



FAQs: Wetland Functional Assessments

A Fact Sheet for Tribal Wetland Programs

November 2023



Q: What is a wetland functional assessment (WFA)?

A: Wetland functions are described as the physical, chemical and biological processes that occur naturally in wetlands ([Adamus et al. 1991](#)). These processes are often vital to maintaining the integrity of an ecosystem. A WFA uses information about a wetland's surface hydrology, plant communities, water chemistry, soils, and human impact to assess the performance of selected functions by that wetland. This is different from a condition assessment, in that a functional assessment explores how a wetland is performing within the surrounding landscape, whereas a condition assessment evaluates or rates wetlands independently (without considering landscape context). In recent years, a "Rapid Assessment Method" (RAM) approach has become popular, as this is a relatively quick, field-based assessment following consistent and repeatable processes.

Q: What is the purpose of conducting a WFA? What are the benefits?

A: An initial WFA can provide baseline information about particular wetlands, and subsequent follow-up WFAs can be used to evaluate progress towards achieving identified program goals. For example, results can help identify and prioritize high-functioning wetlands for preservation and maintenance of significant wetland functions, guide and quantify wetland restoration activities, prioritize wetland-related resource management decisions, evaluate best management practices, and evaluate property acquisitions.

Q: What type of functions are commonly assessed?

A: Functions commonly considered include surface water detention/storage, streamflow maintenance, groundwater recharge, sediment/particulate retention, nutrient retention/transformation, bank and shoreline stabilization, carbon sequestration, and habitat by species (aquatic invertebrate, plant communities, waterfowl, etc.). Some efforts have been made to incorporate traditional knowledge and cultural functions, such as spiritual importance, recreation, visual/aesthetic quality, education, and historical significance.

Q: What information is used to conduct a WFA?

A: WFAs commonly use existing [wetland classification data](#) (National Wetland Inventory [NWI], [LLWW](#)) that provide basic information on hydrology (e.g., inundation and flow), vegetation or substrate type (e.g., wooded, herbaceous, unvegetated), and human modification (e.g., impoundment, draining, excavation). Depending on the function, additional data may include soil/geology data, vegetation community or land use classifications, topographic position, and/or biological survey results (e.g., presence of rare or special concern species, diversity or integrity indices). For each function, a list of possible wetland types and/or combination of NWI and LLWW codes (and, in some cases, relationship/connection to other wetlands) that are considered to be significant in performing the function is generated using best professional judgement. A GIS model can then be developed to categorize those wetlands in a dataset.

Q: Are there different types or levels of WFA?

A: The RAM approaches to WFAs often divide assessments into two parts or levels: a broad landscape assessment that can be conducted in an office environment with remotely-sensed data and GIS analysis techniques; and a more traditional field evaluation that includes rapid on-site assessment. A comprehensive WFA typically incorporates both landscape and field components.

Q: Where have WFA methods been developed and implemented? Can WFA methods be adapted for a specific area or tribal community?

A: Several states have developed RAM methods for WFAs that combine a traditional field approach with remotely sensed data and GIS analysis techniques. These include the Minnesota Routine Assessment Method ([MnRAM](#)) (BWSR 2010), the California Rapid Assessment Method for Wetlands ([CRAM](#)) (CWMW 2013), the Oregon Rapid Wetland Assessment Protocol ([ORWAP](#)) (Adamus et al. 2016), and the West Virginia Wetland Rapid Assessment Method ([WVWRAM](#)) (Byers 2020). The ORWAP is based on a more general standardized assessment method for the U.S. called the Wetlands Ecosystem Services Protocol (WESP) (Adamus 2011). The original designer of WESP has worked with tribes, including the Tulalip and Nez Perce, to adapt that method for their specific needs, including cultural functions and values provided by wetlands. The Coeur d'Alene Tribe also utilizes an adapted version of the Montana Wetland Assessment Method ([MWAM](#)) (Berglund and McEldowney 2008) to assess wetlands on their reservation.

Q: If we want to develop or adapt a RAM to conduct a WFA, where would we start?

A: Often tribes utilize a RAM that they have built from an existing WFA methodology, with the help of an experienced practitioner in the field. One of the initial steps in the development or adaptation of a RAM is to develop a framework of conceptual models (one per function) that address your specific goals and objectives. Conceptual models identify the attributes that are relevant to an ecological function and how they contribute to function performance. They also address whether there are certain conditions that need to exist for the function to be performed or that alter how the function is performed. In other words, the conceptual model provides a systems-level framework for understanding how the specific characteristics of the landscape (e.g., soil, vegetative structure, water regime, etc.) work together to provide or support an ecological process. This helps identify what data to collect and how that data can be used to understand function performance.

References

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