

The Credit/Debit Method for Estimating Needs in Compensatory Wetland Mitigation

The Credit/Debit Method (*Calculating Credits and Debits for Compensatory Mitigation in Wetlands*) is used to calculate if mitigation actions will replace the functions and values lost at a wetland that is filled or damaged. It is based on the 2004 wetland rating systems for western and eastern Washington (Ecology publications [#04-06-025](#), [#04-06-015](#)) and was the basis for the 2014 versions of the rating system (Ecology publications [#14-06-029](#) and [#14-06-030](#)). It includes new concepts in managing our wetlands that emerged since the 2004 rating system was published.

The wetland rating system provides numeric scores for wetland functions. These scores, however, cannot be directly used to estimate how much compensatory mitigation is needed (see the Focus Sheet *Using the Wetland Rating System in Compensatory Mitigation*, Ecology publication [#08-06-009](#)). The Credit/Debit Method was developed to meet this need. The questions used to rate functions in the Credit/Debit Method are the same as those in the 2014 rating system, and it provides the same level of scientific rigor.

Scoring

The Credit/Debit Method generates a score for a wetland ranging from 1-9 for each of three wetland functions that are valuable to society. These are:

- Improving water quality,
- Reducing flooding and erosion, and
- Providing habitat for plants and animals.

This score is based on three aspects of each function. These are the:

- Potential of the site to provide the function,
- Potential of the landscape to maintain each function at the site scale, and
- Value each function has for society.

The ‘currency’ for comparing the functions lost when a wetland is impacted to the functions gained through mitigation is called an ‘acre-point.’

MORE INFORMATION

The Credit/Debit Method provides one tool for determining the adequacy of compensatory wetland mitigation. It does not set any new regulatory requirements.

The Credit/Debit Method is suitable only for freshwater vegetated wetlands as defined by state and federal delineation manuals.

The Method is considered a rapid assessment that still provides scientific rigor.

Webpages

Credit/Debit Method:
<http://www.ecy.wa.gov/program/s/sea/wetlands/mitigation/creditsdebit/index.html>

Mitigation Resources:
<http://www.ecy.wa.gov/program/s/sea/wetlands/mitigation/index.html>

Contact Information

Amy Yahnke
360-407-6527
amy.yahnke@ecy.wa.gov

Accommodation Requests

To request ADA accommodation, including materials in a format for the visually impaired, call Ecology at 360-407-6600.

Persons with impaired hearing may call Washington Relay Service at 711. Persons with speech disability may call TTY at 877-833-6341.

You calculate the loss of functions at the site that will be impacted by multiplying its score for each function by the size of the impact. This is called a Debit. You calculate the gain in functions at a mitigation site by multiplying the increase in each function score that can be expected when the mitigation site is finished by the area of the mitigation. This is called a Credit.

For example, someone proposed to fill 2 acres of a wetland that scores 6 points for habitat. This generates a basic mitigation requirement (Debit) of 12 acre-points for habitat (2 acres impacted x 6 points for habitat function). The mitigation proposed will create a 6-acre wetland with a habitat score of 3 points. This generates 18 acre-points of basic mitigation credit (6 acres created x 3 points for habitat function).

These basic Debit and Credit calculations, however, need to be modified to account for the loss of functions during the time it takes a mitigation site to fully develop its functions (called temporal loss), and for the possible risk that the mitigation project will not fully succeed. So, in the example above the 6 acres of mitigation may still not be enough to fully replace the functions lost.

Addressing Temporal Loss

Scientific studies have shown that it may take many decades to fully develop the functions at a mitigation site. As a result, there is a net loss of function between the time an impact occurs and when a mitigation site provides functions. The temporal loss of functions is included in the calculations as a multiplier and increases the number of Debits that need to be replaced. If, however, mitigation is done in advance, and the functions already exist before impacts occur, the temporal loss factor is not included in the calculation of Debits.

Addressing the Risk of Failure

Studies of compensatory mitigation indicate that some projects fail completely or are only partially successful at replacing the loss of functions. Therefore, the risk of failure needs to be factored into the calculation of how much mitigation is needed to achieve no net loss. The risk factor is included in the calculations as a multiplier and reduces the number of Credits that can be generated at a site.

Studies prior to 2005 showed that about half of mitigation projects failed. Generally, the risk of failure was compensated in permits by requiring more area of mitigation with a basic ratio of 2:1. Two acres of mitigation were required for every acre of impact. Since 2005, several studies suggest that mitigation is improving, and the rate of failure is closer to 25%. As a result, the risk of failure has been reduced in the calculations. The basic ratio to account for the risk of failure is 1.5:1 instead of 2:1. When calculating the Credits available through mitigation, this ratio can be further reduced to 1.2:1 if the mitigation plan follows the guidance for choosing mitigation sites using a watershed approach (*Selecting Wetland Mitigation Sites Using a Watershed Approach* for western and eastern Washington, Ecology Publications [#09-06-032](#) and [#10-06-007](#)).

Definitions

Acre-points - the currency for comparing the functions lost to the functions gained.

Debits - the acre-points of the functions lost in the wetland being impacted. The calculations of Debits are adjusted to account for the losses in functions during the time it takes a mitigation site to fully develop its functions (called temporal loss).

Credits - The gains in acre-points for functions that result from the mitigation activities. The calculations of Credits are adjusted to account for the risk that a mitigation project will not fully succeed (risk of failure). The starting ratio to account for the risk of failure is 1.5:1.

A mitigation project is usually deemed adequate when its Credit scores for the three functions are higher than the Debit scores for the impacts.