A COMMON ERROR IN ASSESSING HYDROPHYTIC VEGETATION FOR WETLAND IDENTIFICATION

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Introduction and Background

The Corps of Engineers' 1987 Wetland Delineation Manual (1987 Manual) contains a criteria that wetland plant communities must be dominated by hydrophytes. The 1987 Manual provides several indicators to determine if the criteria is met. The field indicator that is considered the strongest is based on determining the dominant species in the plant community. A positive indicator of hydrophytic vegetation requires that over 50% of the dominant species in an area be categorized as facultative (FAC; excluding FAC- species), facultative wet (FACW) or obligate (OBL) in the National List of Plant Species that Occur in Wetlands. (Reed, 1988).

A widespread problem has been noted in that most practitioners treat this field indicator as a criteria or "standard" that must be met in order to designate an area as a wetland; and the nationally sponsored federal classes in wetland delineation present this indicator as a criteria. In our experience as instructors in both national and regional classes and in reviewing hundreds of wetland delineation reports we have noted that this common misinterpretation of the 1987 Manual has resulted in both false-negative and false-positive determinations of hydrophytic vegetation.

Sampling and Results

Plant communities were characterized in forested and herbaceous wetlands occurring commonly at low elevations in the Pacific Northwest. Methods used were consistent with those described in the 1987 Manual. In the herbaceous community, quantitative sampling using a point quadrat method was used to supplement other methods.

Forested Community: This community is a mature forested wetland adjacent to a small lake. Both the canopy layer and shrub layer can be easily assessed using visual estimates of dominant species. Results are presented in Table 1. These data show that 20% of the dominant species are FAC, FACW or OBL, which does not provide a positive indicator of hydrophytic vegetation.

Herbaceous Community: The herbaceous community was located adjacent to a large lake in an area where the woody vegetation had been removed a half century or more ago. Vegetation was sampled in spring, summer and fall seasons. Dominant species in different seasons varied, however the results were the same relative to the hydrophytic vegetation indicators in the 1987 manual. Results obtained in the spring of 1994 are shown in Table 2. These data show that 50% of the dominant species are FAC, FACW or OBL which does not provide a positive indicator of hydrophytic vegetation. (Note: It is interesting that our analysis of an adjacent upland plant community would provide a positive indicator of hydrophytic vegetation, i.e., a false positive).

Discussion and Conclusions

In both communities, if plant indicator status is applied as a criteria or inflexible "standard", neither community would be considered hydrophytic. However, field evidence considered in total (see Table 3 for soils and hydrology notes) clearly indicate the areas to be wetlands (see table 2). Indeed, the forested community represents a classic forested peat wetland common throughout the northwest and nearly all investigators would easily recognize it as a wetland. On the other hand, our experience indicates that many practicing wetland delineators would conclude that the herbaceous community is not a wetland. There are several explanations for reaching such a conclusion:

1. Misunderstanding regarding the list of plant species that occur in wetlands. Some investigators incorrectly interpret that the list provides a basis for concluding that most or all the dominant species in all wetlands will be categorized as FAC, FACW or OBL.

2. Treatment of the indicator in the Corps Manual as a criteria or standard.

3. Seasonal variation. During some times of year, plants such as summer annuals may populate an area which temporarily leads to a false negative conclusion regarding the occurrence of hydrophytic vegetation.

We do not believe that problems in verifying the occurrence of hydrophytic vegetation in areas like those described above are caused by incorrect categorization of plants in the National List of Plant Species that Occur in wetlands. It is clearly possible for species which occur up to 1/3 of the time in wetlands to be the dominant species in some wetland vegetation communities. Avoidance of this type of error can be achieved by:

1. Learning to recognize those plant communities which are commonly dominated by plants with facultative upland (FACU) indicator status


3. Avoiding wetland delineation methodologies which have simplistic, numeric, inflexible "criteria" based on the species lists. Such methods do not recognize natural variability or adaptability of individual species (Tiner, 1991)

4. Integrate information on soils, hydrology and vegetation when making wetland delineations. Avoid approaches which treat soils, vegetation and hydrology as independent variables.

5. Provide training which goes beyond cookbook approaches.

Seattle District of the Corps of Engineers and EPA Region 10 have addressed this problem by issuing supplementary guidance on interpretation of the 1987 manual. This guidance is explained in a paper presented by Knaub et al. at this workshop.

References


Tiner, Ralph W. The Concept of a Hydrophyte. Bioscience Vol 41 No 4, pp 236-247.

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