Updating Regional Supplements to the Corps of Engineers Wetland Delineation Manual

by Jacob F. Berkowitz

PURPOSE: Regional supplements to the *Corps of Engineers Wetland Delineation Manual* provide guidance on identification and delineation of wetlands throughout the United States. This document outlines a process to periodically revise the supplements to: 1) update wetland indicators to reflect the state of the science; 2) streamline and clarify delineation methodologies; and 3) address new challenges associated with problematic wetland delineations. By updating the supplements to reflect advances in the science and to promote effective resolution of difficult wetland issues, the Corps further improves wetland delineation accuracy and efficiency in support of the wetland permitting program.

INTRODUCTION: Wetland delineation remains fundamental to Corps of Engineers (Corps) and Environmental Protection Agency (EPA) regulatory responsibilities under Federal regulations (33 CFR 320-330), Section 404 of the Clean Water Act (CWA). Wetland delineation consists of standardized procedures for identification of wetlands and their boundaries to define the limits of Federal jurisdiction under the CWA. The *Corps of Engineers Wetlands Delineation Manual* (*Corps Manual*; Environmental Laboratory 1987) and associated regional supplements contain indicators and methodologies for delineating wetlands (Wakeley 2002). As scientists continually expand the pool of knowledge concerning wetlands in the United States, regulatory manuals should incorporate new methods, indicators, and approaches; the development of regional supplements provides a vehicle for the inclusion of new and improved technical support.

BACKGROUND: Published in 1987, the *Corps Manual* represented the first national set of technical documents for wetlands regulatory purposes, and established a single approach to the identification and delineation of wetlands. It specified that an area possess three essential characteristics for identification as a wetland – hydrophytic vegetation, hydric soils, and wetland hydrology – and described sampling protocols for delineating wetlands on both relatively natural and highly disturbed sites (Wakeley 2002).

In 1993, at the request of Congress, the National Research Council (NRC) — the research arm of the National Academy of Sciences — formed a committee to review the scientific basis for wetland delineation and the technical validity of wetland delineation manuals. The members of the committee concluded that regional variation among wetlands across the United States affects the validity and usefulness of any national delineation manual, and strongly recommended that delineation procedures undergo revision to increase their regional specificity. In other words, regional differences in climate, geology, soils, hydrology, plant and animal communities, and other factors impact the identification and functioning of wetlands. Thus, a single national manual cannot adequately consider and account for these regional differences (U.S. Army Corps of Engineers 2011).

SUPPLEMENT DEVELOPMENT: Based on the findings of the NRC, in 2002, the Corps implemented a plan for developing regional supplements to the *Corps Manual* (Wakeley 2002). These supplements provide regional wetland delineation indicators without altering the basic concepts or criteria of the *Corps Manual*. The regional supplements include regionalized lists of field indicators of

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wetland vegetation, hydrology, and hydric soils. Supplements also include expanded procedures for problematic and difficult wetland delineations.

The United States and territories are divided into 10 regions. Each region is addressed by a specific regional supplement. The ten regions are: Alaska, Arid West, Great Plains, Western Mountains, Valleys and Coast, Midwest, Atlantic and Gulf Coastal Plain, Caribbean Islands, Northcentral and Northeast, Hawaii and Pacific Islands, and Eastern Mountains and Piedmont (Figure 1). Supplements contain regional boundaries, wetland indicators, delineation procedures, wetland types and occurrence, and other information that is specific to each region. Each regional supplement contains the following:

- A description of the region
- Hydrophytic vegetation indicators
- Hydric soils indicators
- Wetland hydrology indicators
- Procedures for "difficult wetland situations" in the region
- A data form, references, a glossary, and appendixes

Figure 1. Regional supplement boundaries for wetland delineation.

The development of all supplements follows National Academy of Sciences recommendations to increase the regional sensitivity of wetland delineation methods (National Research Council 1995); Berkowitz (2011; 2011b) and Wakeley (2002) provide additional information concerning the development of regional supplements. The development and implementation of supplements followed the procedure outlined below:

- Form a Regional Working Group of wetland experts
- Draft the Regional Supplement
- Review of the draft supplement by the interagency National Advisory Team (NAT)

- Review by an Independent Peer-Review Team
- Field test the draft supplement
- Release the draft supplement for public comment
- Finalize and publish
- Corps Districts in the region release Public Notices implementing the "interim" supplement for a one-year trial
- Revise and publish Version 2.0
- Release Public Notices for final Regional Supplement implementation

Each regional supplement brings the *Corps Manual* up-to-date with current knowledge and practice for each respective region without changing the definition of wetlands. Regional supplements are designed for use *with* the current version of the *Corps Manual* (Environmental Laboratory 1987) and all its subsequent versions. Where differences in the two documents occur, the regional supplement takes precedence over the *Corps Manual*. Table 1 identifies specific sections of the *Corps Manual* replaced by each regional supplement (U.S. Army Corps of Engineers 2011).

Table 1. Sections of the *Corps Manual* replaced by regional supplements.

Item	Replaced Portions of the *Corps Manual* (Environmental Laboratory 1987)	Replacement Portion (regional supplement)
Hydrophytic Vegetation Indicators	Paragraph 35, all subparts, and all references to specific indicators in Part IV	Chapter 2
Hydric Soil Indicators	Paragraphs 44 and 45, all subparts, and all references to specific indicators in Part IV	Chapter 3
Wetland Hydrology Indicators	Paragraph 49(b), all subparts, and all references to specific indicators in Part IV	Chapter 4
Growing Season Definition	Glossary	Chapter 4, Growing Season; Glossary
Hydrology Standard for Highly Disturbed or Problematic Wetland Situations	Paragraph 48, including Table 5 and the accompanying User Note in the online version of the *Manual*	Chapter 5, Wetlands that Periodically Lack Indicators of Wetland Hydrology, Procedure item 3(h)

CURRENT STATUS: The current status of regional supplement publication is shown in Table 2.

ONGOING AND FUTURE WORK: The development of the Corps' wetland delineation methodologies remains an ongoing process. The interagency National Advisory Team (NAT) for Wetland Delineation continues oversight of the development of the *Corps Manual*, including improved regional specificity. The NAT consists of technical experts from the Corps, EPA, NRCS, and FWS. The NAT reviews new data and makes recommendations for proposed changes in wetland-delineation procedures to Corps Headquarters. The NAT also evaluates submissions from academia, the private sector, and existing scientific panels including NRC, the National Technical Committee for Hydric Soils (NTCHS), and the National Technical Committee for Wetland Vegetation (NTCWV).

Table 2. Release dates for regional supplements.

Regional Supplement	Interim Release	Version 2.0 Release
Alaska	2006	2007
Arid West	2006	2008
Great Plains	2008	2010
Western Mountains, Valleys, and Coasts	2008	2010
Midwest	2008	2010
Atlantic Gulf Coastal Plain	2008	2010
Caribbean Islands	2009	2011
Northcentral and Northeast	2010	2012
Hawaii and Pacific Islands	2010	2012
Eastern Mountains and Piedmont	2010	2012

The NAT provides national perspectives on wetland delineation and ensures that all regional supplements maintain uniform format and methods, while allowing for variability through the regional application of field indicators of hydrophytic vegetation, hydric soils, wetland hydrology, and procedures for difficult wetland situations. Other functions of the NAT are to periodically review each regional supplement, comment on the application of each supplement, and implement national technical committee recommendations where appropriate. The NAT proposes changes to regional supplements when new technical information becomes available to improve the accuracy, efficiency, repeatability, and defensibility of wetland determinations within a region. For example, if the NAT is provided with scientific literature and NTCHS approval of a novel set of field indicators for hydric soils in Alaska, the NAT may propose revisions of the regional supplement for that region to incorporate that knowledge. Additionally, proposed regional supplement revisions will address ongoing problematic or difficult wetland delineations within a region. The following procedure will be used for updating and revising regional supplements:

- Each supplement is reviewed by NAT every three-four years on a rotating basis (Table 3)
- Corps Districts, other Federal agency staff, and regional working groups are surveyed for information, comments, and suggestions concerning potential revisions and difficult wetland situations
- All public comments submitted to Corps Districts and Headquarters concerning the regional supplement are reviewed
- Recommendations from national technical committees are reviewed
- All comments from agency staff, the public, regional working groups, and technical committees are compiled and potential revisions are drafted
- Suggested revisions are sent to regional working groups for review
- Formal field testing is not required; however, submission of field data forms, scientific literature, or supporting documentation (with data) outlining the effect of revisions is required
- All revisions must receive approval by NAT and Corps Headquarters

- Revised regional supplements are posted electronically on the Corps' Headquarters website as Version 2.x with "x" representing the revised version number
- Although no formal interim period or public notice is required, the effect of each revision and all submitted comments receives review by NAT following one year of implementation

Table 3. Estimated review periods for regional supplements.

Regional Supplement	Review Initiation Date
Alaska	2013
Arid West	2013
Great Plains	2013
Western Mountains, Valleys, and Coasts	2014
Midwest	2014
Atlantic Gulf Coastal Plain	2015
Caribbean Islands	2015
Northcentral and Northeast	2016
Hawaii and Pacific Islands	2016
Eastern Mountains and Piedmont	2016

While it remains important to reflect the state of the science and pursue the best methodologies available, wetland delineators and the public require a level of consistency and certainty in Federal regulations. Applying the step-wise approach outlined in Table 3 allows for the incorporation of new knowledge while avoiding frequent revisions that result in a shifting of delineation methods that may impact regulatory processes. This approach also allows for the NAT to continue promoting national consistency within the structure and format of all regional supplements. In some cases, comments from the public, academia, wetland delineators, or the national technical committees may require NAT to consider revisions sooner than outlined above.

SUMMARY: Regional supplements to the *Corps Manual* contain procedures and indicators for the delineation of wetlands and provide a vehicle for incorporating new knowledge into technical documents. In order to reflect the state of the science, it remains essential that the Corps and other agencies continually develop and improve methodologies to promote consistent, defensible, efficient, and accurate wetland determinations that best serve the public through the regulatory program. To achieve these goals, the NAT continues to oversee the *Corps Manual* and regional supplements, and provides periodic review of these documents. Revisions may be proposed in order to consider comments from the public and wetland delineators, implement recommendations of national technical committees, and address ongoing difficult wetland situations. Although this document includes a schedule of supplement revisions, the volume of comments and recommendations received determines the frequency of revisions for each region. It is expected that some regions require infrequent and minimal revisions, while other regions require additional consideration. The system of supplements implemented by the Corps allows for the flexibility necessary to address regional variations throughout

the Nation's wetlands, while maintaining a structured, fair, and consistent national policy toward wetland resource management.

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Member	Agency	Location
Jacob Berkowitz	Corps	Mississippi
Steve Eggers	Corps	Minnesota
Michael Gilbert	Corps	Nebraska
Robert Lichvar	Corps	New Hampshire
Daniel Martel	Corps	California
Paul Minkin	Corps	Massachusetts
Karen Mulligan	Corps	Washington DC
Chris Noble	Corps	Mississippi
Norman Melvin	NRCS	Texas
David Olson	Corps	Washington DC
Stuart Santos	Corps	Florida
Ralph Spagnolo	EPA	Pennsylvania
Mary Anne Thiesing	EPA	Washington
Ralph Tiner	FWS	Massachusetts
Katherine Trott	Corps	Virginia
Lenore Vasilas	NRCS	Washington DC

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National Advisory Team for Wetland Delineation
Regulatory Branch (Attn: CECW-CO)
U.S. Army Corps of Engineers
441 G Street, N.W.
Washington, DC 20314-1000

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