



# MOBILE DISTRICT REGULATORY TRANSFORMATION WORKSHOP

FRIDAY  
JANUARY  
**16**  
8 AM - 4 PM

## Mitigation Requirements

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Mobile District Regulatory Division



U.S. Army  
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# Presentation Objectives

- Introduction To Compensatory Mitigation and the 2008 Mitigation Rule
- Compensatory Mitigation Hierarchy
- Functional Assessments
- How To Find Mitigation Bank Credits
- The Proximity Factor Tool
- Permittee Responsible Mitigation - Mitigation Plan Components



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# Mitigation & Compensatory Mitigation

## MITIGATION – PROJECT IMPACT EVALUATION PROCEDURE

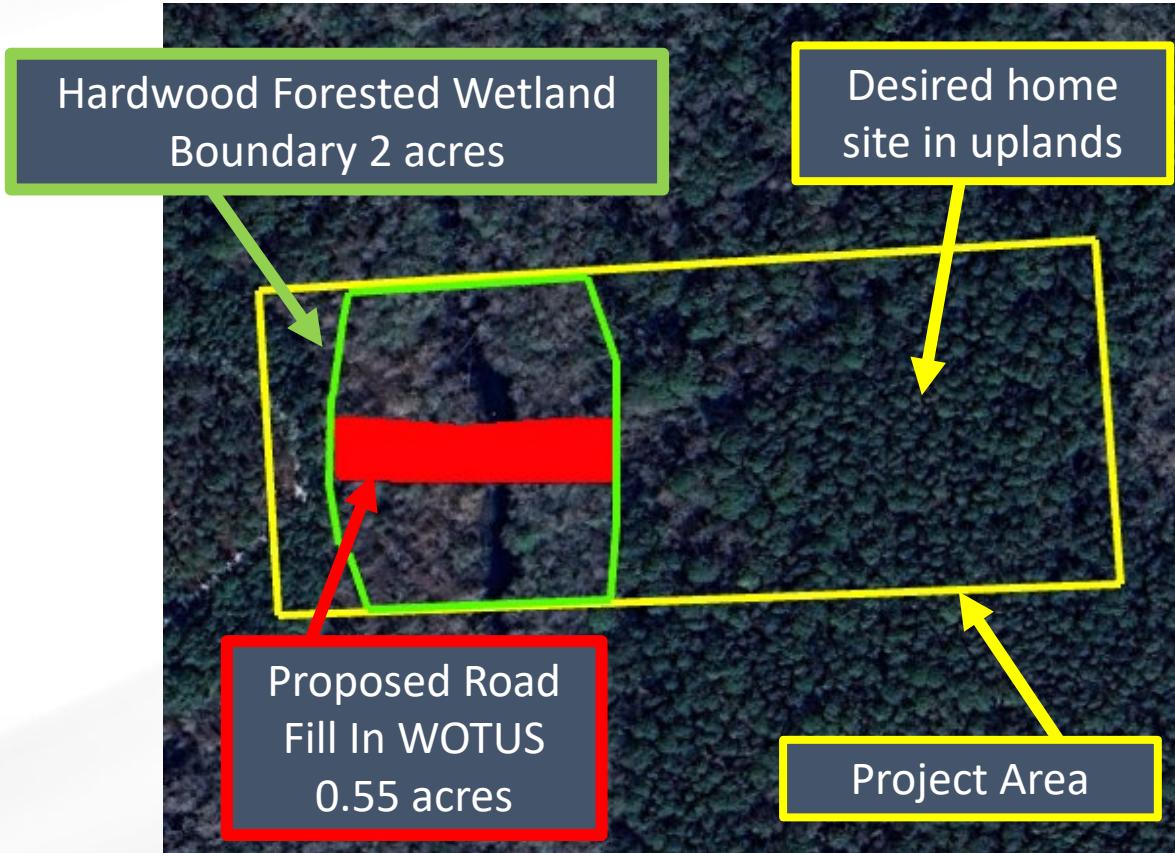


- Compensatory Mitigation – Environmental Restoration – replace lost functions/services.
- Defensible - must be related to magnitude and duration of project impacts.
- Mitigation is proposed by the applicant. Corps determines the adequacy of type and amount of compensatory mitigation proposed.
- Mitigation required to meet 404(b)(1) guidelines, compensatory mitigation required as a result of a public interest review (reduces the overall project impacts to less than significant).

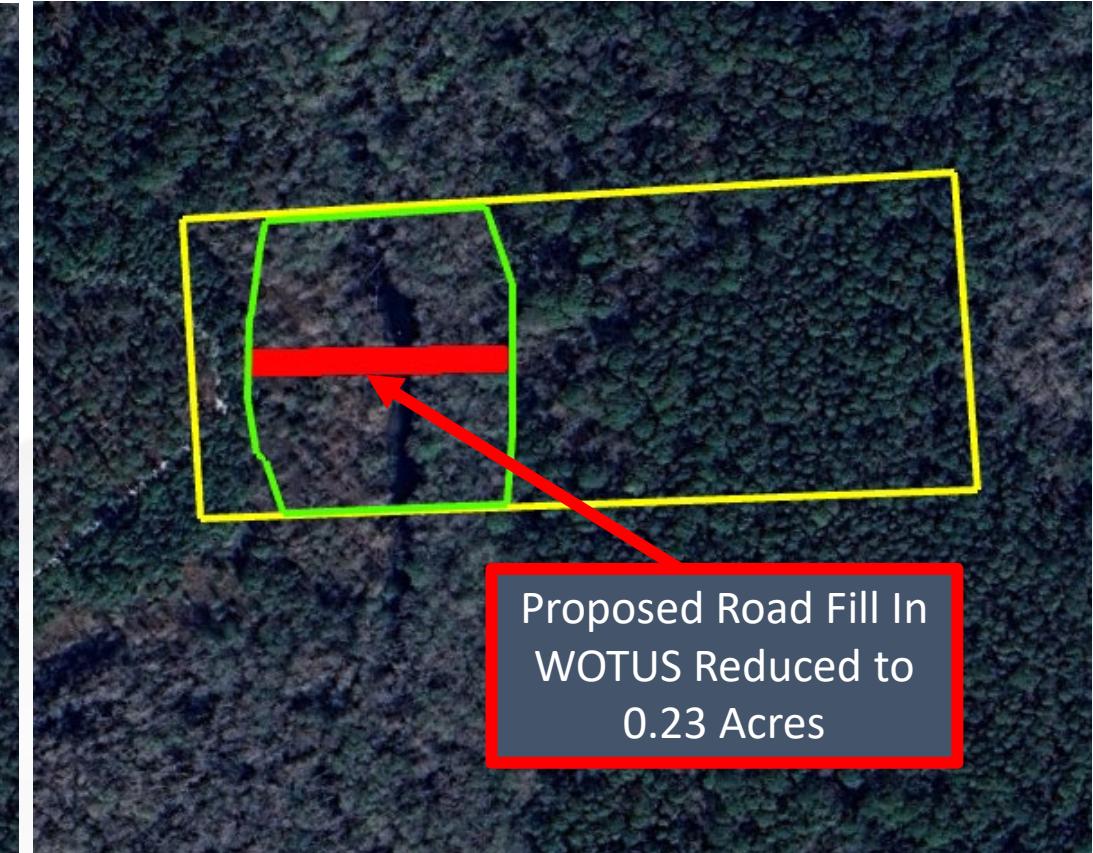




# Mitigation: Avoidance & Minimization



Avoid



Minimize



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# Compensatory Mitigation?

33 CFR 332.2 “Compensatory mitigation” means the restoration (re-establishment or rehabilitation), establishment (creation), enhancement, and/or in certain circumstances preservation of aquatic resources for the purposes of offsetting unavoidable adverse impacts which remain after all appropriate and practicable avoidance and minimization has been achieved.

The Corps said there are jurisdictional Waters of the U.S. (WOTUS) on my property, and I need a Department of the Army (DA) permit.

Do I also need mitigation to put a driveway through WOTUS to access my uplands and build a house...maybe...



Proposed Road Fill In  
WOTUS 0.55 acres

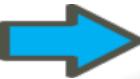


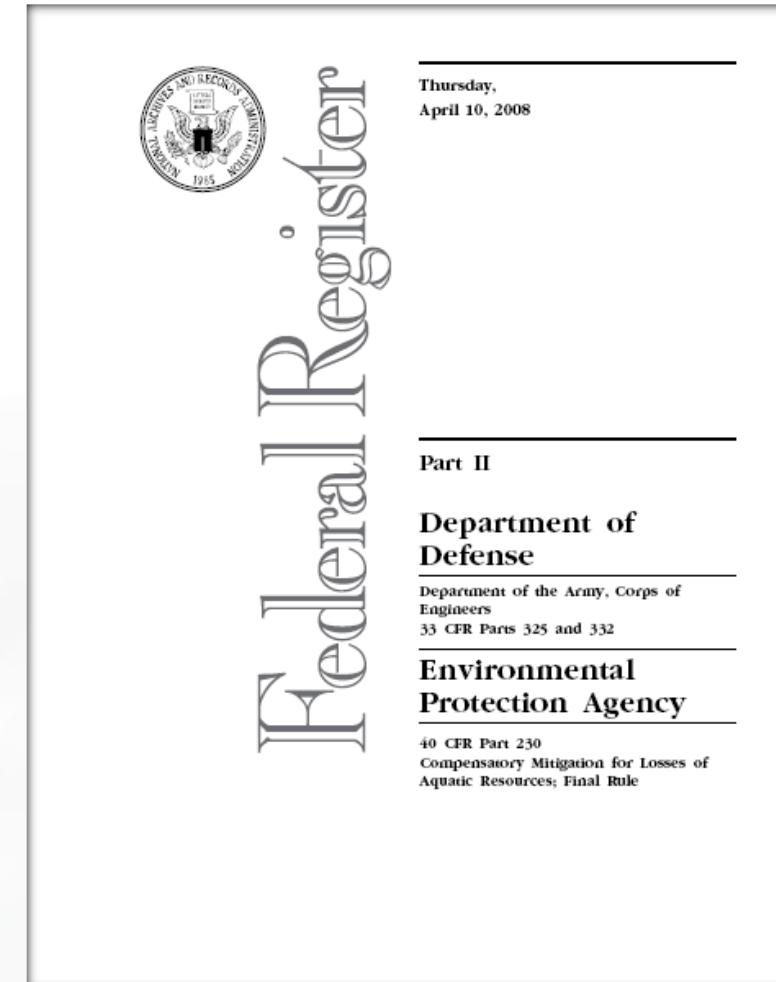
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# Introduction to Compensatory Mitigation

## 33 Code of Federal Regulations (CFR) 332 Table of Contents

- 332.1 Purpose and general considerations
- 332.2 Definitions
- 332.3 General compensatory mitigation requirements
- 332.4 Planning and documentation  **Mitigation plan components**
- 332.5 Ecological performance standards
- 332.6 Monitoring
- 332.7 Management
- 332.8 Mitigation banks and in-lieu fee (ILF) programs



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# What is the Environmentally Preferable Option?

The four types of compensatory mitigation are:

1. **Restoration** – divided into two categories:
  1. **Re-establishment** (gain in aquatic resource area and functions)
  2. **Rehabilitation** (gain in functions only)
2. **Enhancement** (gain in selected aquatic resource function/s, may cause decline in other functions)
3. **Establishment** (creation, gain in aquatic resource area and functions)
4. **Preservation** (no gain in aquatic resource area or functions)



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# Compensatory Mitigation Hierarchy

The Mitigation Rule establishes the following preferential hierarchy for the type and location of compensatory mitigation (mitigation hierarchy) in 33 CFR § 332.3(b).

- 1. Mitigation Bank Credits:** [33 CFR § 332.3 \(b\)\(2\)](#)
- 2. ILF Program Credits:** [33 CFR § 332.3 \(b\)\(3\)](#)
- 3. Permittee Responsible Mitigation (PRM) - Watershed Approach:**  
[33 CFR § 332.3 \(b\)\(4\)](#)
- 4. PRM On-Site and In-Kind:** [33 CFR § 332.3 \(b\)\(5\)](#)
- 5. PRM Off-Site and/or Out-of-Kind:** [33 CFR § 332.3 \(b\)\(6\)](#)





# Mitigation Option Differences

Third Party  
Mitigation

Mitigation Type	Responsible Party	When Mitigation Type Can Be Considered For Compensatory Mitigation	Are Credit Sales Allowed	Who Can Use As Mitigation	Instrument Required	Credit Releases	Service Area
Mitigation Bank	Mitigation Bank Sponsor as identified in the Mitigation Banking Instrument (MBI).	Credits must be available prior to impacts.	Yes	Permittees as approved by the permitting agency consistent with the provisions of the permit and MBI.	Yes	Yes	Yes
ILF	ILF Program Sponsor as identified in the ILF program instrument.	Credits must be available prior to impacts.	Yes	Permittees as approved by the permitting agency consistent with the provisions of the permit and the ILF program instrument.	Yes	Yes	Yes
PRM	Permittee	Mitigation effort must be implemented in advance (i.e., APRMS Project) or concurrently with impacts.	No	Permittee responsible for PRM site.	No	No	No



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# How to Find Mitigation Bank Credits?

## 0.18 Pine savannah credits needed to satisfy permit requirements

- 1) Regulatory In-Lieu Fee Bank Information Tracking System (RIBITS)  
<https://ribits.ops.usace.army.mil>
- 2) Select Mobile District From Dropdown Menu
- 3) Click “Find Credits” Under “Tools” header.

The screenshot shows the RIBITS homepage with a green frog in the top banner. The left sidebar has 'Mitigation' selected under 'TRACKING'. The 'Tools' section is expanded, showing 'Find Credits' as the first item. A red arrow points from the third step in the list to the 'Find Credits' link. The bottom of the sidebar shows a dropdown menu set to 'All USACE Districts'. To the right, four diamond-shaped icons represent different functions: 'Find Credits' (top), 'Search for Banks & Sites' (bottom-left), 'Search for ILF Programs' (bottom-right), and 'Export Data & Reports' (bottom).



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# How to Find Mitigation Bank Credits?

- 1) Enter coordinates of impact site in decimal degrees.
- 2) Check “Wetland and Stream” credits for Section 404 impacts to WOTUS.
- 3) For species credits to satisfy ESA/USFWS requirements, check “Species Credits.” Please note at this time there are no joint 404/Species banks in Mobile District.
- 4) Mobile District only has Primary service areas but recommend checking all three options.
- 5) Check option for ILF credit type desired.
- 6) Click Search!

**Search Criteria**  
Ctrl-click or Shift+Click the map in the desired location to set the latitude and longitude for your search.

**Linear Impact**   
Project No:   
• Latitude: 36   
• Longitude: -90   
 Yes [Include Results with Zero Available Credits?](#)

**Choose Criteria for Banks and Sites**  
Include Single Client Banks and Sites?  Yes (primarily governmental use)  
[Wetland and Stream Credits?](#)  Yes  
To filter by a specific credit classification, select one USACE district, state, FWS field office, NMFS region, or BLM state office from the main filter.

[Species Credits?](#)  Yes  
To filter by a specific credit classification, select one USACE district, state, FWS field office, NMFS region, or BLM state office from the main filter.

[NRDA Credits?](#)  Yes  
• Service Area Rank  Primary  
 Secondary  
 Tertiary

**Choose Criteria for ILF Programs**  
[ILF Program Credit Type](#)  Any  
 Species  
 Stream  
 Wetland





# Functional Assessment Methods

## How Many Mitigation Credits Do I Need?

### Determination of Credits 33 CFR 332.4(c)(6)

#### Perform a Functional Assessment

- Used to evaluate general physical, chemical, and biological processes that occur in ecosystems.
- Determines baseline score for existing conditions and post project/post mitigation score for restored conditions.
- Generates values (acres or functional credits) for functional gain (mitigation) and functional loss (impacts to WOTUS).
- The functional assessment method that is used for the impact site and mitigation site must be the same for an “apples to apples” comparison.



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# Mobile District Approved Functional Assessment Methods (*how many credits do I need*)

1. Ratio Method
2. Wetland Rapid Assessment Method (WRAP) for PFO forested bottomland hardwood wetlands
3. M-WRAP for PEM emergent Pine Savanna Wetlands
4. Stream Mitigation SOP for all stream work
5. Habitat Specific HGM Manuals for larger complex projects
  - (apples for apples)
  - Just for determining credits. These are not restoration success criteria.





# RIBITS: How to Find Mitigation Bank Information

- Provides available credit types
- Provides available credit amounts
- Identified current status (approved or suspended)
- Depicts date approved (Established Date)
- Lists the bank sponsor point of contact.
- Identifies the Corps PM.
- Provides the functional assessment method utilized at the bank in the Comments section.

Chair: USACE  
Instrument signed by: USACE  
USACE District: Mobile  
FWS Field Office: Daphne  
NMFS Region: Southeast  
BLM State Office: Eastern States  
BLM District Office: Southeastern States District Office  
State: Alabama  
County: Tuscaloosa [AL]  
USACE Permit/Tracking No.: SAM-2008-1176-MBM  
Total Acres: 1,060.00  
Status/Date: Approved 04/28/2009  
Establishment Date: 04/28/2009  
Type: Private Commercial  
On Public Lands: No  
On Tribal Lands: No  
Comments: Wetland and stream mitigation bank. Site is located in HUC 03160113. Use of Proximity Factor Method Required outside service area. Bank utilizes WRAP and 2005 Mobile District Stream SOP. WRAP credit = 3.71 ac, 1 Stream Credit = 0.29 If

## Bank Credit Classifications

### Wetland

- Bottomland Hardwood

### Stream

- Stream

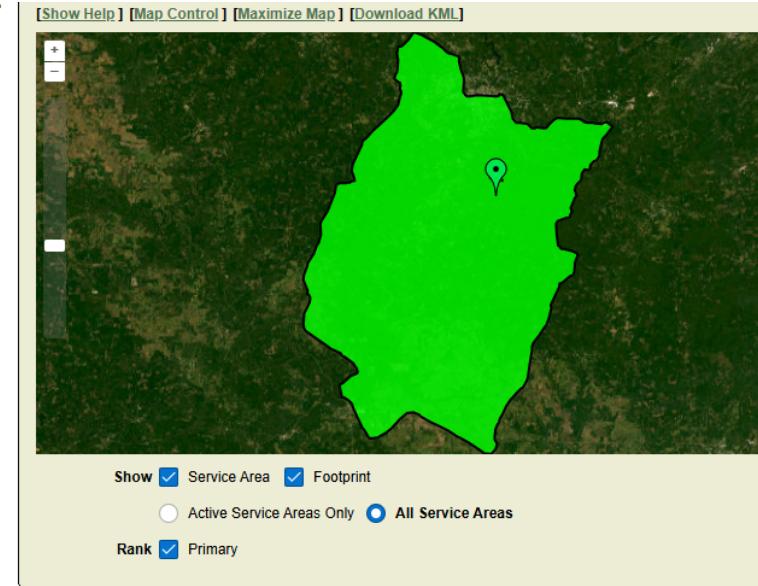
## Contact Information

### Bank Sponsor Organization

Westervelt Ecological Services, Southeast Region  
2128 Moores Mill Road  
Suite B  
Auburn, AL 36830  
Phone: (334) 821-1999  
Fax: (334) 821-1969

### Bank Sponsor POC

Casey Rigsby - Sales POC  
Sales POC  
Westervelt Ecological Services  
2128 Moores Mill Road, Suite B  
Auburn, AL 36830  
Email: crigsby@westervelt.com  
Phone: (334) 339-0010



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# Available Mitigation Bank Credits?

Does this mitigation bank have the 6.5 Bottomland Hardwood credits that I need...maybe?

## Credit Ledger Summary

— Last Transaction: Jul 18, 2025

**\*\*\*ATTENTION\*\*\***

Credit reservations and pending transactions are **NOT** reflected in the Available Credits total. Potential purchasers **MUST** contact the Sponsor to verify credit availability.

Credit Classification	Jurisdiction	Available Credits	Withdrawn Credits	Released Credits	Potential Credits	Percent Released
<b>Wetland</b>						
<a href="#">Bottomland Hardwood</a>	Federal	9.7156	77.8834	87.599	84.88	103.2%
<b>Stream</b>						
<a href="#">Stream</a>	Federal	10402.69	176075.93	186478.62	186478.621	100%

Please note that the available credits may not be accurate for a variety of reasons, and it is recommended to reach out to the Bank Sponsor or credit sales POC as the Corps does not track credits that may be reserved by the Sponsor for a particular project.



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# What if No Credits are Available in the Watershed?

## 2009 Mobile District Proximity Factor Tool (PFT):

Provides additional mitigation options within each state.

- PFT approved for use on April 12, 2009. In 2018 we issued PN with standardized acreages for each 8-digit HUC/watershed.
- Consistent method for determining amount of compensatory mitigation required when mitigation watershed is different than impact watershed
  1. outside approved MB and ILF Program service areas or
  2. outside impact 8-digit HUC watersheds for PRM
- Based on ratio multipliers for multiple variables.
  - Size of watersheds, number of 8-digit HUCs and 6-digit basins between the impact and compensatory mitigation sites.



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# When Does Mitigation Need to be Finalized?

- CFR 332.3(k)
- **Individual Permit Mitigation Requirements**
- Mitigation plan must be finalized and approved along with permit.
- If using a mitigation bank, the number/type of credits and specific bank need to be identified in conditions of the permit.
- **Nationwide Permit Mitigation Requirements**
- Permit must describe the compensatory mitigation proposal, which may be either conceptual or detailed. However, construction may not begin until mitigation plan is approved by the Corps.
- If using a mitigation bank, the number/type of credits and specific bank need to be identified in conditions of the permit.





# Mitigation Plan Components - 33 CFR 332.4(c)

1. Objectives
2. Site Selection
3. Site Protection Instrument
4. Baseline Information
5. Determination of Credits
6. Mitigation Work Plan
7. Maintenance Plan
8. Performance Standards
9. Monitoring Requirements
10. Long-Term Management Plan
11. Adaptive Management Plan
12. Financial Assurances





# Mitigation Plan Components

## Objectives 33 CFR 332.4(c)(2)

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

### Example:

- Restoration of XXX acres of Pine Savannah wetlands through removal of planted pine silviculture trees, leveling of bedded area, and return prescribed fire to the system to restore native endemic pine savannah species identified in the Mobile District Pine Savannah Habitat Success Criteria.



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# Mitigation Plan Components

## Site Selection 33 CFR 332.4(c)(3)

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

## Site Protection Instrument 33 CFR 332.4(c)(4)

A description of the legal arrangements and instrument, including site ownership, that will be used to ensure the long-term protection of the compensatory mitigation project site.

Conservation easements are primary form of site protection for mitigation banks, restrictive covenants for PRM projects.



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# Mitigation Plan Components

## Baseline Information 33 CFR 332.4(c)(5)

**“What is it now, what will it be, how will this occur?”**

- A description of the ecological characteristics of the proposed compensatory mitigation project site and, in the case of an application for a DA permit, the impact site. This may include descriptions of historic and existing plant communities, historic and existing hydrology, soil conditions, a map showing the locations of the impact and mitigation site(s) or the geographic coordinates for those site(s), and other site characteristics appropriate to the type of resource proposed as compensation.
- Mobile District Habitat Success Criteria should be the metrics measured. The baseline information should also include a delineation of the amount and type of wetlands and streams within the proposed compensatory mitigation project site.
- Please note that proposed re-establishment of hydrology or wetland establishment will require installation of monitoring wells and water table monitoring to establish the baseline hydroperiod to verify impacts to magnitude, duration, and frequency of hydrology.



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# Mitigation Plan Components

## **Determination of Credits 33 CFR 332.4(c)(6)** – Functional Assessment Method

- A description of the number of credits to be provided, including a brief explanation of the functional assessment method used.
- For PRM, this should include an explanation of how the compensatory mitigation project will provide the required compensation for unavoidable impacts to aquatic resources resulting from the permitted activity.
- For permittees intending to secure credits from an approved mitigation bank or in-lieu fee program, it should include the number and resource type of credits to be secured and how these were determined.



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# Mitigation Plan Components

## Mitigation Work Plan 33 CFR 332.4(c)(7)

“What is it now, what will it become, how will this change occur?”

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



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# Mitigation Plan Components



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# Mitigation Plan Components



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# Mitigation Plan Components

“What is it now, what will it become, how will this occur?”

## Performance Standards 33 CFR 332.4(c)(9)

- Ecologically-based standards that will be used to determine whether the compensatory mitigation project is achieving its objective.
- **33 CFR 332.5(a)** - Performance standards should relate to the objectives of the compensatory mitigation project, so that the project can be objectively evaluated to determine if it is developing into the desired resource type, providing the expected functions, and attaining any other applicable metrics.
- **33 CFR 332.5(b)** - Performance standards must be based on attributes that are objective and verifiable. Ecological performance standards must be based on the best available science that can be measured or assessed in a practicable manner...



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# Pine Savannah Performance Standards

Herb =  $1\text{m}^2$  plot: 1 point for each species below.

2m radius: 0.5 points for each additional species

Divide the mean herbaceous indicator score of each WAA by 8.0; for Cypress/Pine Savanna (if Cypress present) divide the mean indicator score by 7.0.

<i>Aletris spp.</i>	<i>Aristida spp.</i>	<i>Baldwinia spp.</i>	<i>Bigelowia nudata</i>	<i>Carphephorus<sup>1</sup> spp.</i>
<i>Chaptalia tomentosa</i>	<i>Coreopsis spp.</i>	<i>Ctenium aromaticum</i>	<i>Rhycospora<sup>2</sup> latifolia and colorata</i>	<i>Erigeron vernus</i>
<i>Eriogonion spp.</i>	<i>Eryngium intergrifolium</i>	<i>Eupatorium leucolepsis</i>	<i>Helianthus spp.</i>	<i>Lycopodiella<sup>3</sup> spp.</i>
<i>Muhlenbergia expansa</i>	<i>Rhexia spp.</i>	<i>Sarracenia spp.</i>	<i>Schizachyrium scoparium</i>	<i>Xyris spp.</i>

Please refer to "A Regional Guidebook for Applying the Hydrogeomorphic Approach to Assessing Wetland Functions of Wet Pine Flats on Mineral Soils in the Atlantic and Gulf Coastal Plains." ERDC/EL TR-02-9 for appropriate species. 1. Now genus Carphephorus and Trilisa. 2. Formerly genus Dichromena. 3. Formerly genus Lycopodium.

Nbg = Native Bunch Grasses - 2m radius: Combined % cover area of the following; *Ctenium aromaticum*, *Muhlenbergia expansa*, *Aristida spp.*, *Sporobolus spp.*, *Schizachyrium scoparium*. Divide cover by 0.50. Average scores by WAA

Sedges = 2m radius: Combined % cover area of the following; *Carex spp.*, *Scleria spp.*, *Rhynchospora spp.*. Divide by 0.50. Average scores by WAA

Cypress = Stems per hectare (2.47 acres). See alternative density calculation strategy below.\* Determine for density of pond cypress the following class sizes: (1) sapling >1m tall and less than 7.5 cm dbh (3 inches), x=density/250 (if the resulting score is >1.0, reduce to 1.0), (2) midcanopy > 1 m tall and 7.5-15 cm (3-6 inches) dbh, y=density/50 (if the resulting score is >1.0, reduce to 1.0), (3) canopy >15cm (6 inches) dbh, z=density/100 (if the resulting score is >1.0, reduce to 1.0). Cypress score =  $(x + y + z)/3$ . Average scores by WAA

Pines = 10m radius: Measure the basal area of all pine species > 1m high. Score  $\geq 0 \leq 6.25 \text{ sq.ft} = 1.0$ ,  $6.25-12.0 = 0.5$ ,  $\geq 12.0 = 0$  (Lewis and Teaford, 1995)

Subc = Subcanopy Vegetation - 10m radius: Count all stems at one meter in height even if they originate from same plant. If Subc < 200, then Subc = 1.0. If Subc is 201-300, then Subc = 0.5. If Subc > 300, then Subc = 0 (Modified HGM)

Exotics = 100m radius: Estimate % aerial coverage of all invasive species (i.e. *Sapium sebiferum*, *Panicum repens*, *Imperata cylindrica*, etc.) If Exotics < 1% then Exotics = 1.0, If >1% then Exotics =  $(1.0 - (\% \text{ coverage})/10)$ .

$$FCI_{\text{plant}} = (Groundcover + Subcanopy + Pines) \div 3$$

Where:

$$\text{Groundcover} = \text{Exotics} \times \left[ \text{MAX} \left( \text{Herb}, \text{Nbg}, \sqrt{\left( \text{Cypress} \times \left( \text{Sedges} + \text{Subc} \right) / 2 \right)} \right) \right]$$



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# Bottomland Hardwood Performance Standards

## Bottomland Hardwood Success Criteria – 10 year

### 1. Site preparation

- Removal of exotics/invasives, and/or inappropriate or competing species\*
- Elimination of impediments to desired hydrology\* (removal of roads or berms, filling of ditches, ruts, etc.).
- Establishment/acceptance of Target Forest Type (TFT) (modified from White et al. 1990)

### 2. Development of hydrology\*\* (continuation of site preparation)

- Construction of final earthworks (establishment of micro-topography)
- Installation of monitoring wells/piezometers/flood gages

### 3. Tree planting

- Should be initiated after desired hydrology has been attained\*, i.e. – after annual flooding regime has been observed (species placement should be based upon micro-topographical and edaphic habitat preference) (Bledsoe & Shear 2000)
- Tree species will be planted to achieve overall target composition of 10-15 species per acre (Clewell pers. comm.) from Table 1, with no greater than 25% coverage of a single species.
- Planted to achieve a coverage of 200-300 stems/acre at 10 years, trending towards 85% canopy coverage, and a basal area of 250-325 ft<sup>2</sup>/acre at maturity (Allen et al. 2001)

### 4. Introduction of shrub and herbaceous layer (if not naturally recruited)

- Should be initiated a minimum of three years after successful establishment of target tree species (Allen et al. 2001), if natural recruitment is not sufficient
- Shrubs must be from Table 2, a minimum of three species, with target cover 20-60%
- Herbaceous layer: ≥ 50% of species present are from Table 3, with appropriate coverage<sup>§</sup> as compared to TFT. If necessary, plantings will be made if colonization has not occurred.

<sup>§</sup> Typical herbaceous coverage in mature BLH may range from 5% (Ezell pers. comm.) to near 100% in situations with high seasonal variability (Allen et al. 2001). Thus, target coverage of herbs needs to be determined according to TFT prior to project initiation and goals to attain this target value need to be established at the time of TFT submittal.

### Monitoring:

Monitoring plots must include set fixed plots that are continually monitored to show site succession, and an equal number of randomly placed plots to capture site variability. Random plots must be individually generated for each monitoring event. There shall be a minimum of 1 set and 1 random plot within every 75 acres of contiguous habitat within each polygon. Due to the limited number of required monitoring plots, each plots is required to independently demonstrate achieving required success criteria metrics.

- Hydrology\*\*: well/gage reports, evidence of sediment deposits, drift lines, high water marks.
- Vegetation: target tree, midstory, and groundcover composition, density, and diversity. Positive growth in target tree species trunk diameter and overall height, canopy cover, and basal area.
- Exotics\*: <1% cover at all times (no seed bearing plants at any time)

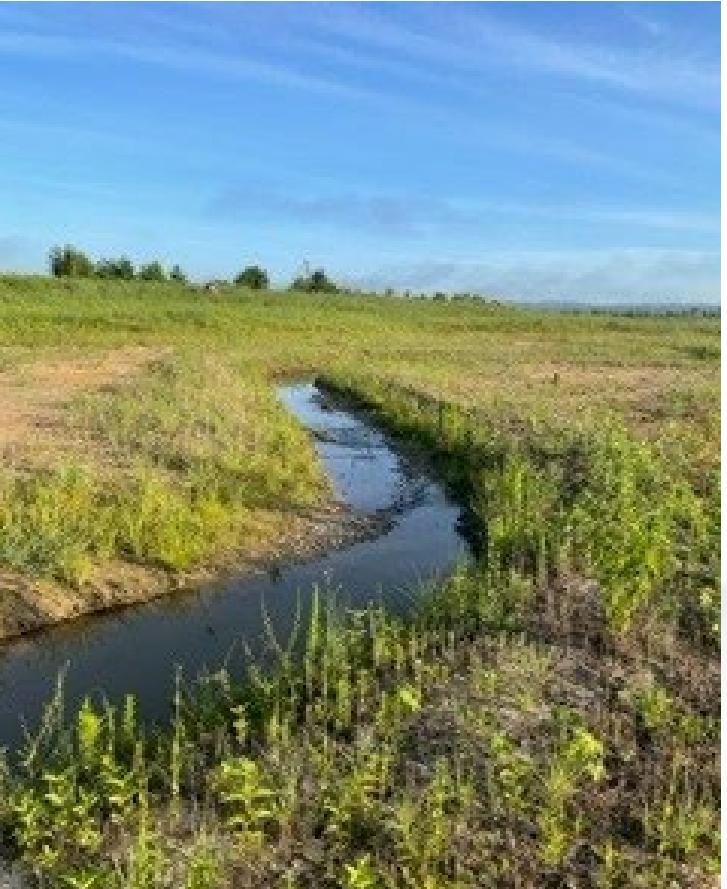
\*\* Hydrologic manipulations and monitoring may not be applicable on all sites. For mitigation banks and ILF projects, the IRT will determine the necessity and feasibility of such endeavors



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# Stream Mitigation



Parameter	Existing Stream			Design Stream			Reference Stream		
	Min	Median	Max	Min	Median	Max	Min	Median	Max
Stream name									
Stream type									
Drainage area, DA (sq mi)									
Mean riffle depth, $d_{riffle}$ (ft)									
Riffle width, $W_{riffle}$ (ft)									
Width-to-depth ratio, $[W_{riffle}/d_{riffle}]$									
Riffle cross-section area, $A_{riffle}$ (sq ft)									
Max riffle depth, $d_{max}$ (ft)									
Max riffle depth ratio, $[d_{max}/d_{riffle}]$									
Mean pool depth, $d_{pool}$ (ft)									
Mean pool depth ratio, $[d_{pool}/d_{riffle}]$									
Pool width, $W_{pool}$ (ft)									
Pool width ratio, $[W_{pool}/W_{riffle}]$									
Pool cross-section area, $A_{pool}$ (sq ft)									
Pool area ratio, $[A_{pool}/A_{riffle}]$									
Max pool depth, $d_{max}$ (ft)									
Max pool depth ratio, $[d_{max}/d_{riffle}]$									
Low bank height, LBH (ft)									
Low bank height ratio, $[LBH/d_{riffle}]$									
Width flood-prone area, $W_{flood}$ (ft)									
Entrainment ratio, ER [ $W_{flood}/W_{riffle}$ ]									
Bankfull discharge, $Q_{bank}$ (cfs)									
Meander length, $L_m$ (ft)									
Meander length ratio [ $L_m/W_{riffle}$ ]									
Radius of curvature, $R_c$ (ft)									
Radius of curvature ratio [ $R_c/W_{riffle}$ ]									
Belt width, $W_{belt}$ (ft)									
Meander width ratio [ $W_{belt}/W_{riffle}$ ]									
Pool length, $L_p$ (ft)									
Pool length ratio [ $L_p/W_{riffle}$ ]									
Pool-to-pool spacing, p-p (ft)									
Pool-to-pool spacing ratio, $[p-p/W_{riffle}]$									
Stream length, SL (ft)									
Valley length, VL (ft)									
Valley slope, VS (ft/ft)									
Average water surface slope, $S$ (ft/ft)									
Simosity, $k = SL/VL$ (ft/ft)									
Riffle slope, $S_{riffle}$ (ft/ft)									
Riffle slope ratio, $[S_{riffle}/S]$									
Run slope, $S_{run}$ (ft/ft)									
Run slope ratio, $[S_{run}/S]$									
Pool slope, $S_p$ (ft/ft)									
Pool slope ratio, $[S_p/S]$									
Glide slope, $S_g$ (ft/ft)									
Glide slope ratio, $[S_g/S]$									
Riffle length, $L_{riffle}$ (ft)									
Riffle length ratio, $[L_{riffle}/W_{riffle}]$									



# Mitigation Plan Components

## **Monitoring Requirements 33 CFR 332.4(c)(10)**

A description of parameters to be monitored in order to determine if the compensatory mitigation project is on track to meet performance standards and if adaptive management is needed. A schedule for monitoring and reporting on monitoring results to the district engineer must be included. You will be monitoring Mobile District Habitat Success Criteria metrics.

## **Adaptive Management Plan 33 CFR 332.4(c)(12)**

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





# Mitigation Plan Components

## **Construction Financial Assurances 33 CFR 332.4(c)(13)**

- A description of financial assurances that will be provided and how they are sufficient to ensure a high level of confidence that the compensatory mitigation project will be successfully completed, in accordance with its performance standards.
- Financial assurances need to include costs for construction as well as the implementation activities described for Maintenance.

## **Long-Term Management Plan 33 CFR 332.4(c)(11)**

A description of how the compensatory mitigation project will be managed after performance standards have been achieved to ensure the long-term sustainability of the resource, including long-term financing mechanisms and the party responsible for long-term management. Pine Savannah Habitats require continued prescribe burn management.

## **Long-Term Management Financial Assurances 33 CFR 332.4(c)(13)**

A description of financial assurances that will be provided and how they are sufficient to cover long-term land management requirements to provide a high level of confidence that the compensatory mitigation project will be successful long-term. completed, in accordance with its performance standards. Pine Savannah Habitats require continued prescribe burn management.





# Preservation

## Preservation Requirements in Mitigation Rule, 33 CFR§332.3 (h)(1): ALL MUST BE DEMONSTRATED

1. The resources to be preserved provide important physical, chemical, or biological functions for the watershed; and
2. The resources to be preserved contribute significantly to the ecological sustainability of the watershed. In determining the contribution of those resources to the ecological sustainability of the watershed, the district engineer must use appropriate quantitative assessment tools, where available; and
3. Preservation is determined by the district engineer to be appropriate and practicable; and
4. The resources are under threat of destruction or adverse modifications; and
5. The preserved site will be permanently protected through an appropriate real estate or other legal instrument (e.g., easement, title transfer to state resource agency or land trust).



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# Mobile District Compensatory Mitigation Guidance and Templates

One-stop shopping, all compensatory mitigation guidance and documents are housed on RIBITS.



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# Mobile District RIBITS Content



## District Processes

Guidelines, practices, and procedures for mitigation banking

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## Stream Mitigation Guidance

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- 2012 Stream SOP amended March 2024.pdf | [Download](#) | [Open File](#)
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# Questions?

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