CENED-OD-R (1145-2-303b) 13 March 1992

MEMORANDUM FOR Director of Civil Works, HQ, USACE
20 Massachusetts Ave, Washington, D.C. 02314

SUBJECT: Regional Interpretation of the 1987 Wetland Manual

1. REFERENCES:

A. Memorandum, HQ, USACE, CECW-OR, 20 Feb 92, subject: Regional Interpretation of the 1987 Manual.

B. Memorandum, CENED-OD-R, 5 Mar 92, subject: Staff Paper - Regional Interpretation of the 1987 Manual.

C. Draft Memorandum, CENED-OD-R 9 Sep 92 subject: Guidance for the Interpretation of Wetland Boundaries Using the 1987 Manual in the Six New England States.

2. In response to your Memorandum of 20 February 1992 referenced above, I am transmitting the New England Division's Regional Datasheets for wetland delineation pursuant to the 1987 Corps Manual for review and approval. Additionally, NED has prepared an analysis of the regional datasheets relative to its consistency with the 1987 Manual to facilitate OCE's review. NED finds the datasheets valid and consistent with the Manual.

3. NED's regional datasheets are long standing. They were first developed in 1988 for use with the 1987 Corps Wetland Manual to insure consistency from consultants and to expedite review by Corps' staff. They were revised to comply with the 1989 Federal Manual, and again in 1991 to revert to the 1987 Manual. Several public notices have been issued, and the datasheets reflect comments received from the public. They have been fully coordinated with the Federal agencies and well received by the public. They provide needed consistency and repeatability, and save applicants considerable time and costs. The datasheets have been provided to OCE and WES periodically for review.

4. Although the new datasheet included in your Memorandum of 6 March 1992 is very close in substance and format to NED's datasheet, NED's datasheet still provides supplemental guidance needed to insure consistency and ease of review. To introduce this new datasheet would cause considerable disruption to the regulated public and result in more time and costs to applicants and Corps staff. There would be a substantial increased burden on Corps' staff to coordinate with the agencies, reeducate the public, and verify submittal.

5. My staff and I are available if any further coordination is needed. Staff questions may be referred to Mr. Mike Sheehan, 617-647-8673.

PHILIP R. HARRIS
Colonel, Corps of Engineers
Division Engineer

Enclosure

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CENED-OD-R (1145-2-303B) 12 March 1992

MEMORANDUM THRU Chief, Policy Analysis Section
Chief, Regulatory Division
Director, Operations Directorate
District Engineer

FOR Division Engineer, U.S. Corps of Engineers, New England Division

SUBJECT: Staff Paper -- Clarification and Interpretation of the 1987 manual.

1. References:

A. Memorandum, Directorate of Civil Works (CECW-OR), 6 March 1992, subject: Clarification and Interpretation of the 1987 Manual.

B. Memorandum, CENED-OD-R, 6 March 1992, subject: Staff Paper -- Regional Interpretation of the 1987 Manual.

2. I just reviewed the memorandum from the Directorate of Civil Works and I offer the following supplement to the CENED-OD-R memorandum. The cited paragraphs refer to the 6 Mar 92 memorandum from CECW-OR.

A. Vegetation:

(1) The dominance method employed in the New England protocol is specifically approved at paragraph 2b.

(2) The 5-stratum approach used in the New England protocol is specifically approved at paragraph 2c.

(3) Paragraph 2d discusses and advises caution applying an obscure approach mentioned in the section on comprehensive data collection on page 79 of the 1987 manual. In summary, the approach allows the delineator to consider the plant community to be hydrophytic whenever he observes two or more dominant species that "exhibit morphological adaptations or have known physiological adaptations to wetlands." I am not comfortable with the broadened application of paragraph 79 of the Manual; the New England protocol does not refer to this approach, but it does not disallow it either.

(4) Paragraph 2e offers the FAC-neutral test to bolster weak indicators of wetland hydrology or hydric soil. I have recommended against this in the past, fearing that the procedure adds complexity without improving reliability. Implementation would invariably cause confusion and I believe that it is more likely to increase, rather than decrease, the extent of areas interpreted as wetlands in New England, particularly where the FAC-neutral test is used as a surrogate for hydric soils. During our field testing of this option in 1986, 1987 and again in 1991, we concluded that it did not offer any reliable information about the plant community. It must be EMPHASIZED that the National List of Plant Species that Occur in Wetlands specifically cautions that, "wetland indicator categories should not be equated to degrees of wetness." I believe that the FAC-neutral test contradicts this warning and is contrary to information theory. I recommend that the District exercise its discretion in this matter and not endorse the use of the FAC-neutral option as a normal course in this region.

B. Hydrology: In paragraph 3c the FAC-neutral test is again suggested to support the hydrology parameter in groundwater-driven systems. And again, I don't endorse this procedure as being reliable or efficient. Paragraph 3d offers oxidized rhizospheres as a hydrologic indicator and warns against relics. Their warning may miss the mark a bit. In this region, oxidized rhizospheres appear to be quite responsive to the seasonal changes in the water table. I have observed them to come and go from year to year in the same observation plot. I suspect that "relics" are quickly obliterated by the action of worms and other pedoturbation during periods when the soil is not reduced. On the other hand, oxidized rhizospheres may form in non-wetlands in an agricultural setting, particularly in transitional meadows, as the consequence of bio-reducing conditions in the watershed following the application of organic fertilizers.

C. Soil: Paragraph 4d is misleading. The paragraph refers to an over-simplification of the concept of an aquic moisture regime for most soil orders. In its context, the phrase "certain problem soils" suggests that other morphology associated with an aquic moisture regime is unusual; I am among the majority of New England's soil scientists and wetland practitioners when I disagree.

D. Methods: I am confident New England's alternative plot sizes and dominance measures are sound sampling procedures and consistent with the 1987 Manual; Paragraph 5a does not specifically identify our methods, but acknowledges ours as potentially acceptable.

3. The 3/92 dataform enclosed with the CECW-OR memorandum is a tremendous improvement over the forms offered in the 1987 Manual -- I am tickled that it is so similar to the form we developed for New England. Nevertheless, with a supportive and constructive intent, I offer the following criticism:

A. Forms identification: A two-sided or multiple paged form requires sufficient identification on every page to minimize disorder when completed forms are photocopied or archived.

B. Vegetation: The form does not solicit or offer space to record the actual dominance measurements. Repeatable data is a fundamental strength to the New England protocol. In real life, when data is reduced to an inventory, the data collection assumes similar form. The vegetation data is crowded by a an unnecessary sequence of numbers and lines; for several months each year, we work with fingers cramped by the cold and sheets smudged by dampness -- at the suggestion of several hundred practitioners, our regional dataform offers relatively unconstrained space or check boxes. Unlike the dataform published with the Manual, observed morphological adaptations to wetlands are not acknowledged on the 3/92 dataform.

C. Soil: I applaud the addition of a soil profile description to the 3/92 dataform. This is consistent with my philosophy that accountability improves with the precision of the record. However, the space devoted to a soil profile and the horizontal lines are a bit too confining for many of us. The design of the New England dataform reflects the suggestions of hundreds of practitioners who called for unconstrained space or check boxes. The New England checklist employs a hierarchy that is directly from the National Technical Committee's (NTCHS) hydric soil criteria: Soil Taxonomy, Drainage Class, and Watertable. The elements in the 3/92 checklist are built into our drainage classes.

4. Physical Organization: As a former infantryman and a practicing wetland scientist, I kept field records since 1966; I offer the following lessons from my own failures: multiple-paged forms are a real handicap in the field -- a flip-sided form is an acceptable compromise. Check off boxes are superior to written text or shapes, particularly when the forms are damp or wet and produced on 20lb. paper. Wide margins are poor substitutes for writing space within the form. People will always try to fill out forms without referring to the instructions, so the form must be pretty self-explanatory or offer enticement for reading the instructions -- our supplemental definitions and performance standards offer a ready reference for the delineator. It is unrealistic to expect folks to sacrifice their "basic load" to carry the 1987 Manual to the field; therefore, routine concepts and procedures must be simple enough to memorize.

5. I would be pleased to demonstrate, offer further explanation or provide additional substantive evidence on any points that I have made herein. My professional network is roughly 1000-strong, I would be pleased to present other practitioners or views from New England's regulated community. I am available at 617-647-8306.

MICHAEL J. SHEEHAN
Senior Wetland Scientist

CENED-OD-R (1145-2-303B) 5 March 199x2 MB

MEMORANDUM THRU CHIEF, POLICY ANALYSIS BRANCH
CHIEF, REGULATORY DIVISION
DIRECTOR, OPERATIONS DIRECTORATE
DISTRICT ENGINEER

FOR DIVISION ENGINEER, U.S. CORPS OF ENGINEERS, NEW ENGLAND DIVISION

SUBJECT: Staff Paper -- Regional Interpretation of the 1987 Manual

1. REFERENCES:

A. Memorandum, HQ, USACE, CECW-OR, 20 Feb 92, subject: Regional Interpretation of the 1987 Manual.

B. Environmental Laboratory. 1987. "Corps of Engineers Wetlands Delineation Manual," Technical Report Y-87-1, US Army Engineer Waterways Experiment station, Vicksburg, Miss.

C. Regulatory Guidance letter 90-6, HQ, USACE, CECW-OR, 14 Aug 90, subject: Expiration Dates for Wetlands Jurisdictional Delineations, paragraph 6.

D. Public Notice, CENED-OD-R, Environmental Resource Unit, 4 Jul 89, subject: Use of the Technical Criteria for Hydrophytes, Hydric Soils, and Wetland Hydrology....

E. Disposition Form, CENED-OD-R, Environmental Resource Unit, 1 Oct 87, subject: Transmittal of Routine and Atypical Wetland Delineation Materials.

F. Memorandum, CENED-OD, 4 Mar 88, subject: Wetland Delineation Procedures.

G. Letter, Regulatory Branch, 12 Apr 88, (a transmittal of operational guidance to Normandeau Associates).

H. Memorandum, CDR, CENED, CENED-OD-R, (undated copy), subject: FOA Technical comments on the Federal Manual for Identifying and Delineating Jurisdictional Wetlands (Manual)

I. Memorandum, CENED-OD-R, Environmental Resource Unit, 4 Mar 91, subject: Staff Guidance for the Interpretation of wetland Boundaries in the Six New England States.

J. Memorandum, CEWES-ER-W, 3 Feb 92, subject: Review of "Consistent Delineation Using the 1987 Corps of Engineers manual in the North Atlantic Division" dated 22 January 1992.

K. Draft Memorandum, CENED-OD-R, Environmental Resources Section, 9 Sep 91, subject: Guidance for the Interpretation of Wetland Boundaries Using the 1987 Corps manual in the Six New England States.

L. Memorandum, CECW-OR, 16 Sep 91, subject: Questions and answers on the 1987 Manual.

2. BACKGROUND:

A. This staff paper is prepared in response to MG Williams Memorandum (HQ, USACE, 20 Feb 92). In New England, in the normal course of project development, wetland boundaries are identified on the site plans used for state, local and federal permits. New England's regulatory program has relied heavily upon the technical excellence of the environmental services community in our region. Routinely, wetland boundaries are documented by agents for the applicant and verified or corrected in the field by the Corps.

B. The 1987 Manual (Environmental Laboratory, 1987) was prepared primarily for use by Corps of Engineers field inspectors, see 1987 Manual, Part I, Para 17. While the manual is a useful tool for others, our experience is that, without regional supplementation, inordinate costs and energy can be expended by a project proponent producing delineation documentation that is incomplete, inaccurate and which fails to substantiate the Corps decision. Since 1986, New England Division has worked with experts throughout the region in the public and private sector to develop a standard sampling and documentation protocol that is consistent with regulations and technical guidance. The evolution of this protocol is evidenced in numerous records of correspondence (CENED-OD-R, 1 Oct 87; CENED-OD, 4 Mar 88; Regulatory Branch, 12 Apr 88; CENED (undated copy); CENED-OD-R, 4 Mar 91)

C. The protocol referred to throughout the rest of the text is New England's most recent adaptation to the 1987 Manual (CENED-OD-R, 9 Sep 91). While this protocol is not explicitly described in the 1987 Manual, it is consistent with the manual and does not alter the basic approach for making wetland determinations, i.e. the determination is based upon the dominant plant species, soil characteristics and hydrologic characteristics of the area in question, see 1987 Manual, Part I, Para 23.

In the spirit of Regulatory Guidance letter 90-6, Para 6, (HQ, USACE, 14 Aug 92), the protocol ensures documentation that is complete, accurate and substantiates the Corps decision. The comments by the Wetlands Research Team (CEWES-ER-W, 3 Feb 92), are credible testimony to the technical strengths of the New England protocol.

D. The regional protocol was never imposed upon the regulated sector; in practice, we are open-minded and prepared to acknowledge any reasonable boundary which is supported by sound sampling procedures and is clearly and accurately recorded. Our organizational framework permits us to commit a wetland scientist specializing in delineations to verify the accuracy of less traditional approaches.

E. The New England dataform also allows reasonably accurate replication of the delineation at a future date. The minimal performance standards have fostered a competitive market for data collection services while permitting the Corps to use its manpower most efficiently. Over the years, this Division has openly solicited comment and suggestions from all interested or affected persons and distributed copies of draft protocols to Regulatory staff in OCE and elsewhere.

F. The New England Division has resolutely kept the regulated sector well-informed and encourages them to offer comments and suggestions. Through numerous professional societies, our outreach program has enabled us to offer hands-on field training to more than 500 wetland professionals and lay persons.

3. <u>REGIONAL PERFORMANCE STANDARDS AND SUPPLEMENTAL DEFINITIONS FOR USE WITH THE 1987 CORPS MANUAL</u> -- There are many voids, omissions and complexities in the 1987 Manual which require supplementation and clarification before the manual can be applied consistently and fairly in the northeast. The following discussion relates to standards and supplemental definitions (in smaller font). Many of these standards and terms were distributed by New England Division in correspondence with the public dating back to 1987 and in a public notice dated July 4, 1989.

A. KNOWN STATION -- an easily recognizable, accessible and reasonably permanent cultural or natural feature used as a reference point for horizontal survey control and included with the plan of the project site. A known station must be available within 1000 feet of recorded observation plots. Where such reference points are not available, known stations should be established by land survey, visibly marked and illustrated on the plan view. The land survey must be verifiable with an accuracy of 1/500 ratio of error.

This ground control feature is not mentioned in the manual, but is consistent with the reproducible standard explicit in RGL 90-6, Para 6. The accuracy of a scaled drawing of the wetland boundary is not verifiable without sufficient ground controls. In the past, without a KNOWN STATION, the sites used for data collection were commonly unrecoverable.

B. BASELINE -- A wetland survey control feature used to establish and recover locations of transects and observation points. It is usually parallel to the water course or perpendicular to the hydrologic gradient. The length of the baseline may be used to guide the minimum number of transects.

A precise definition of the term BASELINE is not offered in the manual; yet, it is commonly referred to in Part IV of the manual. The frequency of inquiries regarding the concept precipitated our definition of the term.

C. TRANSECT -- A line on the ground along which observation are made. Transects are used to represent conditions along the boundary of federal jurisdiction. The number of transects must be sufficient to insure that all plant community types in the impact area along the wetland/non-wetland interface are revealed in the sampling. Generally, transects will be sampled at a rate of 3 per linear mile of baseline and increase at a rate of 1 transect per additional 0.5 mile of baseline length. Ideally, the intervals between transects should be equal; however, this consideration is subordinate to the stated need to sample all plant community types and represent conditions in close proximity to the areas of the most direct impacts.

A very high volume of inquiries from consultants and applicants persuaded us to supplement the definition of the term TRANSECT clarifying the concept, use and ideal frequency.

D. OBSERVATION PLOT -- Sites along a transect where the details about vegetation, soils and hydrology are observed and recorded. Minimally, one observation plot upgradient and another downgradient from the wetland boundary will be recorded. Together, these two points are the delineator's reasoning behind his wetland boundary. Consequently, it's important that these plots are fair representations of the site conditions along the boundary. It's also important that the two documented plots can be recovered and confirmed by the authenticating agency. Ideally, the centers of these 2 plots should be in the range of 5 to 15 feet from one another. Record plot locations must be recoverable from a known station.

The manual does not have a term with a precise definition to describe the point used to represent the soils, plants and hydrology. This term and the implicit method have eliminated a great deal of confusion and excessive effort.