

Wetlands Program Policy 95-1: Bordering Vegetated Wetland Delineation Criteria & Methodology

BVW: Bordering Vegetated Wetland Delineation Criteria and Methodology

Issued: March 1, 1995

Purpose

This policy defines which plant species or other plants are wetland indicator plants as specified in the wetland regulations (310 CMR 10.55(2)(c)). This policy also identifies a standard methodology for determining the boundary of Bordering Vegetated Wetlands (BVWs) in accordance with 310 CMR 10.55(2)(c)(1-3). As a supplement to this policy, the Department has developed a handbook and field data form to assist in the methodology of delineating wetlands.

Statutory and Regulatory Background

The Wetlands Protection Act, M.G.L. c. 131 s.40, states within the definition of bogs, marshes, swamps, and wet meadows that "... a significant part of the vegetational community is made up of, but not limited to, nor necessarily including all of the following plants or groups of plants...". The definition for BVW in the wetland regulations (310 CMR 10.55(2)(a)) states that these areas "... support a predominance of wetland indicator plants...". The regulations (at 310 CMR 10.55(2)(c)) go on to describe a BVW boundary as "... the line within which 50 percent or more of the vegetational community consists of wetland indicator plants...".

Analysis

Wetland indicator plants are defined in the regulations at 310 CMR 10.55(2)(c) as one of three groups:

1. plant species listed in the Act;
2. plants in the U.S. Fish and Wildlife Service's National List of Plant Species that Occur in Wetlands: Massachusetts (Reed, 1988) with a wetland indicator category of FAC, FAC+, FACW-, FACW, FACW+, OBL, and;
3. plants with morphological or physiological adaptations to life in saturated conditions.

Plants Listed in the Act:

The Wetlands Protection Act lists plants by common name and one of the following: family (i.e. rushes - Juncaceae), genus (i.e. ashes - Fraxinus) or species (i.e. red maple - *Acer rubrum*). However, some plants that normally occur in uplands are included in some of these family and genus groups listed in the Act (such as Juncaceae - *Juncus secundus* - second rush, or Fraxinus - *Fraxinus americana* - white ash). To clarify this inherent ambiguity, the Department has determined that all species listed in the

Act are wetland indicator plants. Where families or genera of plants are identified in the Act, the Department will include the species within those families or genera that are within the appropriate categories on the National List.

Plants on the National List:

Plants in the National List with a wetland indicator category of Facultative (FAC), Facultative+ (FAC+), Facultative Wetland- (FACW-), Facultative Wetland (FACW), Facultative Wetland+ (FACW+), or Obligate Wetland (OBL) are included in the wetland regulations as wetland indicator plants. The National List is a comprehensive list of vascular plants that occur in wetlands. Any changes or future supplements to the 1988 National List for Massachusetts will be reviewed and approved by the Department before being used in conjunction with the wetland regulations.

Plants With Adaptations:

In some instances, plants with indicator categories of Upland (UPL), Facultative Upland (FACU), or Facultative- (FAC-) that exhibit adaptations to life in saturated conditions are also wetland indicator plants. Some examples of these adaptations include shallow root systems, fluted trunks, buttressed tree trunks, multiple trunks, adventitious roots, polymorphic leaves, floating leaves, floating stems, hypertrophied lenticels, oxidized rhizospheres, aerenchyma, and inflated leaves, stems or roots. One example is white pine (*Pinus strobus*) with shallow roots or swollen trunks found growing in forested wetlands.

Methodology for Determining a BVW Boundary

Although the BVW boundary is based upon the line in which 50% or more of the vegetational community consists of wetland indicator plants, there has been uncertainty as to how this should be determined. In order to provide consistency in determining BVW boundaries, the Department has produced a handbook describing a methodology. The Department has also developed a field data form, contained in the handbook, that should be used to report information used in determining the boundary.

The handbook, "Delineating Bordering Vegetated Wetlands Under the Massachusetts Wetlands Protection Act", (Department of Environmental Protection, Division of Wetlands and Waterways, 1995) includes the details of how to conduct, prepare for, and review boundary delineations for Bordering Vegetated Wetlands. It describes how to conduct the dominance test, how to determine the presence of wetland hydrology at a site, and how to establish the BVW boundary from this information.

When delineating or verifying a BVW boundary it is important to record certain information about site characteristics. Any information used to determine or verify the BVW boundary should be reported on the MassDEP field data form. Site specific conditions may allow a BVW boundary to be established without detailed measurements or calculations. An example is where an abrupt change in topography results in an obvious change in vegetation. In these cases, documentation of the vegetation and general site conditions may be used to delineate a BVW boundary.

Site information should be recorded on the MassDEP field data form and submitted with the Request for Determination of Applicability or Notice of Intent whether or not detailed information or measurements are used. The field data form can also be

used by the issuing authority to record information when verifying a BVW boundary. When vegetation alone is adequate to delineate a BVW boundary, complete only the vegetation portion of the form. When vegetation alone is not adequate to delineate the BVW boundary, both vegetation and hydrologic information should be provided on the form.

The dominance test should be used to determine whether the vegetative community consists of 50% or greater wetland indicator plants. The dominance test is a sampling technique that identifies which plant species are the most abundant within an observation plot. The dominance test uses the most abundant plants in an observation plot since the dominant plants often provide a good representation of site characteristics.

The dominance test determines plant species dominance by evaluating percent cover (basal area can be used for trees). Information on percent cover is recorded for all plant species in each plant layer (ground cover, shrub, sapling, climbing woody vines, tree) present in the observation plot. Plant species with a percent cover equal to or less than 1% in a layer should not be included. In addition, any layer with a total percent cover of less than 5% should not be included. Dominant plants within each layer are recorded and classified as being either wetland indicator plant species or non-wetland indicator plants. The wetland plant criterion is met if the number of wetland indicator plant species is equal to or greater than the number of non-wetland indicator plants.

The handbook also describes how to determine and document the presence of wetland hydrology at a site. The presence of wetland hydrology needs to be documented in areas where vegetation alone is not presumed adequate to delineate the boundary. It can also be used to overcome the presumption that vegetation alone is adequate for delineating a BVW boundary. In those cases where information on wetland hydrology is submitted, it must be used by the issuing authority when verifying a BVW boundary. Also, the issuing authority may require that information on wetland hydrology be submitted to assist in establishing a BVW boundary.

The wetland hydrology criteria can be met if hydric soils are present within the observation plot. The presence of hydric soils can be determined by recording information on the soil profile. Information on soil color, soil horizons, and indicators of soil saturation (such as oxidized rhizospheres, mottles, and concretions or nodules) are helpful in identifying hydric soils. Direct observations of the presence of water should also be noted. Information on wetland hydrology should also be reported on the MassDEP field data form.

Sites where vegetation is not presumed to be adequate to delineate the boundary or sites that have been disturbed will require more detailed analysis. Certain areas have wide transition zones where the BVW boundary is not obvious. Wetland hydrology at a particular site may vary from season to season and direct observations of wetland hydrology may not always be possible. For these sites, the presence of hydric soils and/or other indicators of wetland hydrology together with vegetation will need to be evaluated and documented in more detail to establish a BVW boundary. On disturbed sites, soils may be used as the sole criterion for determining a BVW boundary.