

Wetland Conservation Act (WCA) Topic of the Week

Wetland Delineation Methods and Practical Considerations

August 12, 2020

WCA topics of the week are a series of informal fact sheets that provide practical information on WCA program implementation in a question and answer format. They are intended to better clarify and summarize certain aspects of WCA implementation and should be considered as supplemental to WCA statutes, rules and any associated BWSR guidance and policy. Information in these fact sheets are subject to change over time.

Question: Should all wetland delineations be conducted using the same methodology?

Answer: No. All wetland delineations should use the same basic approach of assessing the three wetland parameters (soils, hydrology, vegetation) as espoused in the 87 Manual and supplements, but the exact methodology used can vary considerably. The 87 Manual describes four general delineation methodologies (routine levels 1-3 and comprehensive – see [BWSR Guidance](#)). Within these general methods there is flexibility in how they are applied and what types of information is needed. The overall purpose of the delineation is to reasonably document and justify the wetland determinations and boundaries associated with a project site in terms of the three wetland parameters.

Question: What is the most commonly used wetland methodology?

Answer: The routine level 2 method. This is the “standard” method most practitioners are taught in wetland delineation classes. It involves establishing representative transects perpendicular to a potential wetland boundary and sampling in wetland, upland, and at the wetland boundary. Data collected includes a detailed soil description, areal coverage estimates of each plant species, and observation of wetland hydrology indicators.

Question: When conducting a routine level 2 delineation, is a sampling transect needed for every wetland on a project site?

Answer: Not necessarily, it depends on the site and the characteristics of the wetlands. There may be instances where less or more than one transect is needed for a single wetland. For example, a relatively homogenous site with five small, but separate wetlands with similar wetland-upland transitions may only require three transects to adequately characterize and document the boundary. Conversely, a site with one wetland that has two or three different wetland-upland transitions may require two or three transects for the one wetland.

A rule of thumb is to complete a sampling transect for each unique wetland-upland boundary transition. However, there is considerable judgment involved in exactly “how unique” a particular transition has to be to warrant its own sampling transect. Delineators and reviewers should be reasonable and practical when making this assessment. It is unnecessary to complete dozens of transects and data forms for wetland boundaries that are abrupt and/or clearly defined, and it is inadequate to complete a single transect for multiple wetland-upland transitions that are diverse and subtle.

Question: What if it is not possible to dig a hole at a sampling point location?

Answer: This situation can occur in disturbed areas as well as some natural wetland areas. For example, there may be rocky fill material, shallow bedrock, or compacted soils that prevent auger/shovel penetration. Certain shallow open water wetlands may have loosely consolidated soil material that does not stay in the sampling auger when pulled out of the ground for observation, thus requiring an alternative sampling location. In some situations an alternative sampling location may not exist or otherwise be representative of the upland-wetland transition. When this occurs, the delineator should describe the situation and rely on other information such as soil maps, landscape position, vegetation, and observable hydrology indicators (i.e. those that don't require a borehole) to make reasonable conclusions regarding hydric soil status. The 87 Manual and supplements (see Chapter 5) provide guidance on dealing with these type of difficult situations.

Question: Is a transect and sampling points needed when the only wetland-upland transition on the project site is permanent standing water to a steep slope of upland vegetation.?

Answer: Probably not in this situation unless there are indications of a sloped wetland (e.g. groundwater discharge). While transects and sample points are the standard way to document the wetland boundary, there are situations where a more general description of the transition (in terms of soils, hydrology, and vegetation) with supporting photos and maps (topographic survey or LIDAR for example) may sufficiently document and justify a very abrupt boundary. These situations tend to occur in areas where wetlands have been excavated and the boundary is open/deep water associated with a shallow pond or ditch transitioning to an unnatural, steep slope.

Question: Should abrupt topographic boundaries as described in the above question be field located with pin flags and/or GPS points?

Answer: Some WCA Local Government Units (LGUs) require surveys (prepared by licensed surveyor) of wetland boundaries for all or certain types of proposed projects. Otherwise, if abrupt boundaries follow a consistent elevation (such as the top of a ditchbank), using a contour elevation from a topographic map may be sufficient.

Question: Should streams, constructed stormwater ponds, lakeshores, and ditches be delineated on a project site?

Answer: Yes, but the identification and delineation of these other aquatic resources is different than delineating wetlands. The delineation of wetlands is primarily conducted for project compliance with wetland regulations. However, delineation reports are also important for permitting and compliance with regulations for other aquatic resources. In Minnesota there are regulations associated with certain streams, ditches, and public waters that are not wetlands. The wetland delineation report serves as a baseline characterization of existing conditions for potential regulatory compliance/permitting associated with all aquatic resources. The boundary of non-wetland aquatic resources could be based on an elevation or field-determined depending on the resource type and the regulatory program involved. At a minimum, the location and boundary of non-wetland aquatic resources should at least be approximated in the wetland delineation report (see joint BWSR-Corps [guidance](#) on submitting wetland delineation reports in Minnesota).