

Comments of the Independent Peer-Review Team for the Draft Eastern Mountains and Piedmont Regional Supplement to the 1987 Corps of Engineers Wetland Delineation Manual, and Responses by the Corps of Engineers and the Eastern Mountains and Piedmont Working Group

Comments and recommendations developed by the peer-review team are given in Columns A through E of each spreadsheet page (click the tabs below). Responses developed by the US Army Engineer Research and Development Center (ERDC) and the Eastern Mountains and Piedmont Working Group are given in Column F.

Members of the Independent Peer-Review Team were:

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The Corps of Engineers thanks all reviewers for their helpful and well-reasoned comments.

Chapter 1

Initials	Ch	Pg	Par	Comment	Response
Chris Huysman - CH	Abstract			Put definition of wetlands under 1987 manual into intro para 3 - either by reference or explicitly	The Corps/EPA definition of wetlands is presented in the 1987 Corps of Engineers Wetlands Delineation Manual (i.e., the Manual) and does not need to be repeated in the supplement. That definition has not changed.
McCanna - MM	Contents			Add a list of figures and tables to table of contents	This will be done by ERDC editors before publication.
Team	Preface			Add peer review panel to preface: John Brooks, Thomas Colson, Chris Huysman, Melissa McCanna, Richard Reaves, Kevin Seaford, Michael Wood.	We will make the recommended change.
Team	Preface			Recommendation to reader to completely fill out data sheet.	This suggestion seems premature for the Preface.
MM	Intro	1	1	Use consistent citing for 404 and Section 10 within document, i.e. the first time it is used cite the acts in their entirety and then in parenthesis put how you will refer to them in the rest of the document. There are currently inconsistencies.	The relevant sections of U.S. Code are cited in the first paragraph for both the Clean Water Act and Rivers and Harbors Act. Subsequent wording uses the names of the Acts or the relevant sections, which are also stated in paragraph one. This seems clear.
CH	Intro	1	2	Last line in para - add Clean Water Act to statement about jurisdiction	Again, the exact meanings of "Section 404" and "Section 10" are given in paragraph one. The suggested change seems redundant and unnecessary.
MM			2	Will National Advisory Committee exist forever? If not should that citation for comments be included.	The National Advisory Team will continue in its role after the initial versions of the supplements have been published. The Team will receive and act on future proposals for changes to the supplements.
	Throughout Manual		General	Define terms the first time they are used regardless of their inclusion in the glossary. Consider including definition of terms that are defined in the 87 Manual and those definitions that are no longer valid.	In most cases, we have attempted to define technical terms as they are used, especially if those terms were not used in the Manual. However, we did not wish to duplicate the Manual's full glossary in each regional supplement. As implied in the comment, many of the 1987 Manual's definitions are no longer used. They will be updated when the Manual is revised and republished.
MW	1	4	1	Last line, change "northeastern areas" to "northeastern portions"	We will make the recommended change.
John Brooks - JB	1	4	map	Map is very general. It does not accurately display the coastal plain vs. piedmont around Richmond, Virginia, as I-95 is typically used as a line of demarcation. The pixel split for Richmond extends into the coastal plain. It is not. Move the pixel for Richmond.	The map is intended to be a general depiction of the region. In reality, climatic, physiographic, and ecological boundaries are not so abrupt. As explained in text, the region boundary in the vicinity of Richmond is actually the Fall Line, which is a zone of change and not a line. For all practical purposes, Richmond lies on the Fall Line. We will tweak the location of the point on the map, but users should read the text before deciding which supplement to use.
Kevin Seaford - KS	1			Suggest obtaining downloadable GIS data for regions, and NWI layers	GIS layers for the supplement regions are available upon request from ERDC. However, region boundaries are derived from USDA Land Resource Regions (LRR) and Major Land Resource Areas (MLRA). GIS layers are available at http://soils.usda.gov/survey/geography/mlra/index.html . NWI boundaries are simply state lines.
CH	1	4	sect 1	Also suggest other references, such as the USDA NRCS soils manual for the delineation of Piedmont vs. Mountain vs. Coastal Plain. Hydric soil indicators should be used to delineate the subregions and included on the map	We do not know what is meant by the "USDA NRCS soils manual." In effect, the subregions do coincide with differences in hydric soil indicators, because they are based on USDA LRRs, which are also used to regionalize hydric soil indicators.
MW	1	5	para 2	First line, remove "in the region"	We do not agree. The statement deals with this region and would be incorrect for other regions.
MW	1	5	para 3	Remove "in the Eastern Mountains and Piedmont Region"	We do not agree. The statement deals with this region and would be incorrect for other regions. Furthermore, these introductory paragraphs are similar in structure and content across all 10 regional supplements and allow users the opportunity to compare the characteristics of adjacent regions. From a national perspective, we think this wording provides added clarity. The only disadvantage is a little redundancy.
MW	1	5	last para	Line 12 - change "the Appalachians, northern hardwood forests are present, characterized...." to the Appalachians are northern hardwood forests, characterized...."	We will revise the sentence.
MM/MW/Richard Reaves - RR	1	5	general	Include more information on soil orders similar to the Coastal Regional Manual. Recommend referencing it in Intro and adding more information on soils in the Hydric Soil indicator section.	We will make the recommended change, although we generally try to avoid details of soil taxonomy in regional supplements because they are not needed to perform wetland delineations.
JB	1	5	last para	Remove "eastern hemlock". It is no longer in the region	We do not understand the comment. Tsuga canadensis is found throughout the eastern portion of the region.

Initials	Ch	Pg	Par	Comment	Response
RR	1	6	2	First portion of the sentence "subregion receives 37 to 45 in (940 to 1,145 mm)" is misleading --- Richmond, Virginia has an average yearly rainfall of 46+ inches	The statement is a general one for all of MLRA 136 and the source is cited. Some locations in the subregion may differ, particularly a borderline location like Richmond.
CH/JW	1	6	general	This section deals with broad types and distributions and one does not pick up the differences within these types from the broad definition. In that it is the introduction, perhaps that is acceptable but the section needs to be more consistent, either more general throughout or more specific.	We will consider specific recommendations for changes.
MM	1	6	general	Is HGM the reference for the other Regional Manuals? If not, why reference it in this one? The manuals should be consistent and this group finds the reference confusing.	Basic terminology from the HGM wetland classification (i.e., depression, slope, flat, fringe, etc.) is used in all regional supplements even if the original reference is not cited.
TC	1	6	2	"Southern Piedmont (MLRA 136 of LRR P)" This section does not discuss the extreme variability and unusual hydrologic conditions found in the Triassic Basin. Text should include statement about unusual hydrologic conditions that influence hydroperiods.	We have cited the source of our information and it does not include any special features of the Triassic Basin. We would appreciate any additional relevant information or references.
TC	1	6	para - sentence 1/"Types and Distributions and Distribution of	"Wetlands occupy a small proportion of the landscape within the Eastern Mountains and Piedmont Region (Dahl 1991, Bales and Newcomb 1996, Darst and Light 1996, Haag and Taylor 1996) but are widespread in distribution." This statement is wrong. Wetlands can be very large, prevalent, and exist in great numbers in the Eastern Mountains and Piedmont and in many areas, occupy a substantial part of the landscape. Suggest not using this citation.	We based this general statement on published literature and experience in the region. It is intended as an overview and may not reflect every local area. We have cited a few examples of exceptions. Compared with the adjacent coastal plain, for example, wetlands are not very large or abundant in the region.
Team	1	6	and Distribution of	Move the types and distribution of wetlands into the section on physical and biological characteristics of the region that begins on page 4. In this way you incorporate the types and distributions into each section and clarify the soil issues	For consistency and ease of use, this supplement is organized as all previous regional supplements have been. This is advantageous for any user who works in more than one region.
MW	1	6	5	Change "are forested today" to "is forested today" - tense issue	The sentence has two subjects, "55 percent" and "25 percent," which suggests that "are" is appropriate. The ERDC editors will make the final decision.
TC	1	7	1 - continued from prev pg	line 2 to 4 "...but most wetlands in the region are relatively small and may not even appear on large-scale data bases, such as National Wetlands Inventory maps or county soil surveys (Roberts et al. 2003)". This statement is also misleading. There are many large-scale wetland complexes in the region. In addition, other data sources should be cited here, most notably, SEGAP. Add "sparse" to description	The statement in the supplement acknowledges that notable concentrations of wetlands exist in some areas, but many wetlands in the region are small and scattered. We think this is useful information for new wetland delineators who may put too much reliance on mapping data. However, we will modify the wording to avoid the impression that all wetlands are small or isolated. It is not the intent of this section to list sources of land-cover data.
MW	1	7	4	Change "distinctive zones" to "distinct zones"	We will make the recommended change.
MW	1	7	5	with respect to "greenbriers" consider listing name as "greenbriers, (Smilax sp)"	We will make the recommended change.
TC	1	8	3	"Slope wetlands occur throughout the Eastern Mountains and Piedmont Region and are common in most areas. " This paragraph is confusing. The geomorphic position of slope wetlands is given as at the base of hills, broad level valleys, yet...."Slope wetlands often occur above the headwaters of streams but, in some areas, wetland conditions may continue down-gradient for considerable distances along shallow drainageways in otherwise upland landscapes.". The average reader will be confused as the "picture" they interpret of a slope wetland. Give clearer examples and landscape positions.	Slope wetlands by the HGM definition are maintained by shallow groundwater that flows laterally down gradient. Slope wetlands are common on hillslopes and in riparian headwaters not affected directly by the stream. We will reword the description.
TC	1	8	3	Second sentence, "...small areas at the bases of slopes where groundwater discharge occurs throughout the year often are called "perennial seeps...". Perennial seeps can occur well upslope of the base of a slope, particularly in the Eastern Blue Ridge Foothills. Text should encompass all the likely landscapes were a perennial seep may occur.	We will make the recommended change.
CH	1	8	3	Last sentence, remove the word "bog". It is unclear.	Bogs are maintained mainly by precipitation. The point here is that the local use of the term "bog" does not describe the true origin of these slope wetlands. The section assumes some familiarity with wetland terminology.
MW	1	9	4	2nd line - remove " that falls onto the site"	We will make the recommended change.
MW	1	9	5	1st line - remove "within the region"	We do not agree. The statement deals with this region and would be incorrect for other regions.
Team	1	general	general	Remove reference to HGM. It is confusing	Basic terminology from the HGM wetland classification (i.e., depression, slope, flat, fringe, etc.) is used in all regional supplements even if the original reference is not cited.

Initials	Ch	Pg	Par	Comment	Response
Team	1	general	general	When using common names for plants, be clear. Use USDA Plant Website (http://plants.usda.gov/) for consistency of the use of common names and the correlation to Latin names (i.e. genus species).	We try to be consistent in the use of common names and generally use the common name suggested by the USDA Plants database; we will re-check all common names. We use the latest Latin names specified by the USDA Plants database, giving synonyms that were used in the 1988 wetland plant lists, where appropriate.
JB	1	general	general	Common names make sense for a Regional Manual but be clear, consistent and use citation in preliminary usage.	See the previous response.
CH	1	general	general	Be more specific in terms of what is included in the sections in the introduction - Remember that it is an introduction.	We do not understand the comment.
Team	1	general	general	Primary and secondary indicator distinctions are cloudy. Can we clarify distinction between?	See Chapter 4 on wetland hydrology indicators.
TC	1	9	1st full	3rd sentence "...floristically complex...". This choice of words will confuse entry-level readers. Should read "...diverse in vegetative strata..." or words and phrases that are used elsewhere in the manual to describe vegetation communities.	We will make the recommended change.
	1	9	3	Flat wetlands occur in Virginia, and are called a "Slash" defined as a high flat wet area. This should be added to this paragraph.	We will make the recommended change.
?	1		last 9 para	White oak and white ash are FACU species according to the USDA plant list and the sentence that includes them does not accurately state this as it refers to them collectively as "Facultative". Bitternut Hickory is FACU as well as FAC depending on the region. This sentence should be revised to reflect this. Otherwise this sentence is confusing and not accurate. Including Fac U species (i.e. white oak) in the list of facultative species is confusing. If it is a list of fac species, include only fac - no facu or facw	The paragraph used "facultative" in the common sense and not with regard to wetland indicator status. We will reword it.
TC	1	10	1	"North Carolina, for example, has no natural lakes outside of the coastal plain, but over 100 reservoirs exist in the Piedmont and Blue Ridge Provinces (Bales and Newcomb 1996). Many reservoirs are very large, with hundreds of miles of shoreline, and contain numerous fringe wetlands, especially in shallow embayments...Fringe wetland communities may vary substantially over time given water-level variations in lakes and reservoirs due to rainfall patterns, changing management goals, demands for hydropower production, and other factors." No mention of beaver ponds is given, which constitute a major portion of the wetlands found in the region. Another paragraph should address the types of habitats formed by beaver ponds, fluctuating water levels, and potential (or lack of) transition to upland habitat when drained for "...changing management goals...".	We will mention beaver ponds as another place where fringe wetlands exist.
CH	1	6 to 10		Remove the section entitled "Types and Distributions of Wetlands". or make it more general, or incorporate it into the section entitled "Physical and Biological Characteristics of the Region". Elaborate on the nuances in the hydrophytic vegetation or soils section of the supplement.	For consistency and ease of information retrieval, this supplement is similar in organization and content to the previous nine regional supplements.
MW	1	general		Overall, these two parts (Intro and Ch 1) are well-written and easy to read. However, none of the citations that suggest size and number of wetlands refer to work that studied the extent of wetlands using federal jurisdictional rules in the strict context of the '87 manual or "significant nexus" rules. This manual is meant to assist the reader in determining the jurisdictional boundary of a wetland using a strict standard and a high-degree of application of scientific and regulatory knowledge. The text of this manual should adopt a more neutral tone when suggesting how many, what size, and where wetlands will be found.	This supplement addresses all wetlands, without regard to their jurisdictional status. Statements about wetland abundance and distribution come from the National Wetlands Inventory (NWI) and other general sources, and are not intended to reflect regulatory policy.
MW	1	general		Throughout the introduction, check consistency - currently inconsistent in capitalizing Piedmont and Coastal Plain (consistency issue applies to entire manual)	We will capitalize these words except when they refer in general to a geologic piedmont or coastal plain.

Eastern Mountains and Piedmont Regional Manual,
Chapter 2 Comments

				Chapter 2	
Initials	Ch	Pg	Par	Comment	Response
KS	2	general	general	Why is "Indicator 4: Morphological Adaptations" included in this supplement and not the coastal plain supplement?	Each regional working group selects the indicators that are appropriate to the region. Therefore, lists of indicators vary by region. The Coastal Plain group determined that plant morphological adaptations were too widespread across the landscape, particularly in Florida, to be reliable wetland indicators.
Team	2	11	2	Remove reference to history of developmental FL - Keep first two and last sentences.	To help orient new users, regional working groups nationwide have chosen to include a brief summary of the origin and development of the regional flora in the introduction to Chapter 2. For consistency, we prefer to keep these few sentences although they are not critical to wetland identification.
RR	2	11	general	Recommend adding in a list of current regional taxonomic sources that are ore up-to-date, along with listing the older ones that are still in substantial use to supplement the list in the 87 manual which is dated and not region specific. As a starting point: Plant Life of Kentucky: An illustrated Guide to the Vascular Flora. 2005. Ronald L. Jones. The University Press of Kentucky; The Plants of Pennsylvania: An Illustrated Manual, Second Edition. 2007. Ann F. Rhodes and Timothy A. Block. Unniversity of Pennsylvania Press; Steyermark's Flora of Missouri. Volume 1, Revised Edition. 1999. G. Yatskievych. The Missouri Department of Conservation in cooperation with the Missouri Botanical Garden; Steyermark's Flora of Missouri. Volume 2, Revised Edition. 2006. G. Yatskievych. Missouri Botanical Garden Press in cooperation with the . The Missouri Department of Conservation; Vol 3 will be out in a few years and is partially available online; Flora of the Carolinas, Virginia, and Georgia, and Surrounding Areas, Working Draft of April 8, 2009. Alan S. Weakley. UNC Herbarium, North Carolina Botani	We appreciate the great list of references. However, it is not the purpose of the supplement to list the many floras and guidebooks that cover the region.
TC	2	11	1	Reorganize the paragraph to start with the third sentence, "Hydrophytic vegetative decisions are based on" and finish with the first sentence, "The 87 Corps Manual defines...."	The paragraph sets the stage for the Clean Water Act concept of hydrophytic vegetation by presenting, first, a definition and, second, the role of indicators. Again, this presentation is consistent with other regional supplements.
MW	2	11	1	First line, delete the word "present"	We disagree. The 1987 Manual's concept of hydrophytic vegetation centers on the presence and abundance of particular plant species, rather than more subtle effects of inundation or saturation on plants. Plant species presence or occurrence is important.
MW	2	11	2	Third line, delete "existing"	We will make the recommended change.
MW	2	11	3	Last 2 lines should read "occurrence of non-native "weedy" species in the flora." The last line should read "Estimates of the percentage of non-native species range from 22 percent to 37 percent."	We will make the recommended change.
MW	2	11	4	2nd line, delete "in the region"	We will make the recommended change.
MW	2	12	1	3rd sentence, delete "primarily"	We disagree. Many wetlands are dominated by FACU species, that is, one or more dominant species are FACU. This is not a problem to wetland identification if they are outnumbered by other dominants that are OBL, FACW, or FAC. But some problematic wetland types are dominated "primarily" by FACU species.
TC	2	12	1	Begin first full paragraph with "The Corps Manual defines hydrophytic vegetation as the community of macrophytes that occurs in areas where inundation or soil saturation is either permanent or of sufficient frequency and duration to exert a controlling influence on the plant species present." Then continue.	We disagree. For emphasis, we presented the definition as the first sentence in the Introduction to the chapter. At this point in the section, we are getting down into details of hydrophytic vegetation decisions.
JB	2	12	2	4th sentence needs clarification. Suggest rewriting to "Where FACU species dominate an area with hydrophytic soils and positive indicators of wetland hydrology, the investigator must document other hydrophytic vegetation indicators, such as morphological adaptations to living under prolonged conditions of soil inundation or saturation."	The suggested revision focuses on only one alternative, the use of the "morphological adaptations" indicator. Other alternatives include the prevalence index and various approaches for problematic hydrophytic vegetation discussed in Chapter 5. The sentence in question was only intended to alert the reader that other indicators and procedures exist beyond the well-known dominance test. However, the reader must read further for the details. We cannot explain all the options in this introductory paragraph.

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Chapter 2 Comments

Initials	Ch	Pg	Par	Comment	Response
Team	2	12	4	This may be done in advance using a CURRENT aerial photograph or topographic map AVAILABLE ON LINE, or by walking over the site." Add words in capital letters. Then add an example of how to do this, e.g, detect change in vegetation community in air photo by comparing like-colored pixels, etc.	We will revise the sentence but prefer not to add the example. It is not the purpose of this supplement to provide guidance on aerial photo interpretation. Other sources of information or expertise should be consulted, if needed.
MW	2	12	2	Hydrophytic vegetation decisions are based on the wetland indicator status (Reed [1988] or current approved list) of species that make up the plant community. Species in the facultative categories (FACW, FAC, and FACU) are recognized as occurring in both wetlands and uplands to varying degrees. Although most wetlands are dominated mainly by species rated OBL, FACW, and FAC, some wetland communities may be dominated primarily by FACU species and cannot be identified by dominant species alone. In those cases, other indicators of hydrophytic vegetation must also be considered, particularly where indicators of hydric soils and wetland hydrology are present. This situation is not necessarily due to inaccurate wetland indicator ratings; rather, it is due to the broad tolerances of certain plant species that allow them to be widely distributed across the moisture gradient. The statement that some wetland communities may be dominated primarily by FACU species appears inconsistent with the 87 Manual.	The 1987 Manual recognizes a number of ways that "FACU-dominated" wetland plant communities can be identified. First, it provided a number of alternative hydrophytic vegetation indicators (i.e., visual observation of plant species growing in areas of prolonged inundation and/or soil saturation, morphological adaptations, technical literature, physiological adaptations, and reproductive adaptations). In addition, Section IV, F (Atypical Situations) discussed natural and human disturbance and Section IV, G described various Problem Area situations. The supplement provides more regional examples, along with suggested approaches for dealing with them, but does not go beyond the original intent of the 1987 Manual.
MW	2	12	4	2nd line, delete "over"	We will make the recommended change.
MW	2	12	last	1st line, change to read "...possible to locate at least one plot in a way...."	We will make the recommended change.
TC	2	13		The definition of relative and absolute and DBH should be in this paragraph/section with an example from the wetlands indicators book to clarify.	Absolute cover is defined in the glossary to the supplement. That definition also contrasts relative cover, but we do not provide a separate definition because we do not recommend or want to emphasize relative cover. Diameter at breast height (DBH) is defined in the glossary of the 1987 Manual. In general, the supplements do not repeat the 1987 Manual's extensive glossary.
TC	2	14	general	For hydrophytic vegetation determinations, the abundance of each species is determined by using areal cover estimates. A better explanation of what "areal" means with examples, is needed here. Those learning the "trade" are not always familiar with the vegetative terminology.	See the definition of absolute cover in the glossary. In addition, we provide five references for vegetation sampling in Table 2. Those references provide more detail than we can dedicate to the topic in this supplement.
RR	2	14/15	general	Add explanation that "any time the sample plot would exceed the size of the wetland, it is necessary to characterize all vegetation in the wetland."	Outside of a few vernal pools and wind throws, this is an unusually small wetland size. However, it seems obvious from the discussion in the supplement that the plot must fit entirely within the wetland, and considering the entire wetland is an option.
	2	15	1	Line 8, replace "parallels the stream" with "parallels the linear feature". While true in most cases, not all linear wetlands are associated with streams.	We disagree. This scenario in the supplement is just an example and seems straightforward. We would rather not risk confusing readers with "linear feature" instead of "stream."
MW	2	15	3	Last line, delete, "in any case,"	We will make the recommended change.
	2	15	4	Change " In this supplement" to "For use of this supplement"	We prefer the shorter construction, and the meaning is the same.
TC	2	15	4	Clarify the statement, "For percent cover estimates, plants do not need to be rooted in the plot as long as they are growing under the same soil and hydrologic conditions" There is the potential to determine "no jurisdiction" based on observation of a ring of FACU around their plot (but not in). Does the canopy need to extend within the plot, but not the roots? If so, what percentage of the canopy? Is dripline used to define this?	All the recent regional supplements give this guidance and the comment makes it unnecessarily complicated. The guidance is a practical approach that does not force people to imagine away certain plants whose canopies overhang the plot but are not rooted there. And it simply doesn't matter to the determination, as long as our purpose is to compile data that link specific soil, vegetation, and hydrology conditions. It only matters if something different is happening (in soil, hydrology, and/or vegetation) immediately beyond the boundaries of the plot. If that were the case, those conditions should be sampled separately. The guidance in the 1987 Manual and the supplement also says that you should be sampling a "representative" location. If you are, then you would not have a ring of FACU species surrounding your plot unless they represented a different "community." In that case, you SHOULD delete their overhanging canopies from the plot. Sampling is based on observable plant canopies and not hidden roots. Any portion of a plant's canopy counts if it is in the plot. We can't plan for all the ways that untrained individuals might err in making wetland determinations.

Eastern Mountains and Piedmont Regional Manual,
Chapter 2 Comments

Initials	Ch	Pg	Par	Comment	Response
KS	2	15	3	Last sentence, the reader is referred to the section on Hydrophytic Vegetation Indicators. This reference needs to include section numbers or a page number for the reader to turn to page 17.	We try to avoid unnecessary internal references to page numbers because these shift in various drafts and require added care in the final published version. In this case, the section heading on Hydrophytic Vegetation Indicators is easy to find and appears in the Table of Contents.
TC	2	16	1	Add the following to the last sentence: "...These sources include not only leaf-ID guides, but twig and bark guides as well. "	This sentence doesn't follow the logic or content of the paragraph. Did you intend to suggest it be inserted somewhere else?
MW	2	16	2	Reorganize the paragraph to add "preliminary delineations, made using off site indicator data, are not acceptable for regulatory purposes.	The supplements are technical documents and generally do not address issues of policy or permitting procedures. In general, districts will use the best information available to make decisions within their time constraints.
MW	2	17	2	Maintain consistency with the notation for the plant list, i.e. for scientific / common names and facultative status.	We agree but do not understand how the comment pertains to the specified paragraph.
	2	17	2	Need a provision instructing user to rely on the primary literature for habitat requirements of species that are newly described to science. Primary literature will include the species description and will discuss the habitat(s) in which it occurs. Where available, this is more scientifically defensible than treating as a problem situation.	We agree that primary literature is preferable but would not exclude secondary literature if the information therein is relevant. In these situations, the user must decide on the relevance of the information and build a case. The use of technical literature to evaluate NI, NO, or unlisted plant species is discussed in Chapter 5 because it goes beyond the routine use of indicators to evaluate vegetation.
TC	2	17	general	Remind the reader that there is no requirement to look at secondary vegetative indicators unlike in soils and hydrology parameters.	There are no secondary indicators given in the supplement for either hydrophytic vegetation or hydric soils. A reminder is unnecessary because there are none to use.
JB	2	17-20	general	Include a flow chart to enhance the explanation.	A flowchart seems redundant and unnecessary in the supplement because there are only 4 steps in this procedure and the sequence is clear. A flowchart could be useful in classes as a training aid, but primarily as a graphical replacement for the written procedure rather than in addition.
KS	2	19	general	As with the statement cautioning users about shallow roots, add a statement cautioning users about buttressed trunks and tree diseases (cankers). The Chestnut blight (<i>Cryphonectria parasitica</i>) is a fungus that causes cankers on <i>Quercus coccinea</i> , <i>Quercus rubra</i> , and <i>Quercus stellata</i> in the Appalachian region. It is common for the fungus to cause the base of the trunk and stump to swell in <i>Quercus coccinea</i> . Also, some species have shallow roots that are unrelated to soil hydrology or saturation. It is common for <i>Fagus grandifolia</i> to exhibit shallow and surface roots. I've heard several people describe <i>Fagus grandifolia</i> as having buttressed roots even in very well drained soils. Examples from Tyner would be helpful to illustrate this for the user.	We will add a sentence about chestnut blight.
MW	2	20	3	Maintain consistency by adding absolute in sentence so that it reads, "Calculate the absolute coverage of all species in the stratum (i.e., sum their individual percent absolute cover values....."	We will make the recommended change.
RR	2	21 - 22	User no	Recommend allowing use of prevalence index based on cover of the collective sedge group when it is not possible to speciate. Recommend using a FACW value for wetland sedges and FACU values for non-wetland sedges, as a conservative method. This would avoid the situation where someone randomly picks sedges known from the area to fill out the form and get a number. Based on point that it is nearly impossible to speciate sedges during much of the year (except for a very small handful of folks) but it is easy to distinguish wetland-associated sedges from upland-associated sedges while in vegetative state.	This is an interesting approach to the problem of identifying sedges. However, one could make this argument for many other taxa. By using the suggested approach, we would lower the bar on vegetation analysis, inviting criticism and challenges. We don't believe this represents sound practice.
MW	2	23	1	End with "in wetlands" not "in wetland areas".	We will make the recommended change.
MW	2	24	3	3rd sentence delete "present"	We think the current wording is clearer.
TC/Tear	2	general	general	Overall: Section could use more photos and graphics, especially of examples of morphological adaptations.	Additional examples of morphological adaptations are given in Appendix C of the 1987 Manual.

Chapter 3 Comments

				Chapter 3	
Initials	CH	Pg	Par	Comment	Response
Team	3	25	1	Statement, "In the upper part is too ambiguous. Change to "within top 20" unless the statement is intended to be vague.	No change can be made to the definition of a hydric soil, which was developed by the National Technical Committee for Hydric Soils (NTCHS) and published in the Federal Register. For this definition, the upper part means 6 in. for sandy soils and 12 in. for all other soil textures.
CH	3	25	2	Line 3 -strike sentence - it is confusing	We are not sure what is confusing. This is an important concept in hydric soils and needs to be included. No change is needed.
KS	3	25	Genera 1	Provide a better definition for distinct and prominent. For example, on page 62, the last sentence under User Notes, the user is referred to the glossary for a definition. In the glossary, the definitions of both words refer the user to the definition of contrast, which then refers you to the NRCS. Since distinct and prominent are used frequently in the hydric soil indicators, it would be beneficial to provide definitions. In the above example, instead of referring users to the NRCS. direct reader to page 137.	The glossary definition for "contrast" already refers users to Table A1, which is on page 137 of the draft. We prefer to avoid internal references to specific page numbers because these shift in various drafts and require added care in the final publication.
KS	3	25	Genera 1	Add a figure that clearly illustrates other landforms (see page 29, paragraph 6 and page 30, figure 6.)	We provided figures to illustrate "toe slope" and "convergent slopes" because the terms are not widely known. The other relevant landforms (e.g., depression, floodplain, etc.) are widely understood and do not require illustrations in the supplement. The supplement is a field manual and is not intended to be a comprehensive treatment of background knowledge in geomorphology or other subjects.
RR	3	25	2	Insert paragraph stating: "The Corps Manual identifies certain situations where hydric soils may be assumed without identifying specific hydric soil indicators. Please refer to page 48, Steps 3 and 4, in the Corps Manual for the discussion of this process."	The proposed sentence is true but not needed in the supplement. This portion of the 1987 Manual is still in effect and has not been superseded by the supplement. Users should continue to follow the steps involved in either the routine or comprehensive methods described in the 1987 Manual.
MM	3	25	4	Last sentence, "Although an indicator...in the transition to an adjacent subregion." remove "in the transition"	It is not the intent of this sentence to allow hydric soil indicators to be applied throughout a subregion or region where they have not been approved. The sentence allows the use of an indicator only in the transition to an adjacent subregion. The width of the transition zone is not specified and is left to the user to justify. No change is needed.
MW	3	26	1	3rd sentence - strike "often" add "may"	We will make the recommended change.
CH	3	26	2	Last sentence, change "organic carbon" to "organic matter"	We do not understand the reason for this change. No change is needed.
CH	3	26	5	Add sentence to add "typically dominated by upland species" just before "folistic surface layers".	The suggested change refers to vegetation and has no relationship to hydric soils or relevance to this section. No change is needed.
MW	3	27	1	Strike "material" add "soils" in first sentence	We do not understand the reason for this suggested change. The paragraph discusses various soil materials, more than one of which may be present in any particular soil. No change is needed.

Chapter 3 Comments

MW	3	27	1	Strike word "material" after word "soil" and change last sentence ..."If the material is an organic soil a further division..."	See the previous response.
MM	3	27	2	Stike word "Often" in 2nd sentence and add "may" after "features" put "may have diffuse boundaries..." and add "May" to "have sharp boundaries"	We will revise the text according to emphasis given in the source (Vepraskas 1992).
Team		28	2	Add a figure that clearly illustrates other landforms (see page 29, paragraph 6 and page 30, figure 6.)	We provided figures to illustrate "toe slope" and "convergent slopes" because the terms are not widely known. The other relevant landforms (e.g., depression, floodplain, etc.) are widely understood and do not require illustrations in the supplement. The supplement is a field manual and is not intended to be a comprehensive treatment of background knowledge in geomorphology or other subjects.
	3	29	General	Delete "close" as modifier for proximity. It is redundant	We will reword the sentence.
RR	3	29	5	Add question under "hydrology" for "Is a springhead present?" add more examples of "landforms" since data form requires it, or add another figure.	We will add springs to the examples. The working group considered citing or duplicating some standard landform classification from the literature, but could not find one that seemed appropriate. Rather than developing a new classification, we rely on the user to describe the site in his/her own words.
RR	3	29	bullet list	Strike second sentence - not necessary	It is not clear which sentence is indicated. We do not see any unnecessary sentences. No change is needed.
RR	3	31	3	Change sentence to read, "Significant changes in the parent material (i.e. lithologic discontinuities) can affect..."	We prefer the existing wording because changes in parent materials and lithologic discontinuities are not necessarily the same thing.
RR	3	31	last	3rd sentence strike "they" and add "Mapping Units" if in fact that is what you are talking about - otherwise define "they"	We will make the recommended change.
team	3	32	1	Move last senece into the paragraph above at the end of soil survey - and add to the end, "and areas mapped as hydric can include non-hydric soils".	Actually, that is what the existing sentence is intended to say. We will try to clarify it.
CH	3	32	2	"Individual strata are dominantly less than 1 in. (2.5 cm) thick." This statement seems to be written incorrectly and should be clarified. Was "typically less" intended rather than "dominantly less"?	This sentence is on page 39, not 32. It is correct as written by NTCHS.
RR	3	39	3	Delete sentence beginning "Organic soil material is called..." this has already been discussed and repetition is not needed.	We agree that it is redundant. However, each User Note needs to stand alone because the user may not read the background material, or may need to be reminded. The working group felt that this information should be repeated. No change is needed.
RR	3	41	3	User Notes. There is no mention regarding if this indicator is or is not useful in the wetland/upland boundary as in the coastal supplement - consistency issue since the user will be looking for guidance on this issue.	The first sentence addresses this issue. No change recommended.
TC	3	38	4	Define "fragmental soil material"	"Fragmental soil material" is defined in the Glossary. No change necessary.
RR	3	41	bullet list	Recommend adding "Approximate" to start of caption to allow for mapping errors. Add this throughout for figure captions.	It is not clear to what "caption" or "mapping" this comment refers.

Chapter 3 Comments

RR	3	65	Figure caption	User Notes: reference to gleyed matrix and gray colors should be moved from F2 (where that reference is first used) to here, where gleyed matrix is first used as an indicator. Future references to gleyed matrix should then be cited to the appendix in all subsequent indicators.	Most indicators that include a gleyed matrix simply cite the Glossary for the definition. Indicator F2 is the exception. We will revise the User Notes for indicator F2, dropping the list of required colors, and simply refer the reader to the better definition of gleyed matrix given in the Glossary and Figure A2.
TC	3	42	A4	User Notes: should "...not be a relict or parent material feature" be here as well. In addition, I see many soils incorrectly classified in areas of historic disturbance, most often in utility easements, and some mention of taking care when historic disturbance is suspected should be used early in this chapter.	This comment does not seem to pertain either to page 42 or indicator A4. Many places have disturbed soils; however, it is not clear what specific problem requires a change to the supplement.
TC	3	44	A12	User Notes: should "Soils with dark gley colors (value less than 4) do not meet the definition of a gleyed matrix..." go here as in the coastal?	The sentence is unnecessary with the definition and figure in the Glossary, and probably should have been deleted from the Coastal Plain supplement as well. No change is needed.
TC	3	47	S4	it would be beneficial to users of this supplement to provide an example that is applicable to the Eastern Mountains and Piedmont Region instead of interdunal swales along the Atlantic Ocean	The only place this example was used was for S7 on page 50. We will either add a relevant example or delete the wording.
KS	3	50	last	Remove the words, "on right".	"On right" refers to the right side of the ruler. The left side is in centimeters. Therefore, "on right" is needed to determine the scale.
KS	3	51	User Notes	The words "to delineate wetlands" should be replaced with "throughout the region".	We meant that the indicator is often useful to determine the wetland boundary. We will reword the statement.
Team	3	58	F6	Recommend adding "Approximate" to start of caption to allow for mapping errors, as stated above.	The MLRA maps are not approximate. They are as defined by the USDA. If you mean that there is actually a transition zone and not a firm line between MLRAs, we agree. This was addressed in the Introduction to Chapter 3.
RR	3	65	Figure Caption	Recommend adding "Approximate" to start of caption to allow for mapping errors, as stated above.	See the previous response.
RR	3	66	Figure Caption	Need clarification on verb tense, "is" or "are". We had some discussion regarding whether the verb refers to plural modifier or singular noun subject as in "none of the indicators is (or are?) Also discussion of whether the word none is singular or plural.	The ERDC editors will check for proper subject/verb agreement.
KS	3	68	1	Recommend adding "Approximate" to start of caption to allow for mapping errors.	The MLRA maps are not approximate. They are as defined by the USDA. If you mean that there is actually a transition zone and not a firm line between MLRAs, we agree. This was addressed in the Introduction to Chapter 3.
RR	3	69	Figure Caption	Recommend adding "Approximate" to start of caption to allow for mapping errors.	We will make the recommended change.

Chapter 4

Chapter 4					
Initials	Ch	Pg	Par	Comment	Response
TC	4		General	RE-EMPHASIZE that even if a primary hydrologic indicator is found, the presence (or lack) of secondary indicators MUST ALSO BE NOTED! Caution users of this manual to document ALL indicators.	We will make the recommended change.
MW	4		Throughout Indicators Section	Be consistent. The General Descriptions are not consistent. In some instances, descriptions consist of a sentence fragment (B16) while in others they are full sentences (B4)	We agree that the wording of indicators is not always consistent. However, similar wording has been used in many previous regional supplements. Therefore, we are reluctant to reword some indicators because of the confusion it could cause among users who work in more than one region.
MW	4	71	1	Referenece to Hydrology Table in Manual would be helpful.	We do not understand what is meant by "Hydrology Table in Manual." If you are referring to Table 5 in the 1987 Manual, that table has been superseded by this supplement and is no longer in effect.
Team	4	72	1	Last few sentences cause some concern due to the subsequent definition of Growing Season, for example, in growing zone 7A you can have year round emergence of winter rye. Consider clarifying.	That is one reason why the procedure requires that at least two species in the area show signs of growth. However, from a technical standpoint, if plants are growing, it is hard to argue that you are not in the growing season.
TC	4	72	1	"wetness signatures" should be "soil moisture signatures" or "wet soil signatures"	We don't understand the reason for this suggested wording change.
CH	4	72	1	from "off site" to end of paragraph is confusing	We need a more specific comment or suggestion to consider making a change. In any case, all of these techniques are discussed in more detail in Chapter 5. This section is only intended as an introduction.
	4	71	3	3rd sentence, the phrase, "into account", should go after" climatic conditions" to read more clearly. Final should read, "it is important to take weather and climatic conditions "INTO ACCOUNT" prior to the site visit to minimize....	We will revise the wording.
MW	4	71	4	delete "also" in the first line	We will make the recommended change.
MW	4	72	Growing Season, para 2	Suggest that WETs be used as the primary source for determining a growing season. There are significant problems trying to tie temperatures to the growing season especially in mountain valleys and north facing slopes. A date certain is far better than some observations.	Problems dealing with mountain valleys and various slope aspects are reasons to abandon WETS tables as indicators of the growing season. Weather stations are almost never located in appropriate places to determine the local growing seasons in mountains. Furthermore, WETS tables are based on long-term averages and do not reflect differences in initiation of the growing season from year to year. WETS tables provide an easy date to work with, but that date is almost meaningless for our purposes.

Chapter 4

MW	4	73	1st full	Move, "The determination should not included evergreen species" to the end of the previous paragraph.	The caveat applies to both of the previous paragraphs. For consistency between regional supplements, we prefer to leave the sentence where it is.
MW	4	73	3rd para, #2.	Clarify method for measuring soil temperature. Is inserting thermo into pit to measure soil recommended or required?	The method is straightforward. "Soil temperature can be measured directly in the field by immediately inserting a soil thermometer into the wall of a freshly dug soil pit." As it says in the same paragraph, the measurement is not required and is only recommended if needed to evaluate certain indicators, such as the observation of surface water during early spring when it is not clear whether the growing season has begun.
MW	4	73	1st full	To be consistent, either add example for groups A and D if you believe there is a need to list indicators, since you list indicators for group B and C or cut them entirely	The existing examples or explanations are already adequate.
RR	4	73	1st full para after the numbered list	insert user notes above wetland hydrology saying users should be aware of weather patterns abnormal for the region. Spring ephemeral plants may germinate and bloom after the end of the growing season if conditions are proper. This should not be construed as an extension of the growing season. Certain unique habitats, such as granitic outcrop dissolution pools, exhibit winter growing seasons.	These specific examples should be adequately captured, or not, by the procedures described here, and there is information in several indicators and in Chapter 5 about evaluating normal weather patterns.
Team	4	75	table	Think about putting color into table to differentiate between secondary and primary - split is between B 4 and B 6 and highlighting will help users.	These indicators are adequately distinguished by the "Primary" and "Secondary" columns in Table 10.
CH	4	75	table	Based on the discussions on page 73-74, suggest that the following indicators be considered secondary indicators: sediment deposits, drift deposits, aerial imagery. Because, the text indicates that "... indicators are intended as one-time observations of site conditions that are sufficient evidence of hydrology..." and then the user notes go on with very well written caution notes. The amount of caveats should be an indicator that these are of secondary value.	This working group and working groups in most other regions do not agree. These indicators require care in interpretation, but if the caveats are considered, all are reliable evidence of a recent episode of inundation. The first two have been used for more than 20 years under the 1987 Manual. And aerial imagery that shows inundation is irrefutable, as long as the normality of rainfall is considered.
CH	4	75	table	Note that surface soil cracks can happen with saturation	The comment is true, but surface cracks are generally associated with inundation. Which group they are listed in does not affect their use as an indicator.
MW	4	76	General Description	Suggest creating sentence fragments in the General Descriptions - i.e. begin with just "Direct Visual...." Same recommendation throughout General Descriptions, use phrases for each. At a minimum be consistent.	We agree that the wording of indicators is not always consistent. However, similar wording has been used in many previous regional supplements. Therefore, we are reluctant to reword some indicators because of the confusion it could cause among users who work in more than one region.

Chapter 4

KS	4	77/78	1	1st sentence on page 77 but also relevant to p 78 - define water table	We will add the sentence to the User Notes for the saturation indicator on page 78. "Water table" is defined in the glossary of the 1987 Manual. These supplements do not repeat the extensive glossary in the Manual.
MW	4	77	General Description	Define, "throughflow" in this context under General Description or give example.	We will define "throughflow" in the Glossary.
KS	4	77 and 99	2	Sentence 2, change end to read, "soil properties".	We will make the recommended change.
RR	4	78	General Description	Line 5, define "episaturated" at first use	"Episaturation" is defined in the Glossary.
TC	4	79	Section B1 B2	Distinctions should be made within different flood events and normal flow in thalweg - Sediment deposits on vegetation within an active stream bed should not be confused with sediment deposits located on vegetation located outside of the top-of-bank	We don't see the reason for making this distinction and prefer not to complicate the indicator. Jurisdictional determinations within the active channel of a stream or river are usually based on the Ordinary High Water Mark and do not depend on presence or absence of wetland indicators.
Team	4	80, 81 and 85	B2, B3, B7	These should be listed as secondary indicators. Additionally, give a better definition of what makes a primary and secondary indicator. The explanation on page 74 last para is not adequate.	See the response to the comment in line 18. We will try to clarify the distinction between primary and secondary indicators.
TC	4	81	Section B3	Include the term "wrack lines" in parentheses after "drift deposits"	The dictionary definition of "wrack" implies that the material is of marine origin. No change is needed.
RR	4	84	General Description	Add description of Iron Sheen to description if it is intended as an indicator, otherwise remove the photo and discussion under user notes.	Actually, the sheen itself was not intended as the indicator, because the presence of surface water (indicator A1) is already sufficient evidence of wetland hydrology. However, previous working groups and peer reviewers requested the added photo and description of sheen. As currently written, one could record both indicators A1 and B5 if iron sheen was observed.
RR	4	85	Photo	Photo is from outside growing season. You need to replace the example with a photo from during growing season which would meet the indicator requirement.	We used the best photo we have available.

Chapter 4

TC	4	87	B13	As mentioned above, think about augmenting the definition of primary and secondary indicators and classifying these indicators - consider a hydroperiod classification and consider a test for reproduceability in terms of primary and secondary.	We have attempted to clarify the distinction between primary and secondary. In general, we rely on vegetation and soils to tell us whether the seasonal timing, frequency, and duration of inundation or saturation have been sufficient over a period of years to produce a wetland. The purpose of wetland hydrology indicators is to provide evidence that the hydrologic regime is still in effect and that vegetation and soils are not relicts of a regime that is no longer operating. Thus, hydrology indicators provide evidence of a recent EPISODE of inundation or soil saturation. Most say little about hydroperiod or other aspects of the hydrologic regime.
Team	4	88	B14	Professional judgment should be exercised to determine that the presence of true aquatic plant remains are not a result of deposition from a high flow event uprooting them from upstream. Emphasis needs to be on checking to see if the plant remains include attachment to root system, etc...	In our experience, this scenario is not common. Furthermore, it would not affect the outcome of a wetland hydrology determination. Whether the detached pieces are counted as aquatic plants (indicator B14) or drift deposits (B3), or both, the result is at least one primary indicator. Furthermore, the list of aquatic plants includes Lemna, which is not rooted at all.
RR	4	88	End of user notes	Add: Caution: There are terrestrial bladderworts and observer should be competent in distinguishing terrestrial from aquatic bladderworts to use this genus as an indicator.	We will make the recommended change.
MW	4	89	Caution and User Notes	Line 1 states, "enough to destroy surface soil structure", this statement assumes that there was once a soil structure that had been altered, which is typically not true. State "enough to prohibit the development of surface soil structure."	We will make the recommended change.
	4	90	User Note	Add: Allelopathic Vegetation (Black Walnut) can be cause of sparse understory vegetation.	We agree that allelopathy and many other factors can cause a sparse understory. However, the indicator is limited to concave positions, and the 3-factor approach involving indicators of hydrophytic vegetation, hydric soil, and wetland hydrology already ensures that areas with indicators of only one and not all three factors will not be mistaken for wetlands. Furthermore, as a secondary indicator, at least one more indicator of wetland hydrology is required. That seems like enough safeguards against errors.
MW	4	91	General Description	Consistency issue again - create a phrase rather than complete sentence and continue to create phrases	We agree that the wording of indicators is not always consistent. However, similar wording has been used in many previous regional supplements. Therefore, we are reluctant to reword some indicators because of the confusion it could cause among users who work in more than one region.

Chapter 4

TC	4	91	B10	User notes - provide clarification on stream vs drainage pattern - may be local rules that should be considered - perhaps use definition of OHW and subsurface soil sorting.	The 1987 Manual and this supplement address wetlands, not streams. Jurisdictional limits in streams are based on the ordinary high water mark, and are beyond the scope of this supplement (see Chapter 1). Drainage patterns do not include stream channels (i.e., bed and bank).
TC	4	92	B16	User notes - provide clarification on stream vs drainage pattern - may be local rules that should be considered - perhaps use definition of OHW and subsurface soil sorting.	See previous response.
RR	4	92	Caution and User Notes	Again description should include definition. Move 2nd Sentence "Trim lines on different trees in the inundated area should indicate the same water-level elevation." to General Discussion	We think this information is appropriate in the User Notes.
MW	4	93	Caution and User Notes	Change 3rd line statement, "often permanently saturated.." to "often saturated for extended periods during the growing season..."	The current statement is true.
MW	4	94, 96, 97, 98	General Description	Again, create phrases in order to be consistent by removing, "presence of" and begin sentence with "A layer..."	We agree that the wording of indicators is not always consistent. However, similar wording has been used in many previous regional supplements. Therefore, we are reluctant to reword some indicators because of the confusion it could cause among users who work in more than one region.
MW	4	99	Caution and User Notes	Line 2, insert "typically" before "indicates a normal...."	The word "indicates" already implies some uncertainty. However, we think the statement is nearly always true.
MW	4	99	Caution and User Notes	Remove texture and add "depending on soil characteristics"	We will make the recommended change.
MW	4	100 and 102	General Description	Again consistency issue - create a phrase rather than complete sentence. On page 102, delete the entire first phrase from "in agricultural... present if"	We agree that the wording of indicators is not always consistent. However, similar wording has been used in many previous regional supplements. Therefore, we are reluctant to reword some indicators because of the confusion it could cause among users who work in more than one region.
RR	4	101	Photo	Replace photo with an example that is clearly from during growing season, which would meet the indicator requirement.	We used the best photo we have available.
MW	4	103	Caution and User Notes	Clarify region - Is the use of the word abundant to describe rainfall - appropriate?	Compared to some other supplement regions (e.g., Arid West, Great Plains), rainfall in the Eastern Mountains and Piedmont is abundant.
RR	4	103	User Notes	Move first two sentences up to start of general description paragraph.	We do not see any advantage to this suggestion. We prefer to keep the General Description short.
RR	4	104	User Notes	Move first sentence up to start of general description paragraph.	We do not see any advantage to this suggestion. We prefer to keep the General Description short.
RR	4	105	User Notes	Move first two sentences up to start of general description paragraph.	We do not see any advantage to this suggestion. We prefer to keep the General Description short.

Chapter 4

Team	4	105	User Notes	Add example of an exclusion to include "bedding or microtopical relief caused by silvaculture practices" at end.	We will make the recommended change.
RR	4	106	User Notes	Move description of method up to general description and eliminate user notes from this indicator.	We do not see any advantage to this suggestion. We prefer to keep the General Description short.

Chapter 5, References and Appendices					
Initials	Ch	Pg	Par	Comment	Response
Team	5	General	1	Need to define: <i>significantly disturbed</i> and <i>problematic</i> , <i>problem areas</i> and <i>atypical</i> . What is the difference.	Most ecosystems in the country has been disturbed to some extent. However, the guidance given in this chapter is not needed unless the site is disturbed to such an extent that wetland indicators are missing or misleading. That is generally what the supplement means by "significantly disturbed" although it is not defined. Problem areas and atypical situations are defined in the 1987 Manual and in paragraph 1 of chapter 5 of the supplement.
MW	5	107	2	1st line, delete "presented in this chapter"	Meaning is lost if these words are deleted.
MW	5	107	3	2nd line, change "planted to crops" to read, "planted in crops", remove "use" after "herbicide	We will make the first recommended change. The words "herbicide use" are needed to convey a "management practice" and maintain the sentence's parallel construction.
MW	5	107	3	Remove desirable from "desirable tree species" - so will read "tree species"	We will make the recommended change.
TC	5	108	2	Vegetation bullet a: add, "or during the growing season immediately after cultivation or harvesting".	We will make the recommended change.
MW	5	109	Hydrology	last line, change "Their" to "The"	We will make the recommended change.
TC	5	109	General	Suggest inclusion of Resource Appendix - under the Hydrology Section. Among the things to list is analysis of Digital Elevation Models to examine drainage and flow patterns, which the Corps DOES use and often makes significant nexus and JD calls based upon for DEM analysis of "on the fence" sites. This manual still assumes that the only technology that exists to aid the delineator is a paper topo map and a trip to the air photo room at the local NRCS office. While Joe Landowner might be limited to that, there are few, if any, consultants and regulators that are NOT using GIS to aid delineations.	We have tried to update the guidance given in the 1987 Manual by mentioning relevant online and electronic data sources whenever possible. However, this supplement does not address "significant nexus" or other policy issues, so we see no need to mention DEMs here.
	5	109	Section 2	Address Logging Activities under problem areas, 2nd sentence - add "ruts caused by logging equipment" reference the RGL (if still used) on significantly naturalized areas to assist user.	We will make the recommended change.
MW	5	110	First item e	Add to the end: "On-site monitoring, for as long a period as possible, should always be used to calibrate the hydrologic models."	Proper application of hydrologic models requires many more assumptions, cautions, and caveats than just the one suggested. Listing and discussing them is beyond the scope of this supplement. We prefer that users consult the cited reference or a hydrologist.
MW	5	110	1	2nd sentence, rewrite to read "... but may lack any of the hydrophytic.....Chapter 2 at certain times.	We will make the recommended change.
MW	5	110	Procedure, Items 1 and 2	Item 1. 2nd line. change "likely non-wetland" to "likely a non-wetland" Item 2. Delete second line and change the first line to end as "...concentrate water, such as those listed below."	We prefer to use "non-wetland" as an adjective, rather than a noun. We will make the second recommended change.
MM	5	110	Procedure, Item 2.b.	define "active floodplain" include reminder that this is not necessarily the active floodway. It should be mentioned. that many delineators use the REGULATORY floodplain when the active floodplain is based on the delineators assessment of the upslope extent of overbank flow when standing next to the stream. Include these resources in the Resource appendix to be added for sources of data.	We prefer to leave this determination to the user.
TC	5	110	Procedure	Intro to Problematic Hydrophytic Vegetation - mention GIS resources. SEGAP is a VERY RICH SOURCE for identifying potential reference veg communities.	We will add a reference to SEGAP and other sources of land-cover data to the section on Reference Sites (page 115 of the peer-review draft).
MW	5	111	4.a	Remove "interdunal swales" as they are not a major part of this region	We will make the recommended change.
MW	5	111	4.a.(1)(d)	delete "on the site"; replace "substantially" with "mostly" or identify what "substantial" denotes. Get more definitive on what most or substantial means.	We prefer the original wording. The user must determine whether the unknown and reference sites are sufficiently similar. There are no objective standards to aid this determination.
MW	5	112	4.a(2)(a)	2nd sentence, delete "on the site".	We think the original wording is clearer.
CH	5	112	Vernal Pools	Previously stated on page 2 of the intro that vernal pools were beyond scope of document - now include a whole section - Consistency issue	Page 2 mentions "unvegetated seasonal pools." If they are never vegetated, they are not wetlands by the Corps/EPA definition and, therefore, are not covered in the Manual or this supplement (although they may still be regulated). However, vernal pools that are vegetated at some point in their annual cycles are wetlands.
MW	5	112	4.a.(2) (b)	Throughout the Chapter, replace the word "substantially" with "mostly". Think about clarifying qualitative modifiers and using them consistently with respect to meaning.	We prefer the original wording. The user must determine whether the unknown and reference sites are sufficiently similar. There are no objective standards to aid this determination.

Initials	Ch	Pg	Par	Comment	Response
MM	5	114	4.f	include user note that not all "sphagnums" are hydrophytic	We agree that not all Sphagnums are wetland plants. However, at this point in the procedure, it has already been confirmed that the site has indicators of hydric soil and wetland hydrology, and is in an appropriate landscape position. It simply lacks a vascular plant community. Under these circumstances, any Sphagnum community should be accepted as hydrophytic.
Team	5	115	1	add to the end of 1st para that FACU plants can be found in wetland and may function as a wetland plant under certain conditions.	The FACU indicator status already acknowledges that these species exist in wetlands up to 33% of their occurrence in nature. No one should be surprised to find FACU plants in wetlands. However, the paragraph under consideration specifically lists eleven FACU plant species in this region that are known to dominate certain wetlands to such an extent that they may fail hydrophytic vegetation indicators. The special procedure for dealing with these situations does not extend to any other FACU species.
Team	5	115	d.	List the FACU plants known to occur in the region and include a table where those plants are known to occur.	According to the Corps of Engineers' National Wetland Plant List (NWPL), there are more than 650 plant species with a FACU indicator status in the Eastern Mountains and Piedmont Region. Information about these species and their distributions can be found at the NWPL (https://rsgis.crrel.usace.army.mil/apex/f?p=703) or at the USDA Plants database (http://plants.usda.gov/). It is beyond the scope of the supplement to provide these lists.
RR	5	115	d.	The technical literature discussion should be included in the main vegetation section (Section 2) rather than in the problem section - with regard to NI, NO, and unlisted species. The FACU-dominated wetland is a problematic wetland situation. The other 3 are problematic plant list issues, not problematic vegetation issues.	We disagree. Technical literature is used to solve a problem with hydrophytic vegetation indicators or with the indicator status of certain plants. Therefore, it is appropriate that this option appears in Chapter 5. Furthermore, this information is found in the same place in all previous regional supplements. It is important to maintain consistency of organization of these supplements for users who work in more than one region.
MW	5	115	c.	Replace "substantially" with "mostly" - see note above	We prefer the original wording. The user must determine whether the unknown and reference sites are sufficiently similar. There are no objective standards to aid this determination.
Team	5	116	2	Fluvial deposits could include indicator F 19 as a reference indicator. 1st sentence - replace "and" with "or"	We will make the second recommended change in wording. However, indicator F19 specifically addresses floodplain wetland soils that are higher than 2 chroma due to high iron content of the fluvial material. This is not the same concept as the "Fluvial Deposits within Floodplains" problem soil situation, which is caused by other factors (insufficient time to develop redox features, low organic content, etc.).
MW	5	116	1	In preamble to the problematic soil section give specific definition of when problem hydric soil determinations must be accompanied by certification by certified soil scientist.	It is not the purpose of the Supplements to require certification of wetland practitioners. No change is needed.
MW	5	120	c.2	Combine sentences 2 and 3 to read "... concentrate water, such as those listed below"	We will make the recommended change.
MW	5	121	c.2	1st sentence, change "color of the soil" to "color of a moist soil"	The suggested change is not needed. If the soil were dry, no color change upon exposure to air would be expected.
MW	5	123	2	3rd sentence, delete "in the region".	We disagree. These examples are found in this region. Other regions may differ.
MW	5	123	procedure 2	combine first 2 sentences to read, "concentrate water, such as those listed below"	We will make the recommended change.
	5	124	b	User Note to consider more than just 2 to 3 months of rainfall, consider if there has been a long term climate change in the previous 12 months.	Longer term rainfall deficits are considered in the following section on droughts. One or the other of these two approaches should be appropriate in most situations.
MW	5	125	e	Add the word "Seven:" in introduction relating to the 7 hydrology tools listed and referenced at NRCS website. First line with read..."The 'Seven Hydrology Tools' (USDA Natural Resources...."	"Hydrology Tools" is the commonly used name for this collection of procedures developed by NRCS. No change is needed.
MW	5	126	6	Change to "Estimate the effectiveness of agricultural drainage systems using NRCS state drainage guides."	We will make the recommended change.
Team	5	127	general	Give an example of when you would start including this sort of analysis, perhaps a break point or flow chart to assist the delineator in knowing when to include the wetland mosaic. In interest of clarity place under procedure a number in the sentence "First identify and flag all ...that are X acres or more.	These decisions should be made by the field investigator and/or Corps District staff based on site conditions and other factors. There is no minimum size for an area that can or should be mapped as wetland or non-wetland, and no objective standards for when to use the mosaic approach. If in doubt about the applicability of this procedure on a specific site, users should consult the Regulatory Branch of the appropriate Corps District.

Initials	Ch	Pg	Par	Comment	Response
JB	5		throughout	Alpha-alpha-Dipyridyl is called a "dye". It is not a "dye" as it does not artificially color the soil. It however is a "reagent" used to detect the presence of the ferrous ion, and thus used as an indication of the occurrence of the reduction of iron (ferrous (Fe ²⁺) to ferric Fe ³⁺). Please change all reference of "alpha-alpha-Dipyridyl dye" (as found on pages pages 96 (5x), 109, 117 (2x), and 122 (7x)) to "alpha-alpha-Dipyridyl reagent".	We will make the recommended change.
MM	References			the following links don't work: Sprecher, S. W., and A. G. Warne. 2000. Accessing and using meteorological data to evaluate wetland hydrology. ERDC/EL TR-WRAP-00-1. Vicksburg, MS: U.S. Army Engineer Research and Development Center. (http://el.ercd.usace.army.mil/elpubs/pdf/wrap00-1/wrap00-1.pdf) U.S. Army Corps of Engineers. 2009. National wetland plant list. (https://maps.crrel.usace.army.mil/apex/f?p=393). Visited January 2009. USDA Natural Resources Conservation Service. 2005. National soil survey handbook, part 629, glossary. Washington, DC: U.S. Department of Agriculture. (ftp://ftpfc.sc.egov.usda.gov/NSSC/Soil_Survey_Handbook/629_glossary.pdf) (most have additional text that only appears when clicked)	We will verify all links before publication.
MM	References			reference where to find MOU's, RGLS, other important info for delineator	This is beyond the scope of the supplement. The supplement supersedes some existing guidance memos from Corps Headquarters. This will be explained in the Public Notice announcing publication and implementation of the final supplement.
Team	Appendix A			general recommendation about defining terms	We do not understand the comment. Important terms are defined in the Glossary (Appendix A) or in other sources cited there.
				Add a Resource Appendix for users recommending current resources available to aid in delineations.	Many information sources are already cited in the supplement. Other resources useful to delineators (e.g., maps, aerial photos, GIS layers), particularly internet resources, change so frequently that any list given in the supplement would rapidly go obsolete. We rely on wetland delineation trainers to provide up-to-date resources to their students. Previously trained and experienced users can use standard internet search techniques to locate relevant resources.
MM	Data Sheets			Capitalization is inconsistent	We will check for consistency.
Team	Data sheet		veg section	Procedure goes through with indicator 1 2 3 ... data form doesn't - nowhere on the data form does it indicate which indicator is referenced - can you include the indicator numbers	We will make the recommended change.
Team	Data sheet			Change title to read, "Hydrophytic Vegetative Indicator Summary"	We disagree with the suggested wording, and it is not clear where this heading is intended to go.
Team	Data sheet		Hydrology	Include a para in chapters 3 and 4 explaining how to use "other". Each sheet has a blank for "Other" but there is no discussion of "Other" in the text. Direct people to comment using professional judgement explaining that notes concerning "other" should be something that influences either of the primary or secondary indicator status and should be elaborated upon on the data sheets.	There are no procedures or guidance for using the "other" category, except in relation to wetland hydrology indicators (see page 74 of the peer-review draft). The presence of the "other" category on the data form is simply to allow the user some flexibility in interpreting field observations that may not fit an indicator. As stated on the data form, the user should provide some justification in the Remarks. No additional requirements are needed. The Corps of Engineers has final authority over the use and interpretation of the supplement, including the acceptability of any "other" observations. If in doubt, consult the appropriate Corps District.
Team	Data sheet		data sheet	Two versions of the form - one for 4 veg strata and one for 5. The one for 4 has been shortened by a page making it more difficult to use. It incentivizes the use of the 5 veg strata form. To keep them consistent, alter the second page on the 4 veg sheet and allow for bigger remarks section.	We will expand the 4-stratum data form to three pages to provide more room for recording observations and to make it parallel with the optional 5-stratum data form.