



St. Paul District  
REGULATORY

US Army Corps  
of Engineers®



BWSR

# Public Notice

May 7, 2019

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## Notice of New Guidance:

### **Alternative Method for Determining Wetland Mitigation Credit Potential for Hydrologic Restorations on Cultivated Fields in Minnesota**

**Summary** The U.S. Army Corps of Engineers St. Paul District Regulatory Branch (Corps) and Minnesota Board of Water and Soil Resources (BWSR) have jointly developed a standardized method for determining credit potential associated with proposed wetland hydrology restorations in cultivated fields that are subject to annual disturbances due to cultivation. This method can be applied to proposed permittee-responsible, bank, or in-lieu fee wetland restoration projects seeking approval under either the Minnesota Wetland Conservation Act (WCA) or the Federal Mitigation Rule (33 CFR Part 332).

**Use of Guidance** This credit determination method can be used for areas that will be hydrologically restored<sup>1</sup> and are subject to the effects of cultivation activities of a certain frequency and extent. This guidance will help applicants quickly determine the number of potential credits a proposed hydrology restoration could generate, if all other requirements and standards for wetland mitigation are met. This guidance applies to all new or current (currently under review) mitigation proposals involving wetland hydrology restoration on cultivated fields, including mitigation banks and permittee-responsible mitigation.

Program-specific requirements and limitations are referenced in the guidance and project proponents should refer to the Corps District mitigation policy, Federal Mitigation Rule, WCA rules and other applicable guidance documents for a more comprehensive understanding of all program requirements and procedures.

While this guidance will apply to most restorations on cultivated fields, the method may not cover every possible restoration scenario. Given the intricacies of wetland hydrology restoration, the approving authorities reserve the right to review any compensatory mitigation proposal under standard procedures in unique cases. The Agencies will not apply this guidance to modify banks with an executed Mitigation Bank Instrument or approved bank plan, as the bank was approved under valid rules and guidance with agreement from the agencies and sponsor. This method is not applicable for determining credit potential for wetland creation, extended restoration (including WCA agricultural banks), enhancement, preservation or non-wetlands.

This guidance replaces and/or supersedes related items in all previous BWSR and Corps guidance documents concerning compensatory mitigation credit for proposed wetland

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<sup>1</sup> Defined as restoration via rehabilitation and re-establishment under Corps rules and guidance and restoration of fully or partially drained wetlands in WCA rules and guidance.

**SUBJECT: Alternative Method for Determining Mitigation Credit Potential for Hydrologic Restorations on Cultivated Fields in Minnesota**

hydrologic restorations in cultivated fields in Minnesota. Use of this guidance will be evaluated annually to determine if revisions or clarifications are warranted.

The guidance is available at the following websites:

Corps: [www.mvp.usace.army.mil/Missions/Regulatory/Mitigation/](http://www.mvp.usace.army.mil/Missions/Regulatory/Mitigation/)

BWSR: [www.bwsr.state.mn.us/wetland-bank-guidance-and-information](http://www.bwsr.state.mn.us/wetland-bank-guidance-and-information)

**Questions or Feedback** Please contact one of the Agency Contacts identified in the attached guidance document.

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Enclosure



US Army Corps  
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U.S. Army Corps of Engineers St. Paul District &  
Minnesota Board of Water and Soil Resources

## Alternative Method for Determining Wetland Credit Potential for Hydrologic Restorations on Cultivated Fields in Minnesota

May 6, 2019

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### Purpose and Applicability

This document describes a standardized method that can be used for determining credit potential associated with proposed wetland restorations in cultivated fields. It is **only** applicable to restorations that include hydrologic restoration. This method was developed jointly by the U.S. Army Corps of Engineers, St. Paul District Regulatory Branch (Corps) and the Minnesota Board of Water and Soil Resources (BWSR). This method can be applied to proposed permittee-responsible, bank, or in-lieu fee wetland restoration projects seeking approval under either the Minnesota Wetland Conservation Act (WCA) or the Federal Mitigation Rule (33 CFR Part 332).

This method specifically addresses the effects of frequent cultivation activities on the function and value of existing and former wetlands proposed for restoration. Frequency of cultivation of the restorable areas and the surrounding land play a substantial role in the level of impairment of a wetland and determine if this method is applicable to a wetland mitigation site. This method will not apply to all wetland restorations in fields involving cultivation activities. Proposed restorations in cultivated fields that do not meet the cultivation thresholds described in this method can use existing crediting methods in WCA rule and Corps guidance, which often results in similar credit potential. There may be circumstances where the use of this guidance is not warranted due to particular site conditions. In that situation, the project proponents will be notified early in the mitigation review process.

### Background

Restoring wetlands is an action that can be used to provide compensatory wetland mitigation/replacement under both federal (33 CFR Part 332) and state (Minnesota Rules Chapter 8420) wetland regulatory rules. Both programs determine potential credit based on the area (acreage) of wetland proposed to be restored and whether that area is existing partially drained (degraded wetland) or an effectively drained (former wetland), the latter often having higher credit potential. Credit potential is calculated by multiplying the area to be restored by a "percent credit," generally ranging from 50 to 100. In practice, particularly with restorations in cultivated fields, projects often involve a combination of partially and effectively drained wetland and differentiating between the two is difficult due to the high level of disturbance associated with tilling, planting, herbicide application, etc.

Credit determinations for cultivated fields are often complex and time consuming. The Corps and BWSR have developed this streamlined method for determining the maximum number of credits that can be generated from a wetland restoration on cultivated fields. Using this method should help project proponents quickly determine the number of potential credits a proposed restoration could generate if all other requirements and standards for wetland mitigation are met.

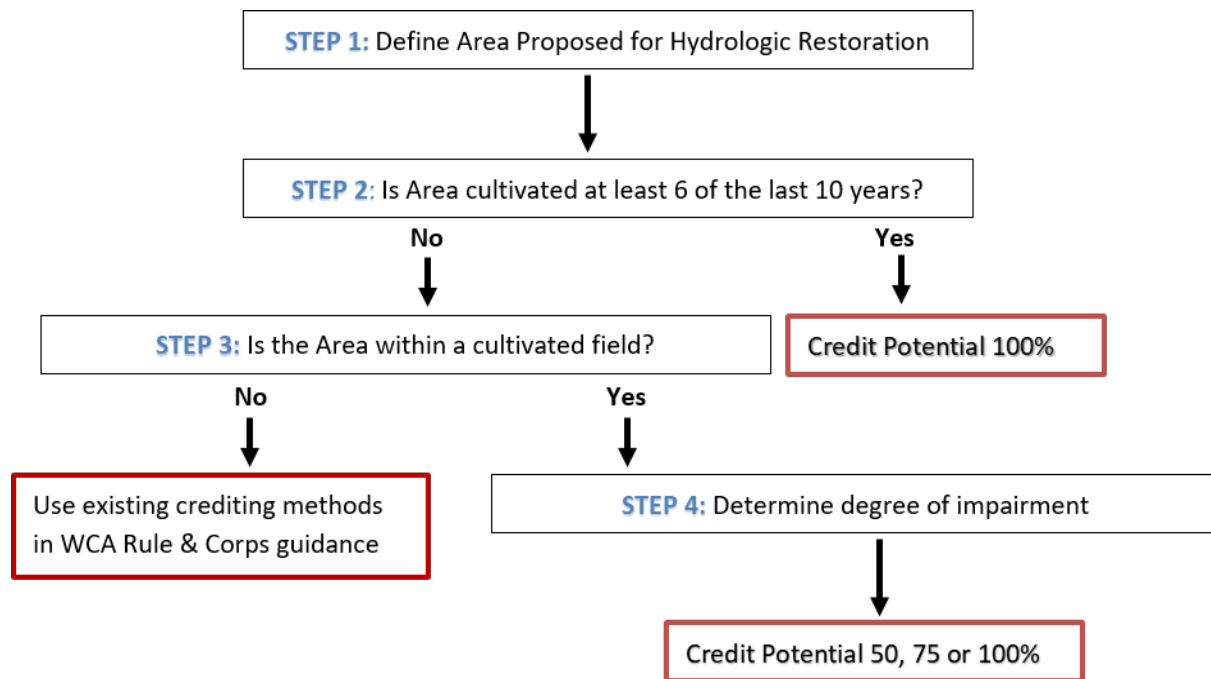
This method can only be used for areas that will be hydrologically restored<sup>1</sup> and are subject to the effects of cultivation activities of a certain frequency and extent. BWSR and Corps recognize there may be situations where the cultivation frequency thresholds not covered in this method may have similar or even more detrimental effects on proposed restoration areas; nonetheless, those areas are not eligible to use this method. Existing methods in WCA rule and Corps guidance can be used to determine credit potential for restorations that do not meet this method's applicability criteria.

Although some program-specific requirements and limitations are referenced in this document, project proponents should refer to the Corps St. Paul District mitigation policy, the Federal Mitigation Rule, WCA rules and other applicable State guidance documents for a more comprehensive understanding of all program requirements and procedures. This guidance replaces and/or supersedes previous BWSR and Corps guidance concerning compensatory mitigation credit for proposed wetland restorations in cultivated fields. However, the Corps and the WCA approving authority will consider program requirements and policies, as well as information and analysis provided by the proponent, to determine on a case-by-case basis if this method is appropriate.

## Method for Determining Mitigation Credit Potential for Wetland Restorations in Cultivated Fields

### Summary

The following flow chart summarizes the procedure described in this document. See the Method section for detailed descriptions of each step.



<sup>1</sup> Defined as restoration via rehabilitation and re-establishment under Corps rules and guidance and restoration of fully or partially drained wetlands in WCA rules and guidance.

## **Method**

The following describes a step-by-step method for determining credit potential for wetland restorations in cultivated fields. This method only applies to areas that include restoration of hydrology. This method is not applicable for determining credit potential for wetland creation, extended restoration (including WCA agricultural banks), enhancement, preservation or non-wetlands. This document references other standard procedures and methods associated with conducting wetland determinations and delineations in Minnesota. Those methods are further described in other guidance documents, including *Guidance for Submittal of Delineation Reports to the St. Paul District Army Corps of Engineers and Wetland Conservation Act Local Governmental Units in Minnesota* (March 4, 2015) and *Guidance for Offsite Hydrology/Wetland Determinations* (July 1, 2016).

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### **Step 1 Estimate the size and extent of the area proposed for restoration**

Determine a reasonable estimate of all the wetland areas that will be restored to meet hydrologic and vegetative performance standards (hereinafter referred to as “the Area”). Each Area may consist of more than one wetland, plant community and/or basin that will be a single contiguous wetland after restoration. The determination of the extent of the Area should consider the historical extent of the wetland, watershed changes, and constraints of current day site conditions. Project proponents can use a number of sources of information to inform their estimate, such as hydric soil mapping, historic (pre-drainage) aerial imagery, scope and effect calculations/estimates, elevation data (including elevations related to outlet control structures), and in some cases, hydrologic modeling. If a single drainage feature will be disabled, this step could be as straightforward as demarking the boundaries of a defined basin of mapped hydric soils. Situations with multiple drainage features, multiple soil types, significant differences in historic versus current watershed areas, drainage features that cannot be disabled, or the need to construct an outlet will make this step more intricate.

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### **Step 2 Determine if the area proposed for restoration is subject to cultivation activities associated with crop production at least 6 of the last 10 years**

Assess the cultivation status of the Area for the last ten years<sup>2</sup>. Cultivation activities include tilling and planting typically associated with commercial agricultural crop production. Such activities result in alteration of soils, hydrology and the full or partial removal of vegetation. Cultivation status is determined by reviewing aerial imagery from the ten years prior to the proposed restoration, although cropping records and other documentation should be used when available if they are specific enough to apply to the identified restoration Area. Unlike reviewing aerial imagery for wetland identification purposes, the review should focus on identifying if the Area was plowed<sup>3</sup>. This determination is not dependent on a crop being produced. When reviewing each year for cultivation activities, the activities must have occurred on at least 50% of the Area to be considered as subject to cultivation that year.

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<sup>2</sup> Interpreting the normal pattern of cropping attempts can sometimes be clouded by anomalies such as tile failures, prevented planting and temporary conservation program enrollment that result in the Area not being cultivated in a particular year or years. If properly documented and explained, anomalous years may be removed from the analysis and the next most recent year(s) progressively added until there is a total of ten years on which to base the analysis.

<sup>3</sup> As used here, plowed refers to primary tillage, the first step in seed bed preparation, and not a specific tillage implement.

If greater than 50% of the Area is subject to cultivation activities at least 6 of the last 10 years (as described in this step), then the Area has a credit potential equal to 100% the area restored, subject to other requirements and restrictions as applicable.

If greater than 50% of the Area is subject to cultivation activities in fewer than 6 of the last 10 years, as described in this step, proceed to Step 3.

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### Step 3 Determine if the area lies within a cultivated field

Assess the cultivation status of the land immediately abutting the Area, regardless of land ownership, using the same criteria and methods as described in Step 2. Boundaries directly abutting linear transportation features which effectively separate the Area from the adjacent land use can be excluded. **The Area is within a cultivated field if greater than 50% of its boundary abuts land that was cultivated at least 6 of the last 10 years.**

**If the Area is within a cultivated field, proceed to Step 4.** If the Area is not in a cultivated field, then credit potential must be determined in accordance with the criteria for rehabilitation (restoration of partially drained wetland) and re-establishment (restoration of completely drained wetland) as specified in Corps St. Paul District guidance and WCA rules.

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### Step 4 Determine the degree of impairment of the proposed restoration area

Determine the degree of impairment of the Area. Tables 1, 2 and 3 provide a method to assess the degree of impairment using hydrology and vegetation data. Some characteristics may not be applicable to a particular Area. Other characteristics that indicate aquatic resource functional impairment can be used if adequately described and justified. Proponents should characterize the degree of impairment for each parameter based on the predominant characteristic of the Area (i.e. applies to >50% of the Area) and be able to describe and support their assessment in the mitigation plan submittal. Not all characteristics in the tables will necessarily apply equally to each Area or project site and all determinations of impairments should be documented and justified by a project proponent.



**Table 1. Hydrology Assessment**

Degree of Impairment	Characteristics
High	<ul style="list-style-type: none"> <li>▪ Presence of functioning drainage infrastructure, e.g. tile or ditch, through or in close proximity to the Area that significantly alters the Area’s hydrology (e.g. the Area is within scope and effect of ditch or tile)</li> <li>▪ In the absence of drainage infrastructure, a functioning artificial outlet is present that removes most of the Area’s long and short term water storage</li> <li>▪ Greater than 50% of the Area is cultivated at least three out of the last 10 years</li> <li>▪ Area has less than 30% wet signatures from offsite hydrology assessment</li> <li>▪ Significant change in the Area’s water regime (two or more shifts from the historic water regime)<sup>4</sup></li> </ul>
Medium	<ul style="list-style-type: none"> <li>▪ Presence of functioning drainage infrastructure, e.g. tile or ditch, through or in close proximity to the Area that is minimally functional or has resulted in moderate changes to hydrology</li> <li>▪ In the absence of drainage infrastructure, a functioning artificial outlet is present that removes some of the Area’s long and short-term water storage</li> <li>▪ Area has 30-50% wet signatures from offsite hydrology assessment</li> <li>▪ Moderate change in the Area’s water regime (one shift from the historic water regime)<sup>4</sup></li> </ul>
Low	<ul style="list-style-type: none"> <li>▪ Drainage infrastructure has minimal or no effect on the Area’s hydrology</li> <li>▪ Area has a natural outlet or an artificial outlet that mimics the natural outlet of the basin</li> <li>▪ Area has greater than 50% wet signatures from offsite hydrology assessment</li> <li>▪ No notable change in the Area’s water regime (no shift from the historic water regime)<sup>4</sup></li> </ul>

<sup>4</sup> Both the historic and current water regime should be estimated using the definitions from *Classification of Wetlands and Deepwater Habitats of the U.S.*, 2013. In most instances the official soil series description will give an indication of the wetland’s historic water regime. Soil descriptions include information on water table depths in relation to the surface as well as their duration and frequency. Aerial imagery can also be used to assess historic as well as current water regimes. Examples 1 and 2 illustrate how to determine a water regime shift based on the definitions.

**Example 1:** Using the definitions below, the historic water regime for a particular Area is determined to be E (Seasonally Flooded-Saturated) and the current regime is determined to be A (Temporarily Flooded). This is a shift of more than two, from E → A, and would qualify as a significant water regime change.

**Example 2:** Using the definitions below, the historic water regime for a particular Area is determined to be E (Seasonally Flooded-Saturated) and the current regime is determined to be D (Continually Saturated). This is a shift of one, from E → D, and would qualify as a moderate water regime change.

**Classification of Wetlands and Deepwater Habitats of the U.S., 2013:**

<b>A. Temporarily Flooded</b>	Surface water is present for brief periods (from a few days to a few weeks) during the growing season, but the water table usually lies well below the ground surface for the most of the season
<b>B. Seasonally Saturated</b>	The substrate is saturated at or near the surface for extended periods during the growing season, but unsaturated conditions prevail by the end of the season in most years. Surface water is typically absent, but may occur for a few days after heavy rain and upland runoff
<b>C. Seasonally Flooded</b>	Surface water is present for extended periods (generally for more than a month) during the growing season, but is absent by the end of the season in most years. When surface water is absent, the depth to substrate saturation may vary considerably among sites and among years
<b>D. Continuously Saturated</b>	The substrate is saturated at or near the surface throughout the year in all, or most, years. Widespread surface inundation is rare, but water may be present in shallow depressions that intersect the groundwater table, particularly on a floating peat mat
<b>E. Seasonally Flooded-Saturated</b>	Surface water is present for extended periods (generally for more than a month) during the growing season, but is absent by the end of the season in most years. When surface water is absent, the substrate typically remains saturated at or near the surface
<b>F. Semipermanently Flooded</b>	Surface water persists throughout the growing season in most years. When surface water is absent, the water table is usually at or very near the land surface
<b>G. Intermittently Exposed</b>	Water covers the substrate throughout the year except in years of extreme drought
<b>H. Permanently Flooded</b>	Water covers the substrate throughout the year in all years
<b>J. Intermittently Flooded</b>	The substrate is usually exposed, but surface water is present for variable periods without detectable seasonal periodicity. Weeks, months, or even years may intervene between periods of inundation

**Table 2. Vegetation Assessment<sup>5</sup>**

Degree of Impairment	Characteristics
High	<ul style="list-style-type: none"> <li>▪ Cultivation and drainage prevent establishment of perennial, hydrophytic vegetation, i.e. less than 10% relative areal coverage by hydrophytes</li> <li>▪ Volunteer vegetation<sup>6</sup> typically not visible on aerial imagery when antecedent precipitation is normal</li> <li>▪ Volunteer vegetation, when present, has greater than 50% relative areal coverage of short-lived perennials, biennials or annuals that are characteristic of disturbance (e.g., ragweed, pigweed, chickweed, bindweed, lambs quarters, shepard's purse, nutgrass, quackgrass, crabgrass, purslane, amaranth, dandelion, etc.)</li> </ul>
Medium	<ul style="list-style-type: none"> <li>▪ Cultivation and drainage prevent establishment of most perennial, hydrophytic vegetation, i.e. less than 50% relative areal cover of hydrophytes</li> <li>▪ Volunteer vegetation typically visible on aerial imagery when antecedent precipitation is normal</li> <li>▪ Volunteer vegetation has 10-50% relative areal coverage of hydrophytic species characteristic of similar wetlands that are not cultivated and drained</li> </ul>
Low	<ul style="list-style-type: none"> <li>▪ Greater than 50% relative areal coverage of hydrophytic species characteristic of similar wetland types that are not cultivated and drained</li> </ul>

<sup>5</sup> Data from on-site investigations or delineations to support this determination is preferred but generally not required; reliance on aerial imagery is acceptable.

<sup>6</sup> Volunteer vegetation refers to vegetation that grows on its own rather than being deliberately planted.



**Table 3. Potential Credit Determination**

Determine credit potential based on the degree of hydrology and vegetation impairment calculated from Tables 1 and 2.

Hydrology Impairment	Vegetation Impairment	Credit Potential
High	High or Medium	100%
Medium	High	
High	Low	75%
Medium	Medium	
Low	High	
Medium	Low	50%
Low	Medium or Low	

**Other Considerations and Requirements**

Project proponents using this method for determining credit potential must still provide all other information required for approval of a compensatory mitigation project, including a wetland determination/delineation. However, the wetland determination/delineation may often be conducted using offsite methodologies consistent with *Submittal of Delineation Reports to the St. Paul District Army Corps of Engineers and Wetland Conservation Act Local Governmental Units in Minnesota* (March 4, 2015) and *Guidance for Offsite Hydrology/Wetland Determinations* (July 1, 2016).

**Evaluation of this Guidance**

Results of this guidance will be evaluated annually to determine if revisions or clarifications are warranted.

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