

WI-MN Wetland Functional Assessment Initiative

Steering Committee Document No. 1 –

This document is a working draft that may be revised/updated by the steering committee as the functional assessment tool is further discussed and developed.

Document Objective

- Identify and group wetland functions to be assessed.
- Establish broad basis for tool development.
- Identify specific objectives for each technical group to be established for each function.

Wetland Functional Groups

Wetland functional assessment tool development will use the following wetland functional groups. Grouping of wetland functions increases the potential utility of the tool by allowing for broader functional assessment of similar categories of functions as well as assessments of more specific individual functions. The selected wetland functions within these groups are based on the collective statutes, rules, and policies of the two states.

Water Quality – wetland functions related to the physical attributes of and chemical processes occurring within wetlands that affect the suitability of water for particular uses both within and downstream of the wetland.

- Nutrient and pollutant trapping, filtering, and processing
- Sediment trapping and storage
- Shoreline stabilization

Water Quantity – wetland functions related to the physical attributes of wetlands that affect the movement and distribution of water on the landscape.

- Surface water attenuation, including overbank floods and overland flow
- Groundwater recharge
- Low-flow augmentation for streams

Ecological – wetland functions related to the physical attributes and chemical processes of wetlands that affect the natural relationships of organisms both in the wetland and on the surrounding landscape.

- Habitat for aquatic organisms
- Habitat for terrestrial wildlife

Climate - wetland functions related to the physical attributes and chemical processes of wetlands that mitigate the effects of greenhouse gases.

- Carbon sequestration and reduction in greenhouse gas emissions

Anthropogenic – wetland functions related to the physical attributes of wetlands that affect both passive and active human uses of wetlands.

- Commercial uses of wetlands (aquaculture, cranberry and wild rice production)
- Public recreation, cultural, scientific, and educational uses of wetlands (hunting, fishing, wildlife viewing, environmental education)
- Natural scenic beauty

Broad Basis for Tool Development

Considerations used for the functional analysis will include both the effectiveness of a wetland to perform a specific function, as well as the value of that function to society. Functional effectiveness will be evaluated based upon a suite of considerations, including but not limited to hydrogeomorphic traits, soil characteristics, and vegetative characteristics. Value to society will be evaluated based upon both opportunity and significance considerations. These factors can then be used to generate a functional unit measurement for a given wetland, such as functional acres or square feet.

Two aspects of each function are to be evaluated:

1. It's effectiveness in performing the function; and
2. It's value in the area/watershed. Value is considered in terms of:
 - a. Opportunity to perform the function; and
 - b. Significance of function in area/watershed.

The effectiveness and value of each function must be evaluated in terms of not only the current site and landscape conditions, but also the ability of those conditions to reasonably persist into the future (i.e. sustainability of the function). Providing this context to the evaluation of a particular function allows the evaluator to incorporate practical, real-world considerations that could drive regulatory decisions. For example, a wetland located in an urbanizing area may have historically had a high stormwater storage function, but that function may no longer be as important to society due to factors such as altered flow paths that now direct stormwater to artificial stormwater ponds. In this example, artificial stormwater ponds may now provide as great or greater stormwater storage functions than the wetland did historically.

Each function has one or more drivers which are primary factors that determine how well the function is performed. For example, the vertical structure and stem density of the plant community and the susceptibility of the wetland to flooding are primary drivers of a wetland's ability to slow floodwater

Once the primary drivers of each function are identified, then indicators of those drivers (and thus indicators of each function) must be identified. These indicators can be onsite (within the wetland) or offsite (within the surrounding landscape).

Indicators can be positive or negative.

- A positive functional indicator is a characteristic that by its presence indicates increased effectiveness, opportunity, and/or significance of a function.
- A negative functional indicator is a characteristic or "stressor" that by its presence diminishes the effectiveness, opportunity, and/or significance of a function.

Indicators must be pared down to those that are readily assessed with a reasonable degree of accuracy in a short period of time. Once indicators are chosen, scoring models for each function shall be developed.

Wetland Functional Technical Group Objectives

Technical groups will be established to identify and develop metrics for each functional group. The following tasks/objectives are established for each technical group for consistency.

1. Identify the primary drivers of each function considering both the effectiveness of a wetland in performing the function, the opportunity of the wetland to provide that function, and the significance of that function in the watershed.
2. Identify indicators (measures or observations) for each driver of the different wetland functions within the group. Determine if indicator is positive or negative (stressor).

3. Develop meaningful categories (e.g. high, medium, low) for each indicator related to the effect of the driver on the effectiveness and value of the associated function.

After review by the steering committee, a second set of objectives will be established for the technical groups to further refine the metrics, develop data collection/observation protocol, and begin developing functional models and scores.