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SUBJECT: WASHINGTON REGIONAL GUIDANCE ON THE 1987 WETLAND DELINEATION MANUAL

Introduction and Background. Several issues have arisen regionally regarding the identification and delineation of wetlands using the 1987 Corps of Engineers' Wetlands Delineation Manual (hereafter "Manual").

The purpose of this information paper is to provide guidance on specific issues which are frequently misunderstood when using the Manual. These issues include the following:

1. Interpretation of Hydrophytic Vegetation Indicators.
2. Other Hydrophytic Vegetation Field Indicators.
3. Methods for Analyzing Vegetation Communities.
4. Growing Season.
5. Interpretation of Normal Circumstances.
6. Interpretation of Hydrologic Data.

ISSUE 1: 1987 Manual, pages 19-26, Guidance on "Indicators of Hydrophytic Vegetation" paragraphs 35 a and 35 b (1), pages 19 and 23.

Issue Description.

In the 1987 manual, the hydrophytic vegetation criteria are defined in **Part 11** and are termed "diagnostic characteristics." **Part III** describes the technical basis of the criteria and identifies **indicators** which help to determine if a criterion is met.

An item of particular concern has been proper interpretation of the vegetation indicators. We have found that many manual users focus only on the indicator which states that: "More than 50% of the dominant species.(in a plant community) are OBL, FACW or FAC on lists of plant species that occur in wetlands."

In Washington, we are aware of several wetland plant community types which do not provide a positive indicator of hydrophytic vegetation when consideration is limited to only "indicator all (i.e., presence of over 50% FAC, FACW, or OBL plant species). These wetland communities can occur on either organic or mineral soils and under a wide spectrum of water regimes. They are generally referred to as "Facultative upland (FACU) dominated wetlands." Because FACU dominated wetlands are common in Washington, it is essential that hydrophytic vegetation indicators be properly interpreted.

It is important to consider that wetlands develop in response to hydrologic conditions; i.e., presence of water (we do not regulate hydrophytic vegetation or hydric soils of the U.S., rather we regulate waters of the U.S.). Thus, the known presence of wetland hydrology is very strong evidence of wetland occurrence if soils and vegetation are present. The utility and necessity for wetland identification manual(s) derives from our frequent inability to directly observe hydrologic conditions thus creating a need to rely on indicators of vegetation, soils, and hydrology to make a determination.

Guidance.

There are several positive indicators for hydrophytic vegetation provided in the Manual. In referring to these indicators the 1987 Manual states: "any one of the following is indicative that hydrophytic vegetation is present": (listed on pages 19-26). Investigators should consider whether any of the positive indicators of hydrophytic vegetation are present and consider information on soils and hydrology before making a decision on the presence of hydrophytic vegetation.

There is also confusion regarding interpretation of "indicator b (1)": Visual observation of plant species growing in areas of prolonged inundation and/or soil saturation (page 23 of the 1987 Manual). In general, if the hydrology and soils criteria are clearly met, then an area has prolonged periods of inundation or saturation. Thus, one has made an observation of plant species growing under wetland conditions consistent with the Diagnostic Environmental Characteristics (i.e., criteria) for vegetation.

Caution is urged in interpreting this field indicator. Documentation should be included to indicate that the situation observed is not the result of unusual flooding, particularly high rainfall, or a one time condition such as a temporary water diversion.

Interpretation of this field indicator is more difficult when soils and hydrology features are not so evident; i.e., during dry seasons when direct observation of wetland hydrology is not possible or where some drainage has taken place. In such cases, investigators should rely on their previous experience, consultation with other experienced delineators and the literature to determine if the vegetation community is known to occur in areas of prolonged inundation or soil saturation.

Vegetation information should be combined with soils and hydrology observations to make a wetland determination. Information sources used as a basis of the decision should be documented. Documentation should include description of previous field observations of similar communities, who was consulted, etc.

Investigators must also be certain that the site being investigated does not represent an **Atypical Situation** (Section F, Page 83 of the Manual) The site may also represent a **Problem Area** (Section G, Page 93) where positive evidence of vegetation is absent during some seasons of the year.

ISSUE 2: 1987 Manual, Pages 23, 24, 26, Paragraph 35 b (2) (3) (4) and (5): other Hydrophytic Vegetation Field Indicators.

Issue Description.

The Manual is inconsistent in its guidance regarding use of hydrophytic vegetation field indicators other than "indicator a." In the section on routine delineation for areas under 5 acres, (page 61), the 1987 Manual states under Step 9: "When more than 50% of the dominant species in a community type have an indicator status of OBL, FACW, and/or FAC, hydrophytic vegetation is present . . . [p]ortions of the area failing this test are not wetlands." In contrast to this, on page 65 of the 1987 Manual, in the method for areas greater than 5 acres in size at step 19 c. 1. it states: "Hydrophytic vegetation is present at the observation point when 50% of the dominant species have an indicator status of O13L, FACW, and/or FAC; when two or more dominant species have observed morphological or known physiological adaptations for occurrence in wetlands; or when other indicators of hydrophytic vegetation are present."

Guidance.

The size of the project site is- irrelevant when applying the field indicators. Observations of all evident field indicators should be recorded for each site investigated and all should be used to determine if hydrophytic vegetation is present.

ISSUE 3: Methods used for determining dominant plant species.

Issue Discussion and Guidance.

DATA FORM 1 in the 1987 Manual states under Vegetation: , [list the three dominant species in each vegetation layer (5 if only 1 or 2 layers)] .11 Recent guidance (see reference 3) states that other ecologically based methods for selecting dominant species from each stratum are acceptable. Methods contained in the 1989 Manual are specifically referred to as acceptable. For example, when quantitative data is collected, the definition in the 1989 manual can be used. It states the following:

Dominant species are those species in each stratum that, when ranked in descending order of abundance and cumulatively totaled, immediately exceed 50 percent of the total dominance measure for that stratum, plus any additional plant species comprising 20, percent or more of the total dominance measure for that stratum. Dominance measures include percent areal coverage and basal area, for example.

In low diversity communities, dominants will be less than five or three and may only be one. Sound professional judgement based on careful observation and data collection must be used in selecting dominant species.

ISSUE 4: Growing season.

Issue Discussion.

The manual defines the growing season as:

"The portion of the year when soil temperatures at 19.7 inches below the soil surface are higher than biologic zero (5 degrees C). For ease of determination this period can be approximated by the number of frost-free days."

Several issues arise in determining the growing season:

--In much of the Northwestern U.S. some plant species are growing during every month of the year.

--Each county soil survey has several locations for which air temperature data is tabulated. This can result in numerous growing seasons for each county.

--The data location nearest to a wetland delineation site may not be representative of the growing season for the site being investigated. For example, SCS data may be from a site at sea level but the delineation site may be at high elevation with an annual temperature regime much different than the SCS data site.

Guidance.

Use sound professional judgement based on careful observation to determine if the growing season is in progress. For example, evidence of new or recent growth such as flowers, new shoots, new leaves, or swollen buds on plants suggests that active growth is occurring. Basically, if plants are growing, it is the growing season.

Take soil temperatures at 19.7 inches to determine if the formal definition of growing season is met. Soil thermometers are readily available at most forestry supply stores.

Use sound professional judgement in interpreting the data tables in the soil surveys. Use the data set which makes the most sense for the site being investigated. Be particularly cautious when the site being investigated is located far from or in a different physiographic setting than the nearest data station.

For much of Western Washington the mesic growing season has, in the past, been considered a good rule of thumb; i.e., 1 March to 31 October (except for some coastal areas which may have a year round growing season and in areas that have more extreme winter temperatures which may result in a shorter growing season). However, this should not be used to conflict with field data and observations.

ISSUE 5: Normal Circumstances.

Issue Discussion.

The term "normal circumstances" has created confusion for many Manual users as it is often misinterpreted to mean "normal environmental conditions." As such ' users often confuse the methodology associated with the Section F (Atypical Situations) and the Section G (Problem Areas).

Guidance.

Normal circumstances is an integral and important term in determining the extent of jurisdiction under the Clean Water Act. The term comes from the definition of wetlands:

"Wetlands are those areas that are inundated and saturated for a frequency and duration sufficient to support and, under **NORMAL CIRCUMSTANCES** do support a prevalence of vegetation typically adapted to life in saturated soil conditions"

The original intent of this term was to assure that the extent of Federal jurisdiction would not be obscured by human-caused activities done without benefit of a Section 404 permit. For example, if an individual removed the vegetation of a wetland, it would still be a wetland under normal circumstances. That is, physically removing the vegetation neither eliminates the site from jurisdiction nor from the definition of wetlands. The same would hold true if fill materials were placed in wetlands without benefit of permit; the area is still under the jurisdiction of the Federal Government even though the wetlands have been covered by unauthorized fill. These conditions are discussed in the Manual under Section F - Atypical Situations. There is also a methodology associated with Atypical Situations which helps the user assess the extent of jurisdiction when the wetland parameters are obscured due to unauthorized activities.

Keep in mind that if fill is placed **with benefit of permit** (that is, the fill is placed legally), that condition is now the new "normal circumstances" and the area would not be considered jurisdictional, unless wetland characteristics return.

A "problem area" is a wetland system that is a natural or naturalized system that may permanently or periodically lack certain field indicators for a specific parameter. These can be a seasonal wetland where hydrology is missing during the dry season; a newly created wetland; a wetland with soils derived from red parent materials; etc. This is discussed in Section G of the manual and also in the March 6, 1992, Guidance.

Issue 6: Interpretation of Hydrologic Data.

Issue Discussion.

Many users of the Manual have spent considerable time and effort installing and monitoring ground water wells under the assumption that the water table must be at 12 inches for sufficient time during the growing season for the wetland hydrology criterion to be met. However, the hydrology criterion states:

"The area is inundated either permanently or periodically at mean water depths \leq 6.6 ft., **OR** the soil is saturated to the surface at some time during the growing season of the prevalent vegetation." (Page 14, Diagnostic Environmental Indicators).

Under "Field Indicators of Hydrology" the Manual states:

"For soil saturation to impact vegetation, it must occur within a major portion of the root zone (usually within 12 inches of the surface) of the prevalent vegetation). Page 38, field indicators.

Well data only reflects the depth of the water table and not the zone of soil saturation. If the water table is near or at the surface for sufficient time, the observer can be reasonably certain that surface saturation is occurring. However, several soils can have a capillary fringe of 18 inches or greater (especially organic soils). In addition, wetland systems that are driven by surface water may have a deep water table where the root zones of the soil are saturated from persistent surface water (not just periodic rainfall).

While well data can be extremely useful, without supplemental observations of surface soil saturation and/or observations of surface ponding or flooding, the data may be meaningless.

Many users have also limited the amount of time that they make groundwater observations (2-3 months out of the year) making the assumption that this was sufficient time to adequately characterize wetland hydrology. This limited sampling time may incorrectly interpret the hydrology of the site. We recommend that the sample adequately reflect seasonal hydrology and its effect on vegetation (generally from about mid-October to mid-June to capture both dormancy and new growth)

Guidance.

Ground-water well data must always be supplemented with observations of the extent in the soil profile of the capillary fringe. This can be done by examining

a soil profile in the nearby vicinity of a ground water well every time depth to the ground water is measured. Observations of surface ponding and/or flooding should also be made. In addition, soil temperatures at approximately 20 inches should be recorded to adequately determine extent of the growing season at that site. As discussed in Issue 4, reliance on air temperature data to determine growing season may artificially restrict the time that a site is actively functioning as a wetland.

ADDITIONAL INFORMATION. Should you be interested in obtaining any of the available references cited or have further questions, please contact either of the following Federal agencies:

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 U.S. Army Corps of Engineers
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References

1. Corps of Engineers Wetlands Delineation Manual. Technical Report Y-87-1. January, 1987.
2. CECW-OR Memorandum dated 7 October 1991 titled: Questions and Answers on 1987 Manual.
3. CECW-OR Memorandum dated 6 March 1992 titled: Clarification and Interpretation of the 1987 Manual.
5. Federal Manual for Identifying and Delineating Jurisdictional Wetlands. January 1989.
6. Tiner, Ralph. How Wet is a Wetland? Great Lakes Wetlands, Vol. 2, No. 3. Summer, 1991.

