Comments of the Independent Peer-Review Team for the Interim Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Atlantic and Gulf Coastal Plain Region

15 November 2007

Responses developed by the US Army Engineer Research and Development Center in cooperation with the Atlantic and Gulf Coastal Plain Working Group are given in Column F. The Corps of Engineers thanks all volunteer reviewers for their helpful and insightful comments.

Initials	Ch	Pg	Par	Comment	Responses
JG			General	Sometimes you say hydrophytic vegetation and sometimes wetland vegetation. Please choose one and be consistent throughout.	We will be as consistent as possible. However, sometimes we mean "vegetation that occurs in a wetland" and sometimes we mean a plant community that has passed a hydrophytic vegetation indicator. They are not necessarily the same.
TR	1		General	Much of the forest description on pages 5 – 7 deal with upland landscapes. They should instead focus on wetlands.	This was intended. Pages 5-7 describe the regional setting where the supplement is to be applied. Pages 8-10 describe wetlands within that region.
TR				It would be useful to list the HGM classes and then discuss the various types (common names) within the classes. There is no mention of lake or reservoir fringe wetlands that are very common in many states. All this section is interesting but not that useful and could be omitted in order to shorten the document.	The section is intended as a brief introduction to the wetlands in the region and is not intended to be encyclopedic. However, we believe the introduction is useful for beginners and those new to the region. We use HGM terminology, where appropriate, throughout the document.
LABG	1	1	General	It should be made very clear how much the supplement will replace the 1987 Manual; more emphasis is needed.	The only replaced sections are clearly listed in Table 1. Both documents are needed to delineate wetlands.
LABG	1	1	2	The reference to animal communities is not relevant to wetland delineation. The term "other factors" is also too nebulous. Focus should be placed on the major/relevant factors – climate, hydrology, geology, soils and plant communities.	As the statement says, animals do affect both the identification and functioning of wetlands. See NRC (1995) and hydrology indicators B13 and C8. In any case, this is intended as a general statement and is not confusing.
LABG	1	2	2	remove dash (-) from wetland-delineation	ERDC editors will review the document before publication.
		2	6	keep paragraph six	We do not understand the comment.
LABG	1	3	1	the applicable area "extends northward to the present-day Illinois state line". However, the map in Figure 1 shows boundaries extending into Illinois.	We will revise the wording.
LABG	1	3	2	some of the MLRAs are missing from the list.	Only MLRAs that are not within the region are missing from the list. All MLRAs within a listed LRR are within the region unless otherwise noted.
LABG	1	3	3	line 5 – "these Regional Supplements" is referencing all of the regional supplements. The earlier paragraphs focused on the A&GCP region and this paragraph switches to discussion of multiple regional supplements. The focus of this paragraph needs to be clear.	This entire paragraph talks about transitions between regions. Therefore, more than one Regional Supplement would be involved. The paragraph seems clear.
LABG	1	4	fig	2nd sentence – add the word "wetland" in front of indicators.	We will make the recommended change.
LABG	1	5	4	what is an important tree? (value judgement) Why are the particular species listed?	We will change the word to "common".
LABG	1	5	5	missing a parenthesis on (Service 2006a)	We will make the recommended change.
LABG	1	General		It would be nice to have an explanation on the basis of how this region was separated from the others.	Characteristics that were important in separating this region are identified on pages 3 and 5. Similar statements appear in each Regional Supplement. For brevity, we have not repeated all the characteristics of adjoining regions in each supplement.
LABG	1	General		Emphasis should be placed on the differences of the sub-regions within this regional supplement.	The general descriptions of each subregion are sufficient for users to apply wetland indicators accurately.
LABG	1	General		Can examples of broad transition zones (BTZ) be included/described so a delineator knows when they are in a broad transition zone? Guidance on when it is acceptable to use the regional supplement from an adjacent region for transitional areas and how to document the rationale would be useful.	We cannot predict the characteristics of all possible transitional sites. Delineators should use their judgment in selecting the appropriate supplement. They have the option of applying both supplements and comparing the results (we will clarify this). We do not anticipate differences in the outcomes in transitional areas.

LABG	1	General		The genus of several plants is not consistently abbreviated when it has been used previously; i.e., *Pinus virginiana* to *P. virginiana* .	We have used abbreviations only where the intended genus is clear. If in doubt, we spelled it out.
TR	1	8	1	Need references in first paragraph	We will make the recommended change.
TR		9	3	Is beakrush a grass?	It is a sedge. We will revise the wording.
LABG	1	8 & 9		The wetland descriptions are very general. This section could be shortened by just listing the wetland types (and what classification they follow – if there really is one) and highlighting those wetlands that are unique to this region. This section could also include a list of references/field guides where someone could find out more about the wetland types. However, a reference list may become too lengthy	This is intended to be a brief introduction to wetlands in the region for new delineators. It attempts to describe generally most wetlands in the region and not just types "unique to this region." Reference to wetland classification is not required to perform reliable wetland delineations. A list of other references on wetlands is beyond the needs of this supplement.
TR	2	11	General	Much of this section (page 11) might be better in the main introductory section (i.e., page 5).	This section focuses on factors affecting the vegetation of the region, particularly its wetlands. It seems appropriate in the vegetation chapter.
TR	2	12	6	The recommendation on page 12 for estimating percent cover from a meandering survey probably needs clarification and more guidance. Offering general guidance is ok for experienced delineators, but many users will not understand this.	In this general statement of sampling alternatives, the term describes a wandering survey of the vegetation unit allowing the user to estimate average coverage of plant species and not be constrained by a fixed plot. Wetland delineation does not require an ecological study, particularly in straightforward cases. The supplement allows delineators to use simple, practical approaches to vegetation sampling, when appropriate, to reduce effort and increase efficiency. We are reluctant to provide a detailed procedure for what is intended to be an informal method.
LABG	2	General		There is no added value provided by including the Introduction. The information is limited and incomplete and does not speak directly to practical indicators of Hydrophytic Vegetation. It is more of a description of landscape and the influence of past/present biotic factors.	This supplement follows the format established in previous supplements, which includes a brief introduction to the major influences on vegetation in the region.
LABG	2	General		Remove paragraphs two through four.	These discussions provide general background to the local flora and development of the vegetation in the region. Many commenters have appreciated these brief ecological statements.
LABG		General		Add sentence from paragraph five to first paragraph – "Hydrophytic vegetation decisions are based on the wetland indicator status (Reed 1988, or current approved list) of species that make up the plant community."	We disagree; that topic is not similar to the introductory papragraph and does not fit.
LABG		General		Explanation that FACW, FAC and FACU are in both wetlands and uplands should be basic information and not need to be restated. However, a statement could be made that some species have a broad tolerance to growing under a variety of moisture levels.	We disagree. Some commenters have concerns about the use of the FAC category. This basic statement reiterates that a hydrophytic vegetation decision includes FAC, FACW, and OBLs. Many of the simple statements that are made in the supplement are intended to clarify specific issues that have arisen.
LABG		General		The statement "some wetland communities may be dominated primarily by FACU species" is misleading. If a wetland is dominated by FACU species, it likely does not satisfy the hydrophytic vegetation factor, and therefore, it is not a wetland. However, there are seasonal circumstances (shifts from wet spring to dry summer) that may allow the establishment of more non-wetland (and FACU) species. This situation should be treated as an anomaly and be discussed in Chapter 5 not in the introduction.	This statement foreshadows the discussion later in the supplement that FACU species found on undrained hydric soils and with hydrology indicators are acting as hydrophytes. We then direct the user to Chapter 5 where we present methods to use in these cases. By definition, FACU species occur in wetlands with 1-33% frequency. Therefore, it is not surprising that, in unusual situations, some wetlands will be dominated by FACU species. Working groups have agreed that the problem cannot be resolved using different indicator statuses. Therefore, the supplement includes special procedures for these cases.
LABG	2	6		keep	We do not understand the comment.
LABG	2	12	6	What is a "meandering survey"?	See the response in row 34 of this spreadsheet.

LABG	2	12		When is it appropriate to use other vegetation sampling approaches and how should their use be rationalized and documented?	That depends on the user's background and the complexity of the site. Approaches to vegetation sampling are almost infinite. We have suggested approaches that we think are simple and widely applicable, but must allow for other valid methods. The National Technical Committee for Wetland Vegetation (NTCWV) is beginning an effort to write a vegetation sampling booklet to support the supplements. That booklet will consider other methods. For now, the user is free to apply other methods, as long as he/she provides adequate justification.
LABG	2	12	5	Why was 5 percent plant cover chosen for an area to be considered vegetated? Is it considered vegetated if no plants are directly rooted in an area, but there is tree cover?	The 5% threshold is arbitrary but was adopted by various working groups as a minimum for an area to be vegetated. In wet habitats, this provides a consistent cutoff between wetlands and other waters. Overhanging woody plants do not need to be rooted in the area if they are growing under the same soil and hydrologic conditions.
TR	2	13	General	Need an example of when one plot is enough and when several should be established.	The need for additional plots is a matter of opinion. The Corps Manual only asks that the sample be "representative". If this cannot be accomplished with one plot, then the user has the option to increase the sample size. We cannot provide one example that would illustrate the universe of possible site characteristics and sampling scenarios. However, the NTCWV is preparing a literature review of sampling approaches and will address this issue.
TR	2	13		Why not recommend square plots given they are much easier to lay out?	This question will be evaluated by the NTCWV in preparing a booklet on vegetation sampling in a wetland delineation.
TR	2	13	2	The basal area prism is not appropriate for use in this context. It is designed for sampling forest stands and accuracy depends on large sample sizes. This error has been around for 15 or more years.	The forestry literature (e.g., Palley and O'Reagan, For. Sci. 7: 282-293, 1961; Kulow, J. For. 64: 469-474, 1966; Whyte and Tennent, N.Z. J. For. 20(1): 134-147, 1975) attests to the accuracy and precision of basal-area measurements made with a prism, although the reviewer is correct that the technique typically involves a number of measurements within a stand. The literature also points out that a fixed plot is more efficient for determining stocking rates (stem densities). So, based on published papers like these, some working groups have decided to allow the use of a prism as a quick and efficient method of sampling the tree layer.
LABG	2	13	all	Change the term ‘plot’ to ‘sample point’.	We disagree because "plot" describes an area being sampled and "sample point" could be confused with the points used in point-intercept sampling methods. The approaches are entirely different. For general users, the term plot is more direct and meaningful.
LABG	2	13	2	It is suggested to eliminate collecting abundance data for the tree stratum by estimating basal area, especially since this is a plotless tool and cannot be used in the prevalence index.	Basal area is a form of abundance data that can be used in the 50/20 rule and dominance test, and the Corps Manual recommends basal area for trees. Again, since no comprehensive assessment of sampling approaches in wetland delineation has ever been done, the NTCWV will review the literature and develop a booklet of valid sampling methods.
LABG	2	13	3	Averaging data across a series of subplots should not be recommended. This process could lead to the wrong wetland determination result (either calling an area dry that is wet and vice versa), especially if there is a mosaic of wetlands/uplands.	These subplots are sampling a recognized vegetation unit that should be uniform in soil and hydrologic conditions. It should not be a mosaic of wetlands and non-wetlands (See Chapter 5). The supplement gives general advice but cannot predict what situations will arise in the field. We have to assume that the delineator has some level of training and experience in applying these methods.
LABG	2	13	table	Are there any references newer than 1999?	Tiner's reference is the most recent and applicable.

TR	4	14	General	The purpose of evaluating multiple strata is not only for completeness, but also to take into account the age of the vegetation and its relationship to hydrology. For example, trees may have become established under a hydrologic regime that has changed, whereas the shorter-lived herbaceous layer reflects current time hydrology. Given that logic, having herbaceous plants and young woody plants in the same layer makes sense. I never have understood the logic for having a separate woody vine layer. These species could be placed in the saplings or shrub layer if large and climbing, and in the herbaceous layer if small and erect. For example crossvine and poison ivy are very common vines in many bottomlands, but often are browsed heavily (especially crossvine). These young plants seem to belong in the herbaceous layer; older vines have been present for a much longer period and would be more like a sapling.	This is a theoretical issue and we have no immediate answer. In classical ecology a community was/is described based on life form and species abundance, and the 1987 Manual and supplements follow this approach. However, the NTCWV is looking into these issues and may be able to recommend other approaches in the future.
TR	2	14	General	This section needs work. There are logic flaws and inconsistencies between material on page 14 and page 15 (e.g., note the statements regarding woody vines and herbaceous plants). It does not make sense to combine plants from a sparse layer with another layer as described on page 14.	The working group and National Advisory Team have reconsidered and simplified the stratum definitions used in this supplement. The text has been revised to eliminate inconsistencies. The purpose of combining a sparse stratum with a more abundant one is to prevent sparse plants from being selected as dominants if they are the only representatives of their strata.
LABG	2	14	1	Of concern is whether life form or strata is the better approach for vegetation sampling.	We have no immediate answer to this concern. Other sampling methods refer to growth forms or life forms. The use of strata to simplify growth form terms is unique to the Corps Manual.
LABG	2	14	1	Why 5 strata and distinguish btw shrub and sapling?	Use of 5 strata is a local preference and "business practice" of most wetland delineators in this region. In tests of vegetation sampling using no strata, 4 strata, or 5 strata, there are no apparent differences in the hydrophytic vegetation determination. Therefore, the supplement incorporates the preferred approach of the working group. However, users who prefer a 4-stratum approach will be allowed to use the one from the nearest adjacent region.
LABG	2	14	1	Why combine strata if a stratum has less than 5% cover?	The 5% threshold was arbitrary, but the practice of combining sparse strata with more abundant ones prevents uncommon plant species from being selected as dominants if they are the only representatives of their stratum.
LABG	2	14	1	When is the peak of the growing season? For herbaceous species some peak at different times than others.	The abundance of plants in a stratum or in the entire community varies seasonally. The statement is intended to prevent a stratum or community from being declared unvegetated simply because it has not yet begun to develop that year.
LABG	2	14	1	Allowing woody vines to be in multiple strata can influence whether the sampling point has hydrophytic vegetation. Since woody vine species generally are not typical wetland vegetation and they can be rooted outside of the wetland boundary, it is suggested to remove the woody vine stratum.	Woody vines are their own stratum and not counted in every stratum. We will clarify that plants do not need to be rooted in the plot as long as they are growing under the same soil and hydrologic conditions. If they are not, they should not be counted.
LABG	2	14	1	line 9 – this sentence states that the herb stratum is limited to only herbaceous plant species. However, the Herb stratum states that it includes woody seedlings of tree species. These are contradictory.	We will correct the error.
LABG	2	14		Vegetation dominance should focus on life form and not plant community structure (strata). Plant community strata are important for wetland function, but not whether an area has hydrophytic vegetation. Therefore, propose the following definitions for vegetation life forms:	Using life forms or strata in plant sampling for a wetland delineation is a matter of convenience and opinion. The issue has not been studied thoroughly. Strata have been used successfully under the Corps Manual for 20 years. However, the working group and the National Advisory Team have reconsider and simplified the stratum definitions used in this supplement.
LABG	2	14		Tree stratum – Consists of all tree species 3 inches or more DBH.	See the previous response.

LABG	2	14		Shrub stratum – Consists of all shrub species.	See the previous response.
LABG	2	14		Herb stratum – consists of all herbaceous species.	See the previous response.
LABG	2	14		Regeneration (Seedling/Sapling) – consists of all tree species less than 3 inches DBH	See the previous response.
LABG	2	14		No heights for the stratum are needed. Even if a stratum has less than 5 percent vegetative cover it is still represented.	See the previous response.
LABG	2	16		Removal of the (-) modifier for FAC will likely result in more hydrophytic vegetation determinations. Also, if subsequent versions of the National List of Plants that occur in Wetlands keeps the (+) and (-) modifiers, it would be inconsistent to remove them from hydrophytic vegetation determinations.	In the future as the plant list is updated, +/- modifiers will only be used if there is ecological data to support the rating. To date, these modifiers represent many committee voting compromises and say little about a plant's wetland affinities. Field testing of the supplement has indicated that wetland boundaries on very few sites will change as a result of dropping +/- modifiers. We hope to learn more about the effects of this change during the 1-year interim implementation of this supplement.
TR	2	15		I think it is a good idea to simplify the indicator status of plants and eliminate the +/- modifiers. Having said that, they probably should continue to be used until several “problem” species are evaluated very carefully. For example, fescue is a FAC- plant and changing its status to FAC will have a substantial impact in much of the mid-South. While I think the change in status of many areas from non-wetland to wetland is warranted, it will be controversial. The group identified many other similar species within the region	See the previous response.
LABG	2	15		Is callery pear (*Pyrus calleryana*) to be an example of a ‘wetland’ species that is not listed by Reed (1988) or just a species that is not necessarily an UPL plant that is not listed? At least in Virginia, callery pear is not a wetland species.	This species is an example of a plant that got missed in the 1988 plant list. It will be considered in the current update. Until then, it is still unlisted. The supplement does not change indicator status ratings.
TR	2	16		Indicator 1: Dominance test I would continue to recommend converting absolute cover to relative cover for ease of understanding when using the 50/20 rule. If PI’s are to be calculated, you always can go back to the raw data.	It takes added steps to "relativize" plant abundance data. The added steps are unnecessary if people would simply work directly with the absolute cover values in both the dominance test and prevalence index. This also avoids confusion about what sort of data is appropriate for which indicator.
LABG	2	17	user notes	suggested rewording: Use the “50/20 rule” described below to select dominant species from each stratum of the community. Once a species is selected as a dominant, its cover value is not used in the dominance test; each dominant species is treated equally. Species that are dominant in two or more strata should be counted two or more times in the dominance test. List the dominant species from all the strata and apply the dominance test using all of the dominant species. For example, a plant community with seven dominant species across all strata would need at least four species that are OBL, FACW, or FAC to be considered hydrophytic by this indicator.	This wording is nearly identical to the original. We see no reason for the change.
LABG	2	17		Procedures for Selecting Dominant Species by the 50/20 Rule: - the most abundant species is not the same as those species with the greatest percent cover. It needs to be clear how the strata data is being collected (percent aerial cover or abundance). If all data is to be collected as a percent aerial cover, I suggest removing “most abundant species” from the first sentence, and paragraph 2, second sentence.	As discussed on page 13, percent areal cover is one potential measure of vegetation abundance, and is the preferred measure in this supplement.
LABG	2	18		It is very unclear how dominance is determined and whether absolute vs relative cover is being used in the 50/20 calculations. Table 2-2 lists “absolute percent cover”, but it is really converted to relative cover.	We disagree. In Table 2-2, no values are converted to relative. All calculations are based on absolute cover. This is also clear in the procedure starting on page 17.

LABG	2	all		General comment – can guidance be given on what to do if the time of year precludes species identification (especially when time constraints do not allow revisiting the site when the species could be positively identified)?	The 3-factor approach requires an evaluation of the vegetation. A delineator may make a preliminary wetland determination when the vegetation cannot be identified (for example, during winter), but must return at an appropriate time to verify the preliminary determination or must use procedures given in Chapter 5. Of course, occasionally district regulatory offices must make decisions based on less than complete information.
TR	2	20	General	Indicator 2: Prevalence index: I like this index in theory, but wonder how useful it will be in practice. It requires plant ID expertise beyond what most delineators have. Most cases I can think of where soils/hydrology indicators are present and the plants fail are altered areas in which pasture grasses or invasives dominate. They should be treated as disturbed areas and compared to reference sites. Having another plant test probably is not appropriate.	This comment contains at least two different issues that are not related. The prevalence index (PI) is a more conservative measure of hydrophytic vegetation than the dominance test, but is useful in identifying hydrophytic plant communities that are overlooked by only considering dominant species. It is true that more plant expertise is needed to apply the PI. The effects of planted or escaped species is addressed separately in Chapter 5 and is independent of the hydrophytic vegetation test used.
LG	3	22	General	My biggest comment is that the soils section should not contain any information that is already contained in Ver. 6.0 of the NTCHS Field Indicators. There is no reason to keep updating two technical documents at the same time. Just refer to the other from this one.	We prefer to have this information all in one place, particularly when the User Notes are tailored for this region. This follows the pattern established in previous supplements. No change is necessary.
JG	3	23	1	Add - By definition in Hydric Soil Technical Note 13, hydric soils must meet one of the following, documented on the USDA-NRCS Hydric Soils web site(http://soils.usda.gov/use/hydric): 1. Have a hydric soil indicator or, 2. Meet hydric soil criteria 3 or 4 or, 3. By data meet the Hydric Soil Technical Standard (Hydric Soil Technical Note 11).	This checklist is not necessary for the purposes of this supplement. Furthermore, the supplement accepts other evidence that a soil is hydric in the context of a 3-factor wetland test.
LABG	3	22	1	in the hydric soil definition – what is “long enough”	The National Technical Committee for Hydric Soils (NTCHS) is responsible for the hydric soil definition. Any suggestions for changes should be directed to the committee.
LABG	3	22	1	It would be nice if this was explained and ideas were provided on how to determine if “long enough” was met. Delineators are more likely to use the Supplement instead of referring back to the 1987 Manual, therefore the more background information that can be included in the Supplement, the less chance for misinterpretation.	The hydric soil definition says "long enough during the growing season to develop anaerobic conditions in the upper part." That is sufficient for the purposes of this supplement. Most soils that meet this definition will exhibit hydric soil indicators, thus demonstrating that wetness episodes were "long enough".
LABG	3	22		could any of the indicators go away? Although this is not likely, a sentence should be included stating that they may be revised and new ones may be added as more testing is done. Could any of the other indicators currently not included in this supplement be used?	The hydric soil indicators in the Supplement are a subset of the NTCHS Field Indicators of Hydric Soils in the United States. Wording of the indicators and the applicable regions are subject to change (see paragraph 2 on page 22). Proposals for changes should be submitted to the NTCHS.
LABG	3	22	4	is the absence of indicators implying a man-induced or “other” atypical/problem area situation? More clarity should be provided that the absence of indicators may be due to recent, but current condition change in hydrology, so indicators will form over time OR that the indicators do not necessarily pertain to the wettest, interior of wetlands.	Generally, the absence of indicators implies that the soil is not hydric. However, in atypical or problematic situations, other evidence is used to make the hydric soil determination (see Chapter 5). The concern about the possible absence of indicators in the wettest, interior portions of wetlands is addressed on page 27.
LABG	3	23	1	last sentence – provide examples of what is meant by “features”.	The sentence refers to soil morphologic features (e.g., organic accumulations). We will revise the wording.
LABG	3	23	1	It should be made clear that the “saturation/inundation” needs to be permanent for organic matter to <u>significantly</u> accumulate. It would be helpful to include a simple explanation on the correlation between organic carbon (OC) and organic matter (OM), and therefore, why this section refers to OC and not OM.	The first statement is not always true. Organic matter may accumulate in areas that are not permanently saturated/inundated, and may even accumulate in some relatively dry situations (e.g., Folists). We will clarify the connection between organic carbon and organic matter.

TR	3	23	General	**Organic Matter Accumulation:** The section on texturing soil high in organic matter (page 23) might be better located in the Observe and Document section on page 26.	This section is located in the same place in all previous supplements. For consistency, we prefer this location.
TR	3	23	Tables	I probably would delete Tables 3.1 and 3.2. Very few typical delineators have the ability to do this and soil scientists who might get involved already should know how or at least where to find out how.	We wish to provide wetland delineators with basic tools needed to make reliable hydric soil interpretations. The identification of muck, mucky peat, and peat is one such tool. If in doubt, the user should consult a soil scientist, but the basic procedure is simple enough for most purposes.
LABG	3	23	Table	center the cells under Horizon Descriptor heading	The final document will conform to ERDC publication style.
LABG	3	23	5	reference the L. von Post method.	See the cited ASTM standard.
JG	3	24	1	What about Manganese? It needs to be discussed because it is a redox concentration and it goes into solution before iron.	We will make the recommended change.
TR	3	24	1	**Iron Reduction, Translocation, and Accumulation:** Given the importance of F8 in many areas, there probably needs to be a section on manganese similar to the one on iron on page 24	We will make the recommended change.
TR		24	3	I disagree with the statement on page 24 that a drained soil is still hydric if it would be in its undisturbed state. This is a soil science concept and we should not let terminology override a straightforward delineation approach. We are concerned about point in time determinations. A soil is either hydric or not at the point in time that we are conducting a delineation. Saying otherwise will just lead to confusion.	This is a basic concept associated with the definition of a hydric soil. The supplement follows NTCHS definitions and concepts.
TR		24	3	I think this Cautions section should follow the Procedures section.	This format has been adopted in all previous supplements and, to avoid confusion among users who work in more than one region, we wish to be consistent.
LABG	3	24	Table	what is added value of this table for wetland delineation? I suggest removing it since it just adds more confusion.	For many indicators, it is necessary to know if the soil is muck, mucky peat, or peat. This table is intended to provide a field method to assist in the determination of organic decomposition.
LABG	3	24	2	Sulfate Reduction – The statement about Sulfur being one of the last elements to reduce could be put in context with the other elements that become reduced. Suggest adding a table similar to Table 6-2 (page 169) of Wetlands, third edition, Mitsch and Gosselink.	It is not the intent of the supplement to teach basic wetland concepts. Mitsch and Gosselink's text is indeed a good general reference for new delineators.
LABG	3	24	4	what is the difference between contemporary and recent? Clarify/define intended time frames.	No difference. We use both terms in their common, dictionary meanings. They are not technical terms.
TR	3	25	General	Considerable editing/clean-up needed in this section. I would recommend taking photos instead of considering it (page 26).	We will check this section and revise as needed. Opinions differ on the need for photos. We prefer to let the user decide.
LABG	3	25	all	a lot of this would be better in an introduction on General Field Procedures for documenting the site and where to look for wetlands, not specific to soils.	We agree that some of these suggestions are not specific to soils but the focus here is on hydric soil interpretations. For this reason, and for consistency across different supplements, we prefer to leave it here.
LABG	3	25	5	*Hydrology* – caution should be used as to differences in seasonal water levels	These suggestions focus on what can be observed at the time of the visit. Seasonal cautions and considerations are described in User Notes for specific indicators (particularly hydrology indicators), in Chapter 5, and elsewhere.
LABG	3	25	6	*Slope Shape* – second sentence seems redundant to sentences in *Slope*	We will make the recommended change.
LABG	3	26	3	taking photographs of the overall site would be better stated in a General Field Procedures section.	"General field procedures" are given in the Corps Manual. Eventually the Manual will also be revised.
LABG	3	26	6	Is the use of chroma 2+ widely accepted?	Yes. No change is necessary.
LABG	3	26	6	move last sentence to the end of paragraph 3	We will make the recommended change.
LABG	3	26	7	The following two sentences: "The shape of the local landform can greatly affect the movement of water through the landscape. Significant changes in parent material or lithologic discontinuities in the soil can affect the hydrologic properties of the soil", are better suited for background information and not necessary here.	This section is intended to give background information that would help one to understand and document the soils on the site. Therefore, the information is relevant here.

JG	3	27	General	The most current version the NTCHS Field Indicators of Hydric Soils of the United States (USDA Natural Resources Conservation Service 2006b) contains the background information and precise set of hydric soil indicators approved for use in this Region. The Appendix to this Supplement should contains detailed guides and procedures for field identification of the indicators.	The recommendation is not clear. Presentation of the indicators and field procedures to identify them is the purpose of Chapter 3. We prefer to have the indicators and other information all in one place, particularly when the User Notes are tailored for this region.
TR	3	27	General	I suggest **strongly** that an effort be made to combine as many indicators as possible. It seems as if every possible soils condition ever observed in a wetland has been made into an indicator.	We understand the concern. However, the supplement incorporates the NTCHS field indicators. Any proposals for changes to the indicators should be directed to NTCHS.
TR	3	27	General	As a general comment on this section, the more soil taxonomy terms/jargon that can be removed, the better. Our task in delineation is to determine if the soil is wet enough to become anoxic for a long time and eliminated non-adapted plants. Having too much soil science language in the process tends to be confusing.	We have attempted to reduce the amount of technical jargon in the supplement. For example, soil taxonomic terms (e.g., Mollisol, Entisol) are rarely used, and then only if explained. Hydric soil indicators incorporate standard terminology that is defined in the glossary or in other cited sources. It is not possible to do this work without some understanding of technical terms.
TR	3	27	5	All Soils - Is there ever a case where nodules and concretions are considered redox concentrations as suggested on page 27?	Yes, but not for all soils and not in this region. However, due to the long use of concretions in the Corps Manual, it was felt useful to include this statement in the Supplement. No change is recommended.
LABG	3	27	1	remove dash (-) from wetland-delineation	The final document will conform to ERDC publication style.
LABG	3	27	General	The User Notes have the same sentence(s) (or close variation(s)) in several of the individual indicators. (i.e., See the glossary of Field Indicators…… for definitions of ….) These could be removed and placed in one section prior to discussion of the individual indicators. I also suggest removing reference to the percent organic carbon for the different indicators. The different ranges 12-18, 5-18, 5-12, 7-14, 5-14 are confusing and the percent organic carbon is not necessary for hydric soil determination.	These statements are part of NTCHS' User Notes for these indicators and help to clarify that there are precise definitions of organic matter content for these indicators. They are useful if laboratory analysis is ever needed to resolve a difference of opinion. However, we agree that they are not needed for most field-oriented investigations.
LABG	3	27	General	There is not consistent mention of whether the Indicator is found at the boundary between wetlands and uplands.	Additions to NTCHS' User Notes were provided by the working group based on experience in the region. For common indicators, the working group added information about their locations relative to wetland boundaries. If locations were not mentioned, it was either because the working group had no opinion or the indicator was equally likely to be found at the edges or interiors of wetlands.
JG	3	28	2	I don't know of any Folists in this region. Zero. Delete that comment	Folists occur in LRR U. No change is necessary.
JG	3	29	figure	Delete this picture or add a depth tape and comment in the caption on the actual thickness of organic surface shown in this picture. I made one if you need it.	We will reword the caption.
TR	3	29	General	A2 - Isn't there an upper limit to histic epipedon thickness? The wording about artificial drainage being required is confusing (see general comment above).	Yes, there is an upper limit that can vary depending on several factors (see *Soil Taxonomy*). We are not sure what is confusing about artificial drainage. A histic epipedon that is artificially drained is still a histic epipedon.
TR	3	30	General	A3 - Could this not be combined with A2?	No, they are different. In any case, this recommendation should be directed to the NTCHS.
TR	3	31	General	A4 - This indicator tends to be confusing because people commonly smell other "earthy" compounds and confuse them with hydrogen sulfide. I've observed this dozens of times. Does it ever occur at a wetland edge? Does it ever occur without another indicator also being present? If not, this one might be better omitted.	The wording of the indicator and its application to this region are decisions of the NTCHS. Proposals for changes in the indicators should be directed to NTCHS by following the procedure described in "To Comment on the Indicators" in the *Field Indicators of Hydric Soils in the United States* .
TR	3	32	General	A5 - Can "several" layers be better defined and should this indicator not be restricted to floodplains?	The dictionary definition of "several" is more than two. Thus, three or more layers would be adequate. This indicator occurs in landscape settings other than floodplains. We will clarify the wording.

TR	3	34 - 36	General	A7 – A9 - Is the word “modified” needed in the description in A7? It would seem that this and the next two indicators could be combined. Why are the user notes for 8 and 9 different?	"Modified" is an important distinction and must be used in the indicator. A7 is very different from A8 and A9, which require a muck layer. The different thicknesses apply to different parts of the country. This distinction reflects the increasing amounts of organic matter accumulation necessary for a hydric soil as climates become cooler going from south to north. This emphasizes the need for regionalization.
LABG	3	33	General	Indicator A6 – Organic Bodies – How do you determine in the field an accurate assessment of the organic carbon content? However, Table 3-1 can help determine organic matter percent and whether a soil is sapric, hemic, fibric.	The identification of muck and mucky mineral is explained in "Texturing Soil High in Organic Carbon" on page 23, which is referenced in the User Notes.
TR	3	51	General	F3 - What is the logic for the 6” requirement if layer starts within 10 inches? Generally we are concerned only with the upper 12 inches. In an example in which the depleted layer starts at 10”, my interpretation would be that the normal high water table never gets much above that. Would such an area be a wetland?	The wording of the indicator and its application to this region are decisions of the NTCHS. Proposals for changes in the indicators should be directed to NTCHS by following the procedure described in "To Comment on the Indicators" in the *Field Indicators of Hydric Soils in the United States.* The answer to the final question is that, if the soil meets F3, it would be a hydric soil but not necessarily a wetland.
LABG	3	36	General	Indicator A9 – 1cm Muck – do not need the sentences “To determine if muck is present, first removes loose leaves,…..This is sometimes called leaf litter,…. Or root mat.” Start with “Examine for decomposed organic soil material.”	Although somewhat redundant with the introduction to the chapter, the information is useful in evaluating this indicator. No change suggested.
JG	3	33	General	This one is extremely rare.	The indicator is common in some parts of the region. No change is necessary.
TR	3	33 - 34	General	F6 – F7 - It would seen that these two could be combined (and maybe F13).	The indicators are different. It is likely that the resulting combined indicator would be more confusing than two indicators. In any case, this is an NTCHS decision.
JG	3	37	2nd bul	I have never seen fragmental material in the Coastal Plain or Mississippi valley or delta. If I did, I would really get the Delta Blues.	No response is needed.
JG	3	38		No ruler. Say that it is not mucky-modified. Delete it anyway.	We used the best photos available to us.
RD	3	41	General	Is Indicators A16 (page 41) & S6 (page 45) adequately described as to prevent mistakes in usage? This seems a drastic step to move to a chroma 3 without fully understanding the soil morphology and chemistry. For instance, some soils in this area may have a high chroma due to a high pH.	Yes. We think the descriptions and User Notes are adequate to apply the indicators correctly in most cases. As stated in the User Notes, S6 can be difficult to identify. If in doubt, ask a soil scientist with local experience.
RD	3	41	General	If we are to use this should it be tied directly with the Hydrology criteria "Geomorphic Location"?	No. While the indicator is mainly found in depressional landforms, as stated in the User Notes, it is not restricted to that landform. No change is necessary.
JG	3	41	General	A16 is not restrictive enough. Move the first sentence of the user notes up into the definition, and define the "intermound" part it would help. Is there a glossary for such terms?	The current restrictions (e.g., MLRA 150A) are sufficient and the User Notes provide more information but are not intended to be restrictive.
JG	3	45		Does the matrix below need to be high value/low chroma?	No. No change is needed.
JG	3	45		S6 is a nightmare. The Mid-Atlantic Hydric Soils Comm. has drafted a suggested revision and it has gone to NTCHS through Lenore Vasilas. A16, S6, and S5 should require a depleted, gleyed, or reduced layer immediately underneath to prevent misuse. I have seen S5 on the sides and top of recent sand dunes	The proposal to revise the wording for S6 was rejected by the NTCHS.
	3	50		Title indicates Loamy but Tech. Description does not discuss texture?	All F Indicators are for loamy very fine sand or finer by definition (see page 49). No change is necessary.
JG	3	55		F10 Marl - Marl forms from periphyton algae mats in the Everglades as well, so it is not always a lake (limnic) deposit. I have published references on this. Maybe marl is also found in non-hydric soils in the Everglades. This should be investigated.	It is not clear what is being suggested -- delete the word "limnic"? Otherwise the User Notes seem appropriate.
TR	3	57		F12 - Would a soil with a low chroma layer 1/8 inch thick meet this indicator if the layer occurred at the surface?	Yes.

JG	3	64		Why are just these two problem hydric soils listed here when there are others discussed in Ch. 5? This should be clarified for the user.	It states in the heading that these are "Indicators for Problem Soils." These are the only two recoginized for this region. Chapter 5 provides options for hydric soils that lack indicators.
LABG		64	General	Are there only two indicators for problem soils in the A&GCP or are only two currently known?	See the previous response.
LABG	3	64	General	Indicator TF2 is also found in Virginia	This indicator applies to problem areas with red parent material across the entire region. The User Note simply states where it is "most commonly found." No change is necessary unless we are greatly underestimating its extent in Virginia.
LABG	3	64	General	Can guidance be provided on describing soil profiles when the region is in drought and the soils are powder?	Guidance is already provided, stating that soil colors should be for moist soils and the describer may need to moisten the soil (page 26). We will expand on this guidance.
JG	3	65	add	There are several taxa in Soil Taxonomy (http://soils.usda.gov/technical/classification/) that correlate well to hydric soils. These are: Histosols (other than Folists), Histels, Aqu suborders of most soils except sandy Spodosols and all Psamments, Sulfi great groups, and Histic subgroups. Some Mollic, Umbric, Humic, Pachic, Cumulic, Vertic, Fluvaquentic, Fluventic, and Anthraquic subgroups may be hydric as well.	As stated in a previous response, we have attempted to limit the amount of unnecessary soils jargon, including taxonomic names. In general, they are not needed to identify hydric soils.
LABG	4	66	General	this section needs to define what wetland hydrology is. There is a definition for hydric soils, and a basis for hydrophytic vegetation, both mentioned in their respective introductions. If the 5%, 5 to 12.5% and >12.5% of the growing season are still to be used, this should be mentioned in the introduction.	Wetland hydrology is defined in the glossary of the 1987 Manual. The definition is not very relevant here, however, because indicators of wetland hydrology have a more limited role than indicators of hydric soils or hydrophytic vegetation. As explained on page 66, wetland hydrology indicators only indicate a recent EPISODE of wetness and cannot verify that the full hydrologic regime appropriate to wetlands is present. The 5%, 12.5%, etc., thresholds are being dropped in favor of a default 14 days of inundation or saturation. This is explained in Chapter 5 because it is mainly relevant to disturbed or problematic sites.
LABG	4	66	1	last sentence – the word 'confirm' is pretty strong. It is true that wetland hydrology indicators should confirm that an episode of inundation or soil saturation has occurred, but in reality some indicators may only 'suggest' such. **A distinction should be made between hydrology indicators and wetland hydrology indicators**. Also in this sentence a time frame should be given for 'recently'.	With appropriate cautions described in User Notes, "confirm" is appropriate. We don't understand the reviewer's distinction between "hydrology indicators and wetland hydrology indicators". In general, "recent" is within the last 2 years or so, on average, in keeping with the concept that wetlands are wet at least 5 years in 10 over a long-term record. However, giving 2 years as absolute would be wrong because, in any long-term climatic record, dry periods may extend several years even if the overall probability of recurrence is 50%. We prefer to keep this guidance general. Further restrictions are given in User Notes for individual indicators, as needed.
LABG	4	66	2	first sentence – not sure that 'ephemeral' is an appropriate term. Can a definition be provided?	We agree. We will reword the sentence.
LABG	4	66	4	line 5 – "If possible, one or more site visits….. normal wet portion….site." I guess it is appropriate to state "if possible", but it would be nice if a sentence was added stating that the practicality of this is very low/limited.	The working group understands that repeat visits to field sites are not always possible. There are very few places in this supplement where a repeat visit is required.
TR	4	67	1	I think going to 14 days and getting away from percentage of growing season is a very good idea. The very short durations at some northern latitudes never made any sense.	No response is needed.
JG	4	67	General	I object to the use of the growing season in the Coastal plain. It has been proven that the biological growing season is continuous (Burdt, A.C., J.M. Galbraith, and W.L. Daniels. 2005. Land-Use Effects on Growing Season Length Indicators in Southeastern Virginia Wet Flats. Soil Sci. Soc. Am. J. 69:1551-1558.)	We agree, at least for some portions of the coastal plain. We will add a discussion of recent literature pointing out that the growing season is year-round in some portions of the region.

JG	4	67	1	Does the technical standard (sentence 13) correlate well with the technical standard developed by the Nat. Tech. Comm. for Hyd. Soils? Tech. note 11 @ http://soils.usda.gov/use/hydric/ntchs/tech_notes/index.html	The two standards are different because they have different purposes. NRCS also has a wetland hydrology criterion in the National Food Security Act Manual that is different again. To avoid confusion among users of this supplement, whenever a hydrology-based standard is needed, we use same one (USACE 2005) that was based on National Academy of Sciences recommendations (NRC 1995).
JG	4	67	3	Please explain if one of these indicators supersedes another or carries more weight than others, or if the user can use the best fit of any of them.	We will reword this section to clarify that the preferred approaches to identifying the growing season are on-site observations of plant activity and soil temperature in a given year, whichever occurs first and/or persists later. The 28-degree-F air-temperature approximation should only be used if the other approaches are impractical.
JG	4	68	1d	Could this be bud swell instead?	No. Green material must be visible between the spreading bud scales.
JG	4	71	General	How do we know the duration?	It is not necessary to know the duration. Wetland hydrology indicators indicate a recent EPISODE of flooding, ponding, or shallow water tables. Under the 3-factor approach, we rely on indicators of hydric soils and hydrophytic vegetation to tell us that the frequency, duration, and seasonal timing of inundation or saturation was been sufficient over a period of years to create/maintain a wetland (see page 66).
JG	4	72	General	How do we know the duration?	See the previous response.
JG	4	73	2	The comment about saturation above the watertable is an oxymoron. The capillary fringe is by definition a zone above the water table with some saturated zones and some aerated zones. It does not have a suction of 0 KPa or less, which is the definition of a saturated zone. The water is pulled into the soil above the water table by the negative water potential. This should be moved to a secondary indicator.	See the definition of saturation given in the glossary. For wetland delineation purposes, the 1987 Manual and this supplement recognize the presence of a "saturated" zone above the water table.
JG	4	72	1	This depth does not apply to sandy-textured soils. It is 15 cm in sandy soils.	The 1987 Manual, the National Academy of Sciences report, and this supplement all specify the upper 12 inches as the zone of interest, regardless of soil texture. NRCS differs. Wetland hydrology criteria given in the National Food Security Act Manual specify 6 inches for sands.
JG	4	73	General	I disagree with using this as a primary indicator. If I can see an empty pore, it is not saturated. The capillary fringe is above the free water table, and has negative water pressure (suction).	Again, the supplement's definition of saturated is given in the glossary and includes part of the capillary fringe. The issue is whether the soil layer is sufficiently waterlogged that it goes anaerobic and, thus, promotes the development of hydric soil indicators and a hydrophytic plant community.
JG	4	74	General	How do we know the duration?	See response in row 144 of this spreadsheet.
JG	4	74	Figure	In this picture, there are sediment marks and water marks. Please use a scale or insert a ruler or put lines or arrows to indicate the difference.	The reviewer's comment is true. Thus, the caption refers to the "dark stains" as the water marks. However, we will clarify by adding an arrow to the photo.
JG	4	75	Figure	In this picture, please use a scale or insert a ruler or put lines or arrows to indicate the 60-cm height.	We will make the recommended change.
JG		76	General	This is unreliable. I see drift on well-drained soils in floodplains. There must be a qualifier for use of this, such as a frequency of redistribution or duration of floating.... See how easy this one gets complicated?	The existing Caution is intended to make users aware that drift lines should be discounted if they are known to result from unusually high water levels. In any case, the 3-factor approach ensures that areas with indicators of only one factor will not be mistaken for wetlands.

JG	4	76	4	Please see Burdt et al., 2005 for a complete explanation of the NRCS NWCC growing season data in this region. Burdt, A.C., J.M. Galbraith, and W.L. Daniels. 2005. Land-Use Effects on Growing Season Length Indicators in Southeastern Virginia Wet Flats. Soil Sci. Soc. Am. J. 69:1551-1558. They determined it to be year-round for microbes. Not one single published article claims it to be less in any part of this Region. That may not be true in other Regions.	See the response in row 140 of this spreadsheet.
JG	4	79	Figure	Could the Fe deposits shown in 4-10 be confused with acid-mine drainage on a non-wetland site where mined or dredged materials have been recently exposed? I would not use the red stains, just the sheen.	Actually, the indicator focuses on the stains, not the sheen. The stains can be used even when the site is dry. If a sheen were present on standing water, then indicator A1 would apply. In any case, the 3-factor approach ensures that areas with indicators of only one factor will not be mistaken for wetlands. This includes areas affected by acid mine drainage.
JG	4	82	General	Can fauna that require submersion or floating for a part of their life cycle be included? if they require standing water for two or more consecutive weeks?	Yes. Examples?
JG	4	83	General	What about the marl forming in the Evergaldes from Periphyton in flowing water?	We will add "flowing" to the User Note.
JG	4	83	General	Need a definitive test to identify marl. I think this would work, but need an expert's opinion. "Marl can be identified by a violent reaction with dilute (10%) HCl in an air-dry condition."	As in hydric soil indicator F10, we will mention that marl reacts with HCl to evolve CO2.
JG	4	83	Figure	How do you get free iron in a high pH calcareous system? Iron should be insoluble at high pH.	We do not have an answer to the question.
JG	4	85	General	Isn't this already covered with other indicators? Seems subjective. What if the veg. is annual and hasn't come out yet? or even worse, covers the area later? Can you put a seasonal restriction to this?	We see no need for restrictions. If vegetation appears late in the season, then the indicator would not be met at that time and other indicators should be used.
JG	4	86	General	How can we realate these to frequency and duration of flooding?	See the response in row 144 of this spreadsheet.
JG	4	67	General	This Section is not my area of expertise, but it seems like you need a simple way to let people know that even if the vegetation indicators are not present, the growing season for microbes and for respiration from tree roots is on year-round in this Region. Why not make it simple and just say year-round? Please see http://soils.usda.gov/use/thematic/images/soil_temp_reg.jpg It shows only a tiny part of the Region with a mesic soil temperature regime, and even there there are published reports of continuous microbial or vegetative growing seasons. Growing season should never ever be based on WETS tables. The best choice is to declare it year-round, else use the on-site measurements in 1 and 2 below.	See the response in row 140 of this spreadsheet.
TR	4	67	General	This section needs thoughtful revision. The list of growing season indicators is a good idea, but there are some with complications. For example what does the wording “or the surrounding area” in the first paragraph mean? 5 feet? 100 yards?	Yes. To be useful, growing season is a concept that applies to landscapes. It should not be different from point to point on the ground. Within the restrictions given in this section, the supplement recognizes that broad areas have the same growing season.
LABG	4	67	1	It needs to be emphasized that the standard requirement of 14 or more consecutive days (COE, 2005) is for **highly disturbed or problematic sites** and not for normal conditions. There is no discussion on the length of hydrology for delineating under ‘normal’ situations/conditions. Overall, it should be explained why the length of 14 days was chosen.	As stated in the supplement, the 14 days is based on National Academy of Sciences recommentations, in the absence of other standards established for a particular region or wetland type. Wetland determinations in routine cases are based on presence or absence of indicators. Thus, there is no need for a hydrologic standard for "normal" situations, and the supplement does not give one. The standard is invoked only in disturbed or problem cases.

LABG	4	67	General	We discussed removing the idea of a growing season from this supplement because studies have shown that (at least in wetlands) there is a continuous growing season, based on soil temperatures, in the Atlantic and Gulf Coastal Plain region. Subsequent discussion suggested just removing the reference to temperatures (air/soil), but keeping the indicators of biological activity. I agree that generally there is a distinct growing season based on biological activities, but I do not believe there are a lot of data/studies documenting the specifics to this region. Also this concept of indicators of biological activity is too new and not fully defined to be used at this time. Several key questions are:	See the responses in rows 140 and 142.
LABG	4			Which life form (trees, shrubs or herbs) are better indicators?	We agree that these are important issues and different people can have different opinions. The same issues have been discussed by various regional working groups and by the National Advisory Team. The NAT developed the standardized wording used in this and previous supplements. In the future, proposals for changes in the supplements, along with supporting data, should be submitted to the NAT.
LABG	4			Is the biological activity to occur on one individual of the species or 10, 20?	See the response in row 165.
LABG	4			Are certain species better indicators than others?	See the response in row 165.
LABG	4			Landscape position, surrounding land use (especially urban areas) could influence biological activity.	See the response in row 165.
LABG	4			Is bud burst or emergence on one branch ok or does the entire tree need to exhibit this biological activity?	See the response in row 165.
LABG	4			Has the growing season ended when woody deciduous trees lose some OR all of their leaves? Some species will lose their leaves sooner than others, so which species do you use?	See the response in row 165.
LABG	4	67	3	In the sentence “The growing season has begun and is ongoing if either of these conditions is met”, it is unclear what is met.	See the response in row 165. It means that the beginning of the growing season is indicated by whichever condition (i.e., item 1 or 2) occurs first, and the end of the growing season is indicated by whichever occurs last.
LABG	4	67	General	Are growing season determinations always going to be subject to COE approval? This manual should set the standard and state that other methods may be acceptable, but need to be approved by the local COE district. Guidance should be provided on how to obtain approval of a growing season determination. Are there currently any growing season determination approaches that the COE says are not acceptable?	The procedures in this supplement are "approved". We will delete the sentence.
TR	4	68	1	1a. – numerous small herbaceous species (e.g., chickweed, common lespedeza) may emerge in January or February, especially following warm periods. This is well before the actual growing season dates normally used in portions of the region. They will not be in a wetland, but in the “surrounding area.” This small group of species will cause confusion to many people. What about winter wheat and ryegrass which are not evergreen, but are green all winter? We might consider focusing on the woody species whose life cycles seem to coincide more closely with most people’s concept of the growing season.	See the response in row 165.
TR	4	68	4	2. The change to 12 inches from 20 probably is a good idea. Any references for it? Having said this, I imagine that during many winters, soil temperatures at 12 inches never go below 41C. This certainly will be likely in the deep South.	In all other aspects of wetland delineation, the focus is on the top 12 inches. For consistency, the 12-inch depth was used here as well, even though we know that soil temperatures at 12 inches are more variable than at 20 inches. Also see the response in row 140.

LABG	4	68	2	drought should also be mentioned as it could cause plants to prematurely drop their leaves.	The statement as written would include drought, which would simply make the "dry season" start even earlier. Soil temperature is the alternative.
LABG	4	68	4	it may not always be possible to measure soil temperature at 12 inches, especially if the soil depth to bedrock or other restrictive layer is less than 12 inches. It is unclear why a one-time measurement is sufficient and why it is not required. How do you know if you are in the growing season? In northern Virginia soil temperatures can fluctuate above and below 41 °F (5 °C) within a matter of a few days between January to March.	See the response in row 174. If the soil is shallow, measure at the maximum depth. Growing season information is not needed to carry out a wetland delineation in most cases; therefore, soil temperature measurements are not required.
TR	4	68	5	I think the idea of different groups for different types of hydrology is good. I however disagree with some indicators and think several should be reassigned to a different category (i.e., primary or secondary).	We will respond to specific suggestions below.
LABG	4	68-69		for group D what are time frame suggestions to distinguish between contemporary and historical?	No firm thresholds are needed. See the response in row 136.
LABG	4	69		Are there many other indicators of wetland hydrology that are listed somewhere, but not included in this supplement or others that have not been thought of yet (speculatively what percentage of current indicators could this be)? What is considered appropriate documentation for other evidence of wetland hydrology?	We have no examples of "other evidence" but do not wish to exclude valid observations. The documentation must be sufficient to convince others and, potentially, to stand up in court.
LABG	4	70		Group D is to consist of vegetation and soil features. Geomorphic position does not fit either category.	We will revise the wording to include landscape features.
TR	4	70	table	A2 – I have reservations about using non-growing season observations. The caveat probably should be the presence of other hydrology indicators and strong indicators of soil.	Sufficient cautions are given in User Notes for each indicator. The user always has the option of returning during the growing season if other indicators of wetland hydrology are absent. In any case, the 3-factor approach ensures that areas with indicators of only one factor will not be mistaken for wetlands.
TR	4	70	table	A3 – The wording of this indicator needs revising. The requirement for a restricting layer within 12 inches of the surface would eliminate one of the most common hydric soils in this area. The Guthrie series is found in both depressions and slope wetlands throughout central TN. It has a fragipan, but it commonly is deeper than 12 inches.	If the restrictive layer is deeper than 12 inches, there is room for a water table below the saturated zone and the indicator would be met. The waiver for shallow restrictive layers was simply because of insufficient room for a true water table to develop. There is no requirement for a restrictive layer within 12 inches.
TR	4	70	table	B1 – B3 – I think these should be “secondary” indicators. They denote flooding or inundation, but really do not reveal much about the duration. This especially is true of B2 and B3. In spite of the cautions, they are subject to misinterpretation.	See the response in row 144 of this spreadsheet.
TR	4	70	table	B5 – Acid mine drainage may be confused with this indicator. Also, a sheen caused by bacterial colonies may be confused with this indicator. Maybe more guidance is needed on identifying iron deposits.	See the response in row 154.
TR	4	70	table	B13 – There potentially are interpretation problems with this one, especially as a primary indicator. For example, frogs lay eggs in many types of depression. Many of these stay wet long enough for eggs to hatch and tadpoles to develop, but are not wet enough to be wetlands. We all see ruts in roads with this indicator. If it is maintained, it should not have primary status.	The presence of tadpoles indicates that inundation occurred over at least a few days and often 2 weeks or more, depending upon the species. This is a strong indicator of recent inundation and, therefore, deserves the Primary rating although the area may not qualify as a wetland. The 3-factor approach ensures that areas with indicators of only one factor will not be mistaken for wetlands.
TR	4	70	table	B8 – This is a good idea, but the requirement for less that 5% cover seems too restrictive. I think increasing it to 15 or 20% would be more realistic. Most of the depressions in bottomslands will have more than 5% cover of a few species (e.g., lizard’s tail, arrowhead, etc.)	The intended focus is on nearly unvegetated concave surfaces due to ponding. If more plant cover is present, then other indicators must be used.

TR	4	70	table	B10 – This indicator has always been one I have had difficulty with. It is indicative of flow and the places I see it typically are not wetlands	Drainage patterns do indeed indicate flowing water, and many areas that have drainage patterns are not wetlands. The 3-factor approach ensures that areas with indicators of only one factor will not be mistaken for wetlands.
TR	4	70	table	B16 – Moss trim lines seem like a relatively strong indicator to me, but there was disagreement among our group during the conference call. In many areas, I even would consider making it a primary indicator.	The working group felt that Secondary was appropriate in this region.
TR	4	70	table	C1 – This is a strong indicator, but as I noted above in the soil section, it very commonly is confused with earthy aromatic compounds. Does it ever occur without other indicators being present? I suggest making it a secondary indicator given potential problems.	This is a training issue and not a fault with the indicator.
TR	4	70	table	B9 – I thought this indicator would disappear because of all the problems with it over the years, and still believe that it should. If it is maintained, it should be restricted to surface leaves and maybe should be restricted to concave landforms. Given all the interpretation problems, it should not be a primary indicator.	We are not aware of interpretation problems with water-stained leaves beyond the cautions given in the User Notes. Members of the working group believe it to be a reliable indicator worthy of Primary status.
TR	4	70	table	C4 – I have had trouble telling if color changes occur because of chemical reactions or are simply due to drying. I imagine others have the same concern. Also, a ferrous iron test only tells us about the condition on that day-not necessarily about long term conditions. At a minimum, I would think about eliminating the color change portion of this indicator.	Do not allow the samples to dry. If they do, then moisten them again. If a color change was due to a reaction with oxygen, it will still be evident after remoistening. If not, do not use the indicator. The presence of reduced iron indicates a long period of saturation and anaerobiosis and not just wetness that occurred that day.
TR	4	70	table	C6 – I do not much experience with this indicator, but think it is too subject to interpretation and should have secondary status.	The working group disagrees.
TR	4	70	table	C7 – I do not understand the logic for restricting the layer thickness to 1 inch or less. Any muck on the surface certainly suggests very wet conditions. Would a thick muck layer not indicate an active wetland hydrologic regime as well as a thin one?	The 1-inch threshold is arbitrary, but the indicator must be restricted to thin muck layers. Muck farms that have been drained for decades and used to grow vegetables often still have thick muck surfaces. Thus a thick muck surface does not reliably indicate active wetland hydrology.
TR	4	70	table	C2 – I agree conceptually with this indicator, but **ones like this should have caveats that soil and vegetation indicators should be present and strong**. The last sentence on page 94 (C8) would be ok.	The supplement does not recognize different "strengths" of soil or vegetation indicators. Hydric soils and hydrophytic vegetation are either present or absent. The 3-factor approach already requires that evidence of all three factors be present to determine that the area is wetland.
TR	4	70	table	C8 – I think this is generally a good indicator, but several in our groups seemed to disagree as they knew of several species burrow deeply. I think its secondary status and the caveat in the last sentence make it ok.	No response is needed.
TR	4	70	table	D2 – There is so much variability with conditions in similar landscape positions, I wonder if this is a good idea. At a minimum, it also should have caveats about soils and vegetation. I do not understand the last sentence in the caution paragraph. If you know the water table is near the surface, you do not need this indicator. ??	This indicator is only Secondary. Therefore, to conclude that the area is a wetland already requires at least one additional secondary indicator of wetland hydrology, plus indicators of both hydric soil and hydrophytic vegetation. Do not use it on sand and gravel substrates unless a shallow water table is present, in which case you can also use indicator A2. Check all indicators that apply.
TR	4	70	table	D3 – I do not care for this indicator because most of the people conducting delineations will be competent to identify the aquitard (aquatard?). Clay layers are relatively easy; some of the others are not. Some soils have fragipans, but the pans are discontinuous. I have heard disagreements about whether or now spodic horizons are aquitards. I do not have any idea about how to identify lacustrine desposits that are aquitards.	To help identify an aquitard, we will add that generally there is little or no root penetration through an aquitard and, thus, the roots run parallel to the surface.
				D5 – Although this indicator has been around for over a decade, it still is viewed by many as “double counting” the plants. I agree to a degree with this concept and with all the new indicators, I probably would delete it.	The FAC-neutral test is not used for a hydrophytic vegetation indicator. It is only used as a wetland hydrology indicator.

LABG	4	70	Table	For Groups B, C, and D there are values that are missing, such as B11 and B12. Will the indicators be renumbered to be consecutive or an explanation (and inclusion) of what the missing indicators are?	Indicators have been numbered sequentially since the first regional supplement was published for Alaska. An indicator has the same designation in all regions where it is used.
LABG	4	70	Table	Suggest moving all of the B's except B1 to secondary indicators. However, further discussion will suggest removal of several of the B indicators.	We will respond to specific suggestions.
LABG	4	71		Group A Indicators – as in the hydric soils section, there are redundant sentences in the Cautions and User Notes that could be stated once prior to, or at the beginning of, this section.	This format has been established in all previous supplements.
LABG	4	73		Could the restrictive layer or bedrock be at a depth greater than 12 inches and allow saturated conditions to occur within 12 inches. It should be standard to record depth to water table on data forms. This will provide consistency on where to find the information.	See the response in row 182.
LABG	4	75		Cautions and User Notes, last sentence – if this sentence is in reference to streams, then it is not needed. However, if it refers to wetlands that could be located within the "stream channel", outside of the ordinary high water mark, clarity and/or more explanation is needed.	We do not understand the comment.
LABG	4	76		How often are drift deposits a true indicator of primary wetland hydrology? They are an indicator that water has moved through an area, but does not provide any indication as to the length of time the water was present. I have often seen this indicator misused when the drift deposits were caused by stormwater flow on slopes, especially near urban environments. Therefore, I suggest removing this indicator or at the very least making it a secondary indicator and not a primary one.	See the response in row 144 of this spreadsheet.
LABG	4	76		Do functioning drainage systems refer to stormwater management features, ditches, etc.? This could be better described.	They refer to any features designed to drain surface water or groundwater from an area.
LABG	4	77		How credible are algal mats in determining wetland hydrology? I suggest making this indicator secondary and not primary.	The explanation for their Primary status is given in the User Notes. Although not required for a Primary designation, this is one case where the indicator reflects prolonged inundation.
LABG	4	79		Cautions and User Notes should also caution that this indicator could be from a pollution source; a non-biological oil sheen. Add the tip that helps determine if the sheen is from a biological source or not. I suggest making this a secondary indicator instead of a primary indicator.	We will add the observation that iron sheens will crack into angular pieces when touched. The working group thinks that the Primary designation is appropriate, given that the indicator reflects that anaerobic conditions were present.
LABG	4	79	Figure	Figure 4-10 is not pertinent since it is in a stream and not a wetland. Also there is no scale in the photo.	We used the best photo available to us; it clearly shows what iron deposits look like.
LABG	4	80		Indicator B7:This can be a tool to assist in the location of where wetlands may occur on a site, but should not be used as a primary indicator of wetland hydrology. There are too many instances where this indicator could be misused. Therefore, I suggest removing this indicator.	The reviewer gives no explanation about how the indicator could be misused. The working group believes that, with the cautions given, standing water on a photo should be given the same weight as standing water observed during a site visit.
LABG	4	81		Indicator B9:This indicator was previously a secondary indicator. Why the change to primary indicator? I suggest it potentially be removed or at a minimum be a secondary indicator and not be made a primary indicator. There are several studies that document that leaves can become blackened in winter and are not a reliable hydrology indicator. Also different species will react differently to based on hydroperiod.	Under previous guidance, water-stained leaves were given Secondary status simply because they were not listed in the 1987 Manual. In this region, the working group believes that they are reliable as a Primary indicator. We would appreciate references to literature showing that they develop over winter (although, in some parts of this region, the growing season is year-round).

LABG	4	82		Indicator B13: Using any form of aquatic fauna for a determination lends itself to misinterpretation. There are too many species, which have different life histories and habitat requirements, to make them a good wetland hydrology indicator. It would require someone well versed in the particular group of organisms to make a proper determination. For example, benthic macroinvertebrates, crayfish and amphibians have been used to determine stream flow regimes (perennial versus intermittent). Broad interpretation of certain findings would result in a perennial determination, whereas more detailed species information may result in an intermittent determination. Therefore, I suggest removing this indicator.	Several issues are confused in this comment. For one thing, a water regime that is "intermittent" does not necessarily mean that an area is non-wetland. Therefore, distinctions between fauna of perennial and intermittent streams are irrelevant. Having "too many species" of aquatic fauna is not a problem. The question is whether the presence of fauna that require standing water is a reliable indicator of a recent episode of inundation. The working group believes that it is.
LABG	4	84		Indicator B6: Although this indicator seems reasonable on the surface, I'm not sure how foolproof it is and therefore, recommend removing it.	No wetland indicator is "foolproof." All have caveats and require experience and common sense. That said, it is not clear what the reviewer's concern is with this particular indicator.
LABG	4	85		Indicator B8: How big of an area is needed to utilize this indicator: 2 square feet, 10 square feet…..?	In theory, there is no minimum size for a wetland, although Districts may consider size in their jurisdictional determinations.
LABG	4	86		Indicator B10: Why was this changed from a primary indicator? I agree that it is better suited as a secondary indicator. However, I do not think "low vegetation bent over in the direction of flow" should be included in this indicator. This can be the result of storm flow, especially in an urban setting, and not an indicator of wetland hydrology. Also remove figure 4-18, plus there is no scale of reference in the photo.	The working group agrees with the reviewer that the indicator should be Secondary. The working group will reconsider what photographs are used as examples.
JG	4	87	General	So what do you do then? Is this indicator complete, or should those species be identified here by pictures.	We do not understand the comment. If the indicator is absent, do not use it, no matter what species are present.
LABG	4	87		Indicator B16: This indicator is not necessary. Watermarks or sediment deposits would occur in the same situation as moss trim lines and therefore, this indicator would be redundant.	Perhaps, but not necessarily.
LABG	4	88		Indicator C1: What is meant by an ongoing wetland hydrologic regime? The Cautions and User notes should also suggest that this is primarily found in tidal wetlands and not generally inland. Also the presence of sulfur, which is not found in all soils, is needed for it to become reduced.	It has a hydrologic regime appropriate to wetlands. The indicator is not restricted to tidal wetlands although it is common there. We will revise the wording.
	4	89		Should this be 15 cm for sandy textures?	This supplement follows the Corps Manual and the National Academy of Sciences report (NRC 1995), both of which recommend a 12-inch critical depth, independent of soil texture.
JG	4	89	General	Indicator C3: This used to be a secondary indicator. Why did it change to a primary indicator? In Cautions and User Notes – it is implied that oxidized rhizospheres do not have concentric layers or transfer iron stains. If this is true, an added sentence stating such would provide clarity.	Most regions have opted for a Primary status for this indicator, based on experience with it over the last 15 years. The User Note is making a distinction between iron and organic matter, and says that iron may be identified by the way it transfers stains to the fingers when rubbed. It does not imply that oxidized rhizospheres do not transfer iron stains.
LABG	4	90		Indicator C4: Are there other situations that could cause the soil to change color upon exposure to the air?	Only drying of the sample, and the reference to details in Chapter 5 already addresses this.
JG	4	90	2	Why do you call them problematic here when they are called "problem" hydric soils in the other parts of this document?	We do not make any distinction between "problem" and "problematic".
JG	4	90	2	The user must be careful not to use iron tools when excavating the soil sample to be tested, or the part that encounters the iron tool must be discarded.	This is mentioned in Chapter 5 (page 115) but we will repeat the caution here.
JG	4	91	General	To be primary, should the soil matrix have chroma < 2? but only a secondary indicator if the matrix chroma is > 2?	No. The indicator consists of the presence of reduced iron. We will clarify that there are no initial color requirements for the soil layer in question.

LABG	4	91		Indicator C6: How often does this situation occur and is needed when there are no other wetland hydrology indicators? How does this differ from oxidized rhizospheres? An explanation would be helpful.	It often occurs in tilled wetlands which, due to the disturbance, sometimes have no other hydrology indicators. These are not oxidized rhizospheres because no living roots are required.
JG	4	91		The features around OM would be soft masses rather than pore linings.	We will reword the indicator to include soft masses.
JG	4	91		Why not make a thick muck surface a secondary indicator? Otherwise you penalize very wet soils that have > 1 inch of muck. that would include some Histosols!!!	For reasons given in the User Note, the indicator is limited to thin muck surfaces. If a thick muck surface is present, then the delineator must use other wetland hydrology indicators.
JB	4	91	2	but in most cases indicates a very wet soil. This should be reconsidered. I do not recall many mucky surfaced soils that have been drained, except those that are farmed. Why not just caution the user to validate the hydrology by some other means if the muck is thick?	See the previous response.
LABG	4	92		Indicator C7: Remove the word 'thick' in the General Description. Provide picture to illustrate the thin muck surface.	See the previous response. We have no picture of this indicator.
LABG	4	93		Indicator C2: Why specify 12 to 24 inches? The depths should not be so rigid. In Cautions and User Notes, second sentence – This implies that it is 'always' true, but this is not likely the case	For reliability and consistency of use, a depth range must be given. We do not believe that depths below 24 inches should be considered for this indicator.
JG	4	93		This one is not listed on the determination form, and should be dropped. It has too many undefined variables to be consistently applied. To tighten it up, you could say within 12 inches of the required depth (15 or 30 cm) one month after full leafout of the dominant (most extensive canopy cover) vegetation layer.	It is on the form, listed among the Secondary indicators. The added restrictions simply complicate the issue and are not needed.
JG	4	94		The use of crayfish burrows needs a restriction on its use to prevent a false positive indication, such as a landform restriction (e.g., floodplains) landscape position (e.g., footslopes or toeslopes), or a maximum slope angle. Another idea is to restrict burrow use to being coupled with only with a particular list of secondary indicators.	The restrictions are not needed. The distribution of crayfish burrows in nature is already limited largely to such areas. As a Secondary indicator, other indicators of wetland hydrology are already required.
JB	4	94		Some species (e.g., Distocambarus crockeri, Welch and Eversole 2006) are not closely associated with wetlands or aquatic habitats. Therefore, use this indicator only if indicators of hydrophytic vegetation and hydric soil are also present on areas with slopes of one percent or less.	This comment is largely quoted from the User Note; therefore, we agree. Slope is not relevant.
LABG	4	94		Indicator c*: As stated previously utilizing organisms is not recommended for making determinations. Therefore, I suggest removing this indicator.	The National Academy of Sciences (NRC 1995) recognizes that wetland fauna are reliable indicators of wetland conditions. This supplement follows their general recommendations.
JG	4	95		drown-outs or unplanted areas within planted fields	We do not understand the comment.
JG	4	95		Recent satellite imagery such as ASTER can be used to detect moist surfaces, and multiple dates can be obtained in the same year.	The indicator says that satellite images may be used. However, aerial photography is more commonly used.
JG	4	96		Too vague and too variable to be reliable. I recommend deleting this one.	The working group disagrees. This indicator has been adopted by several regions. It simply recognizes that landscape position is an important predictor of the occurrence of wetlands, at least in humid regions with abundant rainfall. As a Secondary indicator, at least one additional Secondary indicator is required to conclude that the area has wetland hydrology. Furthermore, the 3-factor approach ensures that areas with indicators of only one factor will not be mistaken for wetlands.
LABG	4	95		Indicator C9: Does this pertain to all types of aerial imagery or leaf off, color infrared? As stated for Indicator B7 – Inundation visible on aerial imagery, this can be a tool to assist in the location of where wetlands may occur on a site, but should not be used as an indicator of wetland hydrology. There are too many instances where this indicator could be misused. Therefore, I suggest removing this indicator.	There are no restrictions on the type of imagery that can be used. Adequate cautions and restrictions are given to ensure that signatures reflect wetness and not some other factor. In any case, the indicator is Secondary and requires at least one additional wetland hydrology indicator, plus indicators of hydric soils and hydrophytic vegetation, to conclude that the area is a wetland.

LABG	4	96		Indicator D2: This can be a tool to assist in the location of where wetlands may occur on a site, but should not be used as an indicator of wetland hydrology. Therefore, I suggest removing this indicator.	See the response in row 236.
LABG	4	97		Indicator D3: What is the added value of using a soil feature to be an indicator of wetland hydrology? I suggest removing this indicator.	The issue is not whether the indicator is a "soil feature" but how reliably it indicates whether wetland hydrology is present. The working group believes that this is an appropriate Secondary indicator.
JG	4	97		It is very subjective to say that a soil or rock layer is "capable of being an aquitard" but you can measure KSAT values and you can detect gray colors and redox features above a horizon with very slow KSAT rates. Can you rely on people to be able to identify a fragipan? or orstein?	The User Notes already mentions the presence of redox features above the layer as one way to identify an aquitard. We will also add that aquitards can be identified by the lack of root penetration. This guidance should be sufficient for the purposes of a Secondary indicator.
JG	4	98		Show example worksheet.	We will add an example of the FAC-neutral test.
LABG	4	98		Indicator D5: What level of non-dominant species should be considered – all of them?	Yes.
JG	5	99	Title	Not sure what a wetland situation is. Please delete the term and use the terms you used in the introduction.	No change is needed.
JG	5	100	2.d.	or use the change in color upon exposure to air as a positive test for reduced iron or the hydrogen peroxide test for presence of reduced Mn or the measurement of a very low redox potential as advocated in the NTCHS hydric soil technical standard.	This list was not intended to be exhaustive but gives the options that are typically most useful. We will add the color change example.
JG	5	101	3.c.	The use of hyperlinks is dangerous if they are not cited with full contact information so a person can trace their source if the web link is altered or discontinued.	We agree.
TR	5	99	General	D5 – Although this indicator has been around for over a decade, it still is viewed by many as “double counting” the plants. I agree to a degree with this concept and with all the new indicators, I probably would delete it.	Working groups in almost every region have voted to include the indicator, with Secondary status.
LABG	5	99	General	The following situation is not covered: non-vegetated swales in relatively dense forest cover. An abundance of undisturbed leaf litter is often present in the swale. Soils are undoubtedly hydric. There is water to the surface or close to the surface, but does not break the surface during the growing season. The tree species on the edges of the swale are generally not hydrophytic species (FACU) and overall the plant community is not hydrophytic. According to the Cowardin classification this would be a PFO wetland, but with vegetation sampling restricted to the swale, there is no vegetation; hence the contradiction. Plus all three wetland parameters/features are not met. Any suggestions?	If the area is never vegetated, it is not a wetland by Corps/EPA definition.
LABG	5	100	4	Vegetation, c. – How often is the information on typical vegetation on soil map units relevant/accurate?	Often.
LABG	5	101		a. – how is it determined that water marks or drift lines are relict?	The delineator can make this judgment based on site characteristics and any other available information. Often the change in hydrology is obvious because of the presence of man-made structures or other features.
LABG	5	101	c	c. Cannot directly access the web site with the url listed	The web link works today (3-14-2008).
LABG	5	102	General	This section uses Recommended Procedure (page 102) and the other sections (pages 113 and 116) use Procedure. Provide consistency.	We agree. We will revise the heading for consistency.
		103 - 104		Part of the guidance on evaluating vegetation in droughts (pages 103 – 104) seems somewhat illogical. Step 2 (2) (b) recommends using a	Correct. But on a reference site the actual hydrologic regime is known. We know the reference site is a

LABG	5	103	2	2. a. – Is the list of wetland types comprehensive or a general list, which does not include all wetland types?	It is not intended to be comprehensive. What other wetland types do you suggest?
LABG	5	103		2. a. (1)(c) – early growing season aerial photography, NWI maps, soil survey reports, remotely sensed data, etc. do not provide plant community information at a level of detail sufficient to determine the presence/absence of a hydrophytic plant community. The last sentence is also similar to 2. a. (1)(a). I suggest removing or rewording this section.	We agree that offsite sources of information are sometimes not detailed enough, but they should still be explored as one step in addressing a difficult-to-identify wetland situation.
LABG	5	103		2. a. (2)(a) – much of the suggested off-site data does not provide plant community information at a level of detail sufficient to determine the presence/absence of a hydrophytic plant community. I suggest removing this reference.	See the previous response.
LABG	5	104	1	2. b. – The following sentence: "Limited grazing does not necessarily affect the outcome of a hydrophytic vegetation decision" is too vague and does not provide any guidance; especially when the first sentence states that both short- and long-term grazing can cause shifts in vegetation. I suggest removing this sentence.	We do not wish to imply that light to moderate grazing should automatically throw the wetland decision into the "problematic" procedure. Usually, standard procedures are applicable. The delineator must decide whether additional consideration is warranted.
LABG	5	104	6	2. b. (2) – However, the site may be too disturbed for original vegetation to come back quickly if ever.	True, but this does not invalidate the option.
LABG	5	104		2. b. (3) – previous use of the word offsite was hyphenated as off-site. Also see previous comment on 2. a. (1)(c).	We will use "offsite" consistently.
LABG	5	104		2. b. (4) – This implies that if there are hydric soil and wetland hydrology indicators, then the area is a wetlands? A two parameter approach?	If the site is heavily impacted by grazing (or any other disturbance) and the undisturbed condition cannot be determined, then the wetland determination must be based on the other two factors. This approach is used in the Corps Manual for Atypical Situations and is simply repeated in this supplement.
TR	5	105		I think I would place the General Approaches to Problematic Hydrophytic Vegetation section on page 105 in front of the Specific Problematic Vegetation section on page 103.	For consistency, we use the existing format in all supplements.
LABG	5	105		2. c. (4) – same as 2. b. (3)	We will use "offsite" consistently.
LABG	5	105		2. c. (5) – same as 2. b. (4)	See the response in row 259.
LABG	5	105		2. d. – the sentence: "Limited disturbance does not necessarily affect ……the plant community is or is not hydrophytic" is too vague and does not provide any value to this paragraph. I suggest removing it	See the response in row 256.
LABG	5	105		2. d. (2) – same as 2. b. (3)	We will use "offsite" consistently.
LABG	5	105		2. d. (3) – same as 2. b. (4)	See the response in row 256.
TR	5	106	1	I never have seen either beech or eastern red cedar **dominate** wetlands. Is this true? Beech sometimes is found on micro sites in wetlands. One subspecies of beech found in and around Maryland is more water tolerant and can be identified by buds.	The working group developed this list of examples based on experience in various parts of the region.
TR	5	106	4	What is an example of unpublished scientific literature as mentioned on page 106?	Examples might include environmental impact statements, government gray literature, special area management plans, unpublished theses and dissertations, unpublished data sets, etc.
TR	5	106	General	I found the soil section on page 113 to be somewhat confusing. The statement under **Procedure** that if the soil meets the definition of a hydric soil but does not exhibit any indicators ….. can be identified by the following……..If a soil meets the definition of a hydric soil, why do we have to be concerned with a lack of indicators? This especially would be true of new wetlands such as mitigation sites or beaver ponds.	Many times we do not know initially that it meets the definition of a hydric soil unless indicators are present. This procedure provides options that allow the delineator to make a decision in cases where indicators are absent. The case of recently developed wetlands is covered under item 4b(i).

LABG	5	106	1	If a site is dominated by a non-wetland (non-hydrophytic) plant community, you can not just readily rely on the presence of hydrology and hydric soils to determine that it is a wetland; this infers a two factor approach. This paragraph starts by stating to verify that the subject area has prolonged inundation/saturation and proceeds to suggest a couple of site visits. The presence of hydrology may or may not be the current norm and more documentation needs to be provided to demonstrate whether 'wetland hydrology' is, and will continue to be, present.	We agree with this comment. This procedure is intended to provide the additional information to determine whether the community is hydrophytic.
LABG	5	106	1	3. – American holly (*Ilex opaca*), blackhaw (*Viburnum prunifolium*) and serrate-leaf blackberry (*Rubus argutus*) are also examples of FACU species that can be dominant in wetlands.	For this list of examples, we chose species that are FACU throughout the region (or wherever they occur). *Ilex opaca* is FAC(-) in Region 2 (Southeast) and, thus, is not an issue in most of the region. We will consider adding the other two species.
LABG	5	106	2	3. a. – is it practical to suggest that wet conditions will occur on the site at least every other year, especially when hydrology needs to be present 5 out of 10 years, which may not necessarily be every other year?	In this supplement, we use the words "every other year," "in most years," "5 out of 10 years," and "50% probability" to mean the same thing. All must be evaluated over a long-term record (at least 30 years).
LABG	5	106		3. b. reference sites – will the data that is kept on file in the district or field office be available for public use? Also how will the public be informed that this data exits.	We do not know.
JG	5	107		Wasn't this and A7 covered in Ch. 3? Why repeat?	More detail is presented in Chapter 5.
LABG	5	107	3	Seasonally Ponded Soils – Could it be that the hydrology is not present long enough to be considered wetland hydrology and result in the formation of hydric soils.	That is unlikely, particularly in this region where ponded areas tend to persist for long periods. However, such an area would not be identified as a wetland unless all the requirements of the procedure starting on page 113 were met.
LABG	5	107	5	Red Parent Material – There is the potential for Triassic red parent material to wash into the Coastal Plain. Therefore Virginia should be included in this section.	We will revise the wording to clarify that red parent materials occur in scattered locations throughout the region.
JG	5	110		Define "thin"? The mucky-peat surface textures are too thin to qualify for indicator A7 or S1, and the sands beneath do not qualify for any approved indicator.	In this problem soil situation, "thin" means generally 2 inches or less. Thicker organic deposits in interdunal swales are likely to contain at least some muck and would meet indicators A9 or A10. We will clarify the wording.
JG	5	111	1	In sandy soils, on low-angle slopes adjacent to pocosins or sandy ponded depressions, the spodic horizon may occur directly underneath the A horizon. Without careful and experienced field observation or a lab analysis, the spodic may be mistaken for an A horizon. The absence of iron and an E horizon between means the soil will not qualify for indicators S5, S6, S7, or S8, and will only qualify for S9 if the spodic is value < 4 and chroma < 1. I have provided a pdf showing this situation. In such cases where no E is present between an A and a spodic, we need a new indicator.	It is not clear from this comment and the additional materials provided by the reviewer why these soils would not meet one of the existing indicators or what change is being suggested to the supplement. In any case, this issue should be communicated to the NTCHS for their consideration.
JG	5	112	1	add -Compacted soil horizons become anaerobic more rapidly than other soils because of their lower amount of porosity and disconnected pores. These soils develop redoximorphic features more rapidly than other soils. These may be found under forest hauls roads or loading yards, under or in tractor plow pans or vehicle traffic in wet soils.	We will add the example of compacted soils to the paragraph addressing development of hydric soil features in potentially non-hydric soils.

LABG	5	114		4. a. – For the problematic hydric soils listed on page 114, in Chapter 3, the applicable subregions states that these indicators are also applicable in problem soils. More emphasis needs to be placed on this connection. Suggestion: also applicable to problematic hydric soils (Chapter 5). However, there is added confusion with the section on page 64 – Hydric Soil Indicators for Problem Soils. Clarification and consistency of terms, problem soils versus problematic hydric soils, would help the reader.	The introduction on page 64 (Chapter 3) already says that these indicators for problem hydric soils must be used in the procedure given in Chapter 5. It also specifically references the section on "Problematic Hydric Soils." Thus the connection seems clear. However, we will reconsider the wording.
LABG	5	114		4. b. – what is the difference between problematic soil situations and problematic hydric soils? Is this similar to problem area and atypical wetlands?	We think the wording is clear in context.
LABG	5	114		4. b. ii. – seasonally ponded soils may not be wet long enough to be considered a hydric soil.	The reviewer's statement is true by itself. However, the procedure is designed to identify those soils that are wet long enough to be considered hydric even though they lack indicators.
LABG	5	114		4. c. – any suggestions on where this occurs and how often would be beneficial to the reader.	We have no specific examples.
LABG	5	117	1	2. – is the list of geomorphic positions comprehensive or could there be others? Please clarify.	We will revise and clarify this list. It is not intended to be exhaustive. However, an adequate rationale is needed to accept additional landscape settings.
LABG	5	117	3	3. a. – *Site visits during the dry season* , third paragraph – the sentence: “At such times, the wetland determination should be based on the preponderance of evidence that the site is or is not wetland”, is too vague. What constitutes a preponderance of evidence?	What is needed to conclude that wetland hydrology is present is spelled out further along in the same paragraph.
LABG	5	118	4	3. d., page 119 - will the data that is kept on file in the district or field office be available for public use? Also how will the public be informed that this data exits?	We do not know.
LABG	5			3. e., page 119 – “The seven hydrology tools are used to:” What?	See items 1 through 7.
TR	5	120	2	Since the mycorrhizal mantle approach has not been tested over and large areas and with numerous wetland species, I suggest leaving it out for now. If it proves a good tool, it can be added later.	The section is clear that mycorrhizal mantles provide strong evidence of wetland drainage in the area where the study was done (the Delmarva Peninsula). We believe it is useful for wetland delineations in that general area. Users should feel free to test the method elsewhere.
LABG	5	120	2	3. g., page 120/121 – pretty thorough discussion on Mycorrhizal Mantles. However, the information seems to be based on one study. Second paragraph – what does “that year” refer to? How accepted is this information. Caution should be exercised when using this approach to determine if wetland hydrology is present.	See the previous response. "That year" is the same year that mantles are observed. Adequate cautions are given for people to try out this method in other areas and with other species.
JG	ref	124		add - Burdt, A. C., J.M. Galbraith, and W.L. Daniels. 2005. Season Length Indicators and Land-Use Effects in Southeast Virginia Wet Flats. Soil Sci. Soc. Am. J. 69:1551–1558	We will make the recommended change.