US Army Corps of Engineers Norfolk District
Wetland Attribute Form:
Procedures Manual

Version 1.0
March 2020

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This wetland attribute methodology was developed using the US Army Corps of Engineers New England District Highway Methodology Workbook Supplement: Wetland Functions and Values: A Descriptive Approach (2015) as the baseline.

INTRODUCTION

The US Army Corps of Engineers Norfolk District Wetland Attribute Form (Form) was developed to provide a detailed, rapid, and qualitative description of the physical, chemical, and biological characteristics of the wetland under evaluation. The results of the evaluation can be used to support the Clean Water Act (CWA) Section 404 permitting process. Specifically, the Form may be used to assess wetlands that have proposed impacts requiring compensatory mitigation. This Form should not take the place of a wetland functional/values assessment. Where project conditions warrant, the Corps may require a more detailed assessment than what is included in this Form and Procedures Manual. This Procedures Manual provides the methods to be used to complete the Form.

This Form is to be used to provide a more in depth description of the aquatic resources under review as part of the CWA Section 404 permitting process. The Form is not to be used to establish compensatory mitigation requirements.

WETLAND ATTRIBUTE FORM

The Form consists of an Excel spreadsheet that can be filled out electronically or be printed and filled out in the field. A blank reproducible Form is included in Appendix A. A digital fillable copy of the Form can be found at

https://www.nao.usace.army.mil/Missions/Regulatory.aspx.

The Form should be completed for each wetland community type within the evaluation area. Wetland community types are defined using the "Virginia Department of Conservation and Recreation, Natural Communities of Virginia: Classification of Ecological Groups and Community Types" (Version 3.1). This information can be found at

https://www.dcr.virginia.gov/natural-heritage/natural-communities/.

Appendix B also contains the wetland portion of this classification system.

The Form is divided into three sections:

1) Descriptive Information: Located at the top of the Form and includes background information about the wetland being investigated (e.g. Date, location, community type, etc.).

2) Attributes: This section provides descriptions of the 9 Attributes (A-I). The presence of a particular Attribute within the wetland being investigated is determined by the observation of particular Qualifiers.

3) Qualifiers: This section provides a checklist of the characteristics that will be investigated (1-65) and areas to record rationale for selecting each Qualifier,

comments, and detailed observations. Justification for selecting a Qualifier is required. The Qualifiers are individual questions about the physical, chemical, or biological characteristics of the wetland under investigation that correspond to one or more Attributes. If a Qualifier has the potential to be present or is present, that Qualifier should be CHECKED in the GRAY BOX on the Form. The evaluator can then identify which Attribute the Qualifier applies to by CHECKING the WHITE BOX/BOXES under the letters that correspond to each Attribute (A-I).

Portions of the Descriptive Information and Qualifiers sections may be completed via desktop survey/office review. Useful information (water quality, impervious cover, private/public well locations, etc.) may be obtained from the following types of resources:

- Virginia Department of Environmental Quality Virginia Wetland Condition Assessment Tool (WetCAT) http://cmap2.vims.edu/WetCAT/WetCAT_Viewer/WetCAT_VA_2D.html

- EPA Region 3's Water Protection Division Watershed Resources Registry (WRR) https://watershedresourcesregistry.org/

- EPA Waters GeoViewer https://www.epa.gov/waterdata/waters-geoviewer

Following completion of the Form, the evaluator should have an objective representation of the characteristics of the wetland. A better understanding of the wetland characteristics can be helpful during the Section 404 permitting process.

Attachments to each Form are required and should include, at a minimum, the following:

- Drawings depicting the wetland area, wetland impacts, and surrounding landscape,
- Vegetation inventory,
- Potential wildlife species,
- Photos of the wetland,
- Information generated from WETCAT, WRR, or other similar resources,
- Any additional useful information.

WETLAND ATTRIBUTES/QUALIFIERS

The 9 Attributes (A-I) are listed below. Each Attribute has specific Qualifiers that can be used to support the potential for particular Attribute to occur within a wetland. This list is not exhaustive and could be altered if determined to be appropriate by the Corps.

A. GROUNDWATER RECHARGE/DISCHARGE

This Attribute considers the potential for a wetland to serve as a groundwater recharge and/or discharge area. It relates to the fundamental interaction between wetlands and aquifers, regardless of the size or importance of either.

QUALIFIERS

- Public and/or private wells occur below the wetland
- Gravel/sandy soils are present in/adjacent to the wetland
- Fragipan/impervious soils/bedrock are present in the wetland
- A man-made ditch is associated with/adjacent/contiguous to the wetland
- A perennial/intermittent watercourse is associated with/adjacent/contiguous to the wetland
- A pond/lake is associated with/adjacent/contiguous to the wetland
- A defined/constricted outlet is associated with the wetland
- A defined inlet is associated with the wetland
- Water quality of the watercourse/pond/lake associated with the wetland meets or exceeds standards
- Signs of groundwater discharge are present in the wetland
- Signs of variable water levels are present in the wetland

B. FLOODFLOW ALTERATION (Storage & Desynchronization)

This Attribute considers the potential for the wetland to reduce flood damage by water retention for prolonged periods following precipitation events and the gradual release of floodwaters. It relates to the potential for the wetland to add to the stability of the wetland ecological system or the wetland buffering characteristics relative to erosion and flood prone areas.

QUALIFIERS

- A man-made ditch is associated with/adjacent/contiguous to the wetland
- A pond/lake is associated with/adjacent/contiguous to the wetland
- A defined/constricted outlet is associated with the wetland
- Signs of variable water levels are present in the wetland
- The size of the wetland relative to its watershed is large
- Ponded/open water is within the wetland
- The wetland exists in a flat area with flood storage potential
- The wetland watershed contains a high percentage of impervious surfaces
- Flood storage is small/nonexistent in the watershed
- The wetland receives/retains sheetflow from the surrounding uplands
- The wetland receives/detains excessive flood water from watercourses within its watershed
- The watercourse associated with the wetland is sinuous or diffuse
- The wetland is located in/along/at the head of a watercourse
- The wetland contains a high density of vegetation

C. FISH AND SHELLFISH HABITAT:

This Attribute considers the potential of the seasonal or permanent watercourses associated with the wetland to provide fish or shellfish habitat.

QUALIFIERS

- A man-made ditch is associated with/adjacent/contiguous to the wetland
- A perennial/intermittent watercourse is associated with/adjacent/contiguous to the wetland
- A pond/lake is associated with/adjacent/contiguous to the wetland
- Forest is the dominant cover type in the watershed
- Woody debris, undercut/overhanging banks and vegetation are present within the wetland or the watercourse associated with the wetland
- Width of watercourse (bank to bank) associated with the wetland is more than 50 feet
- Vegetation along the banks provides shade for the watercourse associated with the wetland
- Submerged vegetation/gravel beds/other habitat that appears to be suitable for spawning is present in the watercourse associated with the wetland
- Barrier(s) to anadromous fish (such as dams, waterfalls, road crossings) are absent from the watercourse associated with the wetland
- Evidence of fish/shellfish is present within the watercourse associated with the wetland and/or within the wetland
- Logs/snags are present in the watercourse associated with the wetland

D. SEDIMENT/TOXICANT/PATHOGEN RETENTION

This Attribute considers the potential of the wetland in reducing or preventing degradation of water quality. It relates to the potential for the wetland to act as a trap for sediment and other pollutants in runoff water from surrounding watershed.

QUALIFIERS

- Public and/or private wells occur below the wetland
- Fine grained mineral/organic soils are present in the wetland
- A man-made ditch is associated with/adjacent/contiguous to the wetland
- A pond/lake is associated with/adjacent/contiguous to the wetland
- A defined/constricted outlet is associated with the wetland
- Signs of variable water levels are present in the wetland
- Ponded/open water is within the wetland
- The watercourse associated with the wetland is sinuous or diffuse
- The wetland contains a high density of vegetation
- Sources of excess sediments are present in the watershed above the wetland
- Sources of pollutants are present in the watershed
- Flow velocities visibly decrease within the wetland
- Erosion is visible within the watercourse associated with the wetland and/or within the wetland

- Flows within the wetland are diffuse
- Vegetation and water within the wetland is interspersed
- Evidence of sediment accumulation is present within the wetland
- Water intakes are located within 1 mile upstream or downstream of the wetland
- Evidence of macrobenthic use is found within the watercourse associated with the wetland

E. NUTRIENT REMOVAL/RETENTION/TRANSFORMATION

This Attribute considers the potential for the wetland to act as a trap for nutrients in runoff water from surrounding uplands or contiguous wetlands and the ability of the wetland to process these nutrients into other forms or trophic levels. It relates to the potential of the wetland to prevent adverse effects of nutrients entering aquifers or surface waters such as ponds, lakes, and other watercourses.

QUALIFIERS

- Fine grained mineral/organic soils are present in the wetland
- A defined/constricted outlet Is associated with the wetland
- The size of the wetland relative to its watershed is large
- Ponded/open water is within the wetland
- The wetland contains a high density of vegetation
- Flows within the wetland are diffuse
- Evidence of sediment accumulation is present within the wetland
- Sources of excess nutrients are present in the watershed
- The wetland soils are saturated for most of the season
- Deep organic sediment deposits are present in the wetland
- Emergent vegetation is present in the wetland
- Dense woody vegetation is present in the wetland
- More than one species of wetland vegetation is present
- Flows within the wetland have a low velocity
- Evidence of macrobenthic use is found within the watercourse associated with the wetland

F. PRODUCTION EXPORT (Nutrient)

This Attribute considers the potential of the wetland to produce food or usable products for humans or other living organisms.

QUALIFIERS

- The wetland contains a high density of vegetation
- Evidence of fish/shellfish is present within the watercourse associated with the wetland and/or the wetland
- More than one species of wetland vegetation is present

- Wildlife food sources exist within the wetland
- Economically/commercially used products are within the wetland
- Evidence of wildlife, to include avian and amphibian, use are found within the wetland
- More than one vegetative layer is present in the wetland

G. STREAMBANK EROSION/SHORELINE STABILIZATION

This Attribute considers the potential of the wetland to stabilize streambanks and shorelines against erosion.

QUALIFIERS

- A perennial/intermittent watercourse is associated with/adjacent/contiguous to the wetland
- A pond/lake is associated with/adjacent/contiguous to the wetland
- Sources of excess sediments are present in the watershed
- Erosion is visible within the watercourse associated with the wetland and/or within the wetland
- Evidence of sediment accumulation is present within the wetland
- A distinct shoreline/streambank exists between the wetland and the watercourse associated with the wetland and/or the upland
- The streambank/shoreline contains dense roots
- The wetland is greater than 10 feet in width
- Flows within the wetland have a high velocity
- Flows within the wetland are channelized
- Open water fetch is present
- Dense woody vegetation borders the watercourse/lake/pond associated with the wetland
- Dense emergent vegetation borders the watercourse/lake/pond associated with the wetland

H. WILDLIFE HABITAT

This Attribute considers the potential of the wetland to provide habitat for various types of animal populations typically associated with wetlands. Consideration should be given to both resident and/or migrating species.

QUALIFIERS

- A pond/lake is associated with/adjacent/contiguous to the wetland
- Water quality of the watercourse/pond/lake associated with the wetland meets or exceeds standards
- The wetland watershed contains a high percentage of impervious surfaces
- The wetland contains a high density of vegetation
- Vegetation and water within the wetland is interspersed

- More than one species of wetland vegetation is present
- Wildlife food sources exist within the wetland
- Economically/commercially used products are within the wetland
- Evidence of wildlife, to include avian and amphibian, use are found within the wetland
- More than one vegetative layer is present in the wetland
- Wetland is fragmented by development
- Buffer surrounding wetland is contiguous and undeveloped
- Wetland is part of a wildlife corridor
- Wetland includes deep/shallow marsh or wooded swamp
- Logs/snags are present in the watercourse associated with the wetland

I. RARE/THREATENED/ENDANGERED SPECIES HABITAT

This Attribute considers the potential for the wetland to support rare/threatened/endangered plant and/or animal species.

QUALIFIERS

- Critical habitat for state/federally listed rare/threatened/endangered plant/animal species is present in the wetland
- State/federally listed rare/threatened/endangered plant/animal species are present in the wetland

DEFINITIONS

Pond-natural or man-made
Watercourse-streams or ditches
Watershed-the area that drains to the wetland being evaluated

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APPENDIX A: WETLAND ATTRIBUTE FORM

APPENDIX B: NATURAL COMMUNITIES OF VIRGINIA: CLASSIFICATOIN OF ECOLOGICAL GROUPS AND COMMUNITY TYPES


Palustrine Systems
• Alluvial Floodplain
• Bald Cypress-Tupelo Swamp
• Coastal Plan/Piemont Bottomland Forests
• Floodplain Ponds and Pools
• Semipermanent Impoundments
• Piedmont/mountain Floodplain Forests and Swamps
• Piedmont/mountain Small- Stream Alluvail Forests
• Sand/Grave/Mud Bars and Shores
• Rocky Bars and Shores
• Riverside Prairies
• Non-Alluvial Wetlands of the Mountains
• Montane Depression Swamps & Ponds
• Mountain/Piedmont Seepage Swamps
• Montane Woodland Seeps
• Appalachian Bogs
• Calcareous Fens & Spring Marshes
• Mafic Fens & Seeps
• Spray Cluffs
• Inland Salt Marshes
• Non-Alluvial Wetlands of the Coastal Plan & Piedmont
• Coastal Plain Depression
• Non-Riverine Flatwoods & Swamps
• Coastal Plain/Piedmont Seepage Bogs
• Piemont Upland Depression Swamps
• Saturated Peatlands of the Coastal Plain
• Pond Pine Woodlands & Pocosins
• Peatland Atalntic White-Cedar Forests
• Non-tidal Maritime Wetlands
• Sea-level Fens
• Interdune Swales & Ponds
• Maritime Swamps
Riverine Systems
• Riverine Aquatic Beds


Estuarine Systems
• Tidal Wetlands
• Tidal Freshwater Marshes
• Tidal Oligohaline Marshes
• Wind-Tidal Oligohaline Marshes
• Tidal Mesohaline adn Polyhaline Marshes
• Tidal Shrub Swamps
• Tidal Swamp Forests and Woodlands
• Tidal Freshwater adn Oligohaline Aquatic Beds
• Tidal Mesohaline and Polyhaline Aquatic Beds
• High-Energy Tidal River Shores
• Salt Flats
• Salt Scrub