collected from the permanent monitoring stations and the transects. This survey data should include the number of species planted, timing of all work events, and maps showing the location (including latitude/longitude) of all monitoring stations as described in this Work Plan.

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c. Detailed descriptions of site preparation, planting procedures, etc.

C. Fire Management Reporting

For burn events, the following information will be reported in the as-built, initial, interim and long-term monitoring reports: dates of burn, percentage coverage burn by unit, and a map showing the location of the area burned. This information will also be provided on any reports subsequent to the long-term monitoring report.

D. Initial Success Criteria Report

The Sponsor shall submit the following at the end of the first year after planting.

The Sponsor shall provide details in accordance with Section VIII.A. Of this Mitigation Work Plan, on any maintenance/management work conducted on the Bank after submission of the As-Built Report. The Sponsor shall provide a brief description of any anticipated maintenance/management work to be conducted prior to attainment of interim success criteria.

1. Vegetation

a. Permanent Monitoring Plot Data

The Sponsor shall provide plot data summarized in tabular form for general vegetation monitoring plots and seedlings survival/growth monitoring plots as described and as established in accordance with Section IX. B. of this Mitigation Work Plan.

A description of the general condition of the seedlings, including the number and species of surviving seedlings in each monitoring plot, and a discussion of likely causes of mortality for the non-survivors, and a description of the generalized degree and distribution of exotic/invasive species will also be provided. This vegetative monitoring data will be compared to baseline data to demonstrate rehabilitation and/or maintenance of the pine flatwoods/savanna and related habitats.

2. Hydrologic Data

The Sponsor shall provide a description of the condition of any applicable hydrology altering features (culverts, ditches, plugs, etc.), a general discussion of hydrologic conditions at monitoring stations and date(s) of activities documentation (fire and road side berm restoration which will be returned to natural grade) demonstrating unimpeded sheet flow.

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3. Photographs

The Sponsor must submit digital photographs in accordance with section IX.E. of this Mitigation Work Plan.

4. Qualitative Analysis

The Sponsor must provide a qualitative analysis of the site as described in IX.F. of this Mitigation Work Plan.

5. Fire Management Report

A summary Fire Management Report will be provided with the Initial Success Criteria Report in accordance with specifications given in Section X.C.

6. Funding

The Sponsor shall provide CEMVN with copies of the most recent financial account statements for both the financial assurance accounts and the Long-term Maintenance and Protection Fund. If any escrowed funds were used, the Sponsor will include a narrative describing that use, the justification for that use and supporting documentation (e.g. receipts). The Sponsor shall also provide any justification for any requested release from financial assurance accounts.

Should this report indicate that the initial success criteria were not attained; the report will include an Adaptive Management Plan (see Section XII.) that indicates the problems(s) and a plan of action on solving the problems.

E. Interim Success Criteria Report

The Sponsor shall monitor the Bank seedling survival/growth monitoring plots for a minimum of three consecutive years after initial success criteria have been achieved and will monitor the general vegetation plots on the third year after initial success criteria have been achieved. The sponsor will provide a summary report that documents the attainment of the interim success criteria as described in Section VIII.B.

1. Vegetation

Vegetation monitoring data (see Section IX.B.) will be provided. In addition, documentation will be provided on the percentage of seedling survival and increase in growth of planted seedlings. This vegetative monitoring data will be compared to the initial success criteria report to demonstrate rehabilitation and/or maintenance of the pine flatwoods/savanna and related habitats.

a. Permanent Monitoring Plot Data

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The Sponsor shall provide plot data summarized in tabular form for general vegetation monitoring plots and seedlings survival/growth monitoring plots as described and as established in accordance with Section IX.B of this Mitigation Work Plan. Documentation will be provided that shows seedling growth has occurred for 3 consecutive years for the minimum number of seedlings per acres as specified in Section VIII.B.2. above A description of the general condition of the longleaf seedlings, including the number and species of surviving seedlings in each monitoring station, the tag number (if appropriate) and a discussion of likely causes of mortality for the non-survivors will be provided. In addition, a description of the generalized degree and distribution of undesirable species and whether they are seed bearing trees or seedlings will also be provided.

2. Hydrologic Data

By Year 3, two years following attainment of the one-year survivorship criteria, the Sponsor **must provide a Corps issued wetland determination**. The Sponsor shall submit a wetland delineation report and a request for a jurisdictional determination to CEMVN as described in the 1987 Manual as well as the November 2010 Regional Supplement to the Corps of Engineers wetland Delineation Manual: Atlantic and Gulf Coastal Plain Region Version 2. Hydrologic restoration information will also include photographic documentation (fire break and road side berm restoration) demonstrating unimpeded sheet flow.

3. Photographs

The Sponsor must submit digital photographs in accordance with section IX.E. of this Mitigation Work Plan.

4. Qualitative Analysis

The Sponsor must provide a qualitative analysis of the site as described in IX.F. of this Mitigation Work Plan. The Sponsor shall provide details on any maintenance/management work conduction on the Bank after submission of the Initial Success Criteria Report. The Sponsor shall provide a brief description of any anticipated maintenance/management work to be conducted prior to attainment of long-term success criteria. Note: By year 5, four years following successful attainment of the one-year survivorship criteria, the developing community must exhibit characteristics and diversity indicative of a viable native pine flatwoods/savanna wetland community commensurate with stand age and site conditions; the Bank and the perimeter will be virtually free (approximately 5% or less on an acre-by-acre basis) of exotic/invasive vegetation.

5. Fire Management Reports

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A summary Fire Management Reports will be provided with the Interim Success Criteria Report in accordance with the specifications given in Section X.C.

6. Funding

The Sponsor shall provide CEMVN with copies of the most recent financial account statements for both the financial assurance accounts and the Long-term Maintenance and Protection Fund. If any escrowed funds were used, the Sponsor will include a narrative describing that use, the justification for that use and supporting documentation (e.g. receipts). The Sponsor shall also provide any justification for any requested release from financial assurance accounts.

F. Long Term Success Criteria Report

The Sponsor shall monitor the Bank five years following attainment of the interim success criteria for the Bank, and every five years thereafter. This long term success criteria report will document the attainment of the long term success criteria as described in Section VIII.C. Should information in any of these reports indicate that the long-term success criteria are not attained, an Adaptive Management Plan (see Section XII.) should be submitted to CEMVN. This plan should identify and describe the problem(s) and provide a plan of action on solving these problems.

1. Vegetation

The vegetative monitoring data will be compared to the interim success criteria report to demonstrate rehabilitation and/or maintenance of the pine flatwoods/savanna and related habitats.

a. Permanent Circular Plot Data

The Sponsor shall provide plot data in tabular form for each permanent circular monitoring plot as described and as established in accordance with Section IX.B of this Mitigation Work Plan. A description of the generalized degree and distribution of exotic/invasive species and whether they are seed bearing trees or seedlings will also be provided.

2. Hydrologic Data

The Sponsor must provide documentation to verify that the restored hydrology of the site as achieved in the Interim Success Criteria is still in place.

3. Photographs

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The Sponsor must submit digital photographs in accordance with section IX.E. of this Mitigation Work Plan.

4. Qualitative Analysis

The Sponsor must provide a qualitative analysis of the site as described in IX.F. of this Mitigation Work Plan. The Sponsor shall provide details on any maintenance/management work conducted on the Bank after submission of the Interim Success Criteria Report.

5. Fire Management Reports

Fire Management Reports will be provided for each burn event (see Section X.C.)

6. Funding

The Sponsor shall provide CEMVN with copies of the most recent financial account statements for both the financial assurance accounts and the Long-term Maintenance and Protection Fund. If any escrowed funds were used, the Sponsor will include a narrative describing that use, the justification for that use and supporting documentation (e.g. receipts). The Sponsor shall also provide any justification for any requested release from financial assurance accounts.

G. Beyond Long-term Success Criteria Report

The Sponsor shall monitor the Bank five years following attainment of the long-term success criteria for the Bank, and every five years thereafter. This long-term success criteria report will document the maintenance of the long term success criteria as described in Section VIII.C. Should information in any of these reports indicate that the long-term success criteria is no longer met, an Adaptive Management Plan (see Section XII.) should be submitted to CEMVN. This plan should identify and describe the problem(s) and provide a plan of action on solving these problems.

1. Vegetation

The vegetative monitoring data will be compared to the long-term success criteria report to demonstrate rehabilitation and/or maintenance of the pine flatwoods/savanna and related habitats.

a. Permanent Circular Plot Data

The Sponsor shall provide plot data in tabular form for half of the number of permanent circular monitoring plots as described and as established in accordance with Section IX.B of this Mitigation Work Plan. A description of the generalized degree and

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distribution of exotic/invasive species and whether they are seed bearing trees or seedlings will also be provided.

2. Hydrologic Data

The Sponsor must provide documentation to verify that the restored hydrology of the site as achieved and shown for Long-term Success Criteria is still in place.

3. Photographs

The Sponsor must submit digital photographs in accordance with section IX.E. of this Mitigation Work Plan.

4. Qualitative Analysis

The Sponsor must provide a qualitative analysis of the site as described in IX.F. of this Mitigation Work Plan. The Sponsor shall provide details on any maintenance/management work conducted on the Bank after submission of the Interim Success Criteria Report.

5. Fire Management Reports

Fire Management Reports will be provided for each burn event (see Section X.C.)

6. Funding

The Sponsor shall provide CEMVN with copies of the most recent financial account statements for both the financial assurance accounts and the Long-term Maintenance and Protection Fund. If any escrowed funds were used, the Sponsor will include a narrative describing that use, the justification for that use and supporting documentation (e.g. receipts). The Sponsor shall also provide any justification for any requested release from financial assurance accounts

XI. Bank Credits

A. Bank Service Area

The Bank is established to provide compensation for impacts to **[HABITAT TYPE]**, in U.S.G.S. Hydrologic Cataloging Unit **[8-DIGIT HUC]** of **[BASIN NAME]** drainage basin. The primary service area would be the Louisiana Basin in which the bank is located which is **[BASIN NAME]**.

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B. Credit Determination

Refer to Attachment MWP-C

C. Schedule of Credit Availability

Upon submittal of all appropriate documentation by the Sponsor, and subsequent approval by CEMVN in consultation with the IRT, CEMVN will release credits for use by the Sponsor according to the following schedule:

1. Thirty percent (**30%**) of total anticipated project credits will be available for debiting upon confirmation that all items in Section XI. F (1-7) of the MBI have been completed.
2. An additional twenty percent (20%) of the total anticipated credits will be available for debiting upon providing documentation that the vegetative plantings and of the work necessary to restore site topography and wetland hydrology of the Bank have been completed, as outlined in Section VI. of this Work Plan
3. An additional twenty percent (**20%**) of total anticipated credits will be available for debiting upon successfully completing the Initial Success Criteria as described in Section VIII.A.
- 4 An additional twenty percent (**20%**) of the total anticipated credits would be released upon successfully completing the Interim Success Criteria in Section VIII.B.
5. An additional twenty percent (**10%**) of the total anticipated credits would be released upon successfully completing the Long-Term Success Criteria in Section VIII.C. are met

Table 4: Potential Credit Release Schedule for XXXXX Mitigation Bank:

Release	Action	Percentage	Credits	Comments
1	All items in Section IX F. 1-7 of the BI	30%		
2	Documentation of vegetative plantings and completion of work necessary to restore site topography and wetland hydrology as outlined in this Mitigation Work Plan; documentation of baseline conditions and establishment of	20%		

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	monitoring requirements (Section IX).			
3	Successful completion of Initial Success Criteria (minimum one year after completion of construction) as outlined in this Mitigation Work Plan.	20%		
4	Successful completion of Interim Success Criteria (by year 5 which is 4 years following successful attainment of one-year survivorship criteria) as outlined in this Mitigation Work Plan.	20%		
5	Successful attainment of Long-term Success Criteria (Year 5 or beyond) as outlined in this Mitigation Work Plan.	10%		

XII. Adaptive management plan

[Describe the management strategy to address unforeseen changes in site conditions or other components of the compensatory mitigation project. Include the party or parties responsible for implementation of adaptive management measures. The adaptive management plan will guide decisions for revising compensatory Mitigation Work Plans and the implementation of measures to address both foreseeable and unforeseeable circumstances that adversely affect compensatory mitigation success. (See § 332.7(c).)]

XIII. Long Term Protection and Maintenance

To ensure long-term sustainability of the resource, the Sponsor shall burden the property with a perpetual conservation servitude as described in Section X of this MBI.

XIV. Funding

Section IX. A of this MBI provides specific details about the funding for the Construction and Establishment (C & E) Activities for the Bank.

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A. Construction and Establishment (C&E) Funds

1. Estimate of C & E Funds Required [Describe in detail the method of assessing initial construction costs and ongoing management/establishment funds required for a third party to manage and monitor the lands through the first 15 years for forested systems, the first five years for pine savannas, the first seven years for coastal prairie, and the first five years for marsh systems. Include this information (itemization sheets) as an attachment (Attachment B) to this Mitigation Work Plan document.

2. C&E Funding Mechanism

To fund this account the Sponsor proposes to establish (performance bonds, escrow accounts, letters of credit, legislative appropriations for government sponsored projects, or other appropriate instruments, subject to the approval of CEMVN).

3. C & E Release Schedule

The Financial assurances, with initial balance equaling [\$XXXX.XX], shall be reduced as success criteria are achieved and the probability decreases that those funds would be needed according to the following schedule:

1. Upon verification that all hydrologic modifications, construction, and planting as describe in this Mitigation Work Plan (Attachment C of the MBI) have been completed to the satisfaction of CEMVN, in consultation with the IRT, CEMVN shall advise the Sponsor and the financial institution that the C & E financial assurance may be reduced to \$[???].
2. Upon verification by CEMVN, in consultation with the IRT, that the initial success criteria have been attained for all tracts to the satisfaction of CEMVN, in consultation with the IRT, CEMVN shall advise the Sponsor and the financial institution that the C & E financial that assurance may be reduced to \$[???].
3. Upon verification by CEMVN, in consultation with the IRT, that the interim success criteria have been attained for all tracts to the satisfaction of CEMVN, in consultation with the IRT, CEMVN shall advise the Sponsor and the financial institution that the C&E financial assurance may be reduced to \$[???].
4. Upon verification by CEMVN, in consultation with the IRT, that the long-term success criteria have been attained for all tracts to the satisfaction of CEMVN, in consultation with the IRT, CEMVN shall notify the Sponsor and the financial institution that the remaining C&E financial assurance may be released to the Sponsor.

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(Sections 1- 4 above should be amended pursuant to the specifics of each mitigation work plan and should be based on the achievement of success criteria as well as the probability of future funds being required for maintenance and/or remedial work.)

B. Long Term Maintenance/Management Funds

1. Long-term Management Needs [DESCRIBE THE MAINTENANCE/MANAGEMENT FUNDS NEEDED FOR THE WORK AS DESCRIBED IN SECTION X. OF THIS MITIGATION WORK PLAN]

2. Annual Cost Estimates for Long-Term Needs

The cost of long-term management is \$ **XXXX** from year 16 to year 50. This amounts to \$ **XXXX** when adjusted for inflation every five years. Attachment B contains a description of the necessary work and an itemization of costs to perform the work for long term management and protection of the Bank.

3. Long-Term Maintenance and Protection Funding Mechanism

To ensure that sufficient funds are available to provide for the perpetual maintenance and protection of the Bank, the Sponsor is establishing the “Long-Term Maintenance and Protection” escrow account. This account will be administered by a federally-insured depository that is “well capitalized” or “adequately capitalized” as defined in Section 38 of the Federal Deposit Insurance Act. **CHOOSE THE APPROPRIATE FUNDING METHOD OF THE TWO LISTED BELOW AND INCLUDE ONLY THAT LANGUAGE:**

1. The account will be incrementally funded by deposit a minimum of \$ **XXXX.XX** into the account per credit /acre sold at the time of credit sale. The deposit value per credit/acre must reflect, at a minimum, the total fund value divided by no more than 90% of anticipated credits. OR

2. The account will be incrementally funded by deposit of a minimum of \$**XXXX.XX** annually on the date of the initial deposit for a period not to exceed 15 years.

Once the account is fully funded (**\$XXXX.XX**), no incremental fund per credit sale is required (if funding per credit/acre sale), or additional annual deposits (if funding annually). The account shall be fully funded by the time 70% of the total number of credits are sold or upon successful achievement of the Long-term Success Criteria, whichever occurs first. If the Long-term Success Criteria are met prior to fully funding the escrow account then the Sponsor must deposit into the escrow account the difference between the amount determined to be full funding and the account balance difference between the amount determined to be full funding and the account balance.

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Documentation that the account is fully funded is a pre-requisite for release of the remaining credits following attainment of the Long-term Success Criteria as identified in this Mitigation Work Plan. Accrued interest in excess of the value of the fully funded account may only be used for the administration, operation, maintenance and/or other purposes that directly benefit the Bank. The principal shall not be used and shall remain as part of the Bank's assets to ensure that sufficient funds are available should perpetual maintenance responsibilities be assumed by a third party. The Sponsor or Long-term Steward may withdraw the accumulated interest only with written approval from CEMVN and only to be used to maintain the Bank. The Sponsor shall provide copies of depository account statements to CEMVN upon request and in their monitoring reports.

XV. Other Information

A. Provisions of the MBI

This mitigation bank site must adhere to all provisions as outlined in the **[Name of Bank]** Mitigation Bank instrument as signed by the Corps of Engineers, New Orleans District on **[Month Day, and Year]** for the **[MITIGATION BANK NAME]** Mitigation Bank.

B. List of contacts for BI Section XVI. Other Provisions (H. Notice)

[Insert physical addresses & contact information of the Owner, Sponsor, Servitude Holder and IRT members here (including CEMVN). Please make sure to include the title of the individual as well as the company/organization with which they are associated.]

(The District Engineer may require additional information as necessary to determine the appropriateness, feasibility, and practicability of the compensatory mitigation project.)