Regional Supplements to the Corps of Engineers 1987 Wetland Delineation Manual

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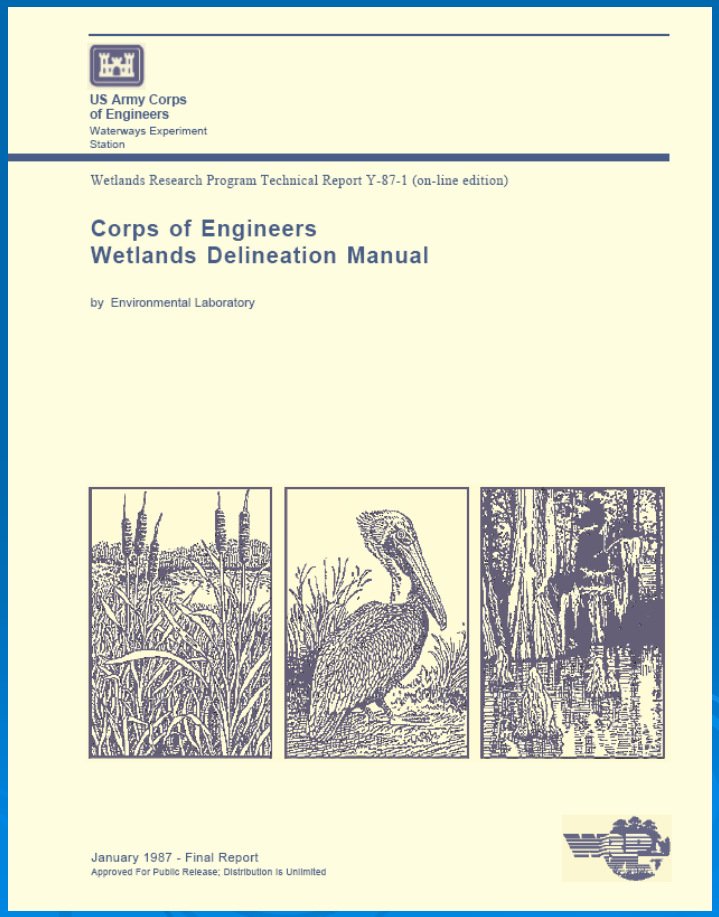
Corps of Engineers 1987 Wetland Delineation Manual

- Umbrella manual for all Clean Water Act wetland delineations
  - Definitions, criteria
    - Hydrophytic Vegetation
    - Wetland Hydrology
    - Hydric Soils
    - Problem Areas
    - Disturbed Areas


US Army Corps
of Engineers
Waterways Experiment
Station

Wetlands Research Program Technical Report Y-87-1 (on-line edition)

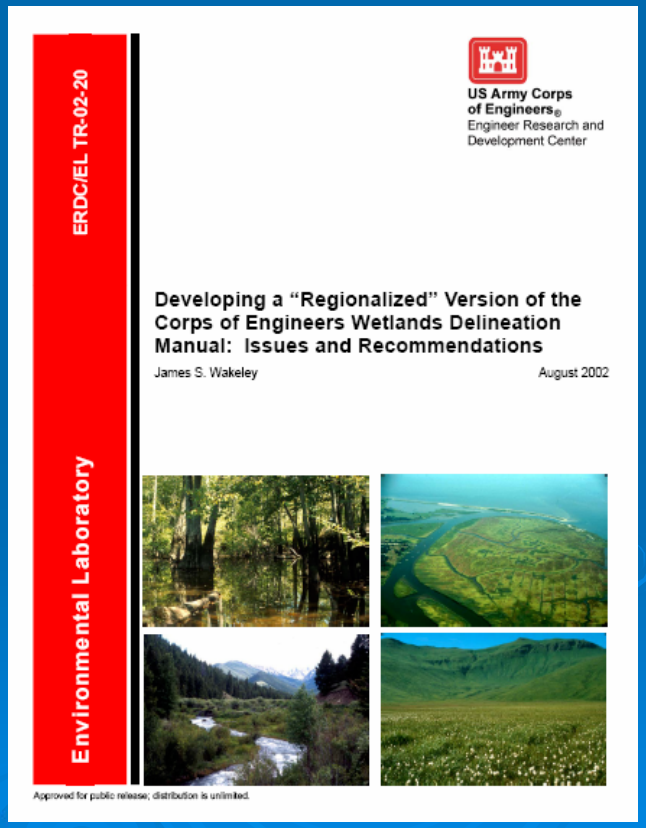
Corps of Engineers
Wetlands Delineation Manual

by Environmental Laboratory

January 1987 - Final Report
Approved For Public Release; Distribution is Unlimited

Regional Supplements

- Regional field indicators and other helpful information
  - Introduction
  - Hydrophytic Vegetation Indicators
  - Hydric Soil Indicators
  - Wetland Hydrology Indicators
  - Difficult Wetland Situations
  - References
  - Appendix
    - Data Form


ERDC/EL TR-02-20

Environmental Laboratory

US Army Corps of Engineers®
Engineer Research and Development Center

Developing a "Regionalized" Version of the Corps of Engineers Wetlands Delineation Manual: Issues and Recommendations

James S. Wakeley

August 2002

Approved for public release; distribution is unlimited.

Regions Based on LRR

Schedule of Regional Supplements

	Target Date for Publication
Alaska	2006
Arid West	2006
Western Mountains, Valleys & Coast	2007
Great Plains	2007
Midwest	2008
Atlantic and Gulf Coastal Plain	2008
Northcentral and Northeast	2009
Caribbean Islands	2009
Mid-Atlantic and Southeast	2010
Hawaii/Pacific Islands	2010

What it Does Not Address

- Plant Indicator Status Changes
- Rapanos
- SWANCC
- Jurisdiction

DRAFT Interim Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Atlantic and Gulf Coastal Plain Region

U.S. Army Corps of Engineers

U.S. Army Engineer Research and Development Center
3909 Halls Ferry Road
Vicksburg, MS 39180-6199

Introduction

- Purpose and Use of the Supplement
- Physical and Biological Characteristics of the Region
- Types and Distribution of Wetlands

Hydrophytic Vegetation

- Introduction
- Guidance on Vegetative Sampling and Analysis
  - Plot and Sample Size
  - Definition of Strata
- Hydrophytic Vegetation Indicators
  - Dominance Test (50/20)
  - Prevalence Index

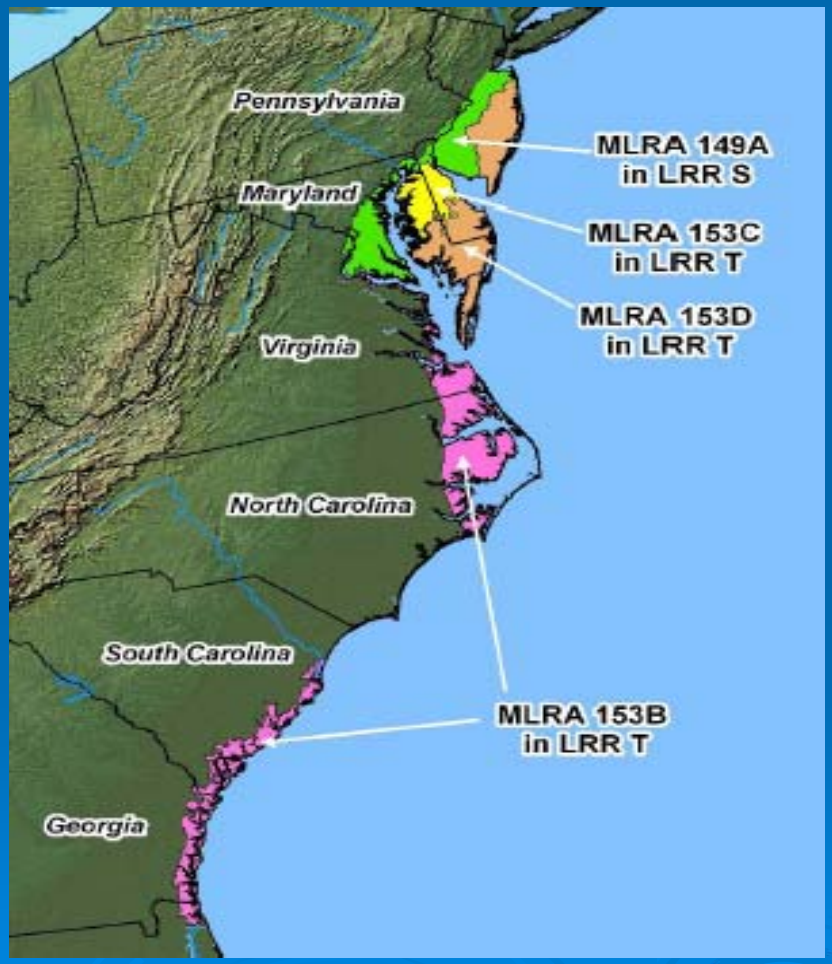
Hydric Soils

- Introduction
- Cautions
- Procedures for Sampling Soils
- Hydric Soil Indicators
  - NTCHS Approved
- Hydric Soil Indicators for Problem Soils
- Use of Existing Soil Data
  - Soil Surveys and Hydric Soils Lists

Hydric Soil Indicators for the Mid-Atlantic Coastal Plain

- Histosol
- Histic Epipedon
- Black Histic
- Hydrogen Sulfide
- Stratified Layers
- Organic Bodies
- 5 cm Mucky Mineral
- 1 cm Muck
- Depleted Below Dark Surface
- Thick Dark Surface
- Sandy Mucky Mineral
- Sandy Gleyed Matrix
- Sandy Redox
- Stripped Matrix
- Dark Surface
- Polyvalue Below Dark Surface
- Thin Dark Surface
- Loamy Gleyed Matrix
- Depleted Matrix
- Redox Dark Surface
- Depleted Dark Surface
- Redox Depressions
- Iron-Manganese Masses
- Umbric Surface
- Piedmont Floodplains
- Anomalous Bright Loamy Soils
- 2 cm Muck

Sub-Regional Indicators



Wetland Hydrology Indicators

- Introduction
- Growing Season
- Wetland Hydrology Indicators

Primary Hydrology Indicators

- Surface Water
- High Water Table
- Saturation
- Water Marks
- Sediment Deposits
- Algal Mat or Crust
- Iron Deposits
- Inundation Available on Aerial Imagery
- Water Stained Leaves
- Aquatic Fauna
- Hydrogen Sulfide Odor
- Oxidized Rhizospheres on Living Roots
- Recent Iron Reduction in Tilled Soils
- Presence of Reduced Iron
- Thin Muck Surface
- Other

Secondary Hydrology Indicators

- Surface Soil Cracks
- Sparsely Vegetated Concave Surfaces
- Drainage Patterns
- Moss Trim Lines
- Dry-Season Water Table
- Crayfish Burrows
- Saturation Visible on Aerial Imagery
- Geomorphic Position
- Shallow Aquitard
- Fac-Neutral Test

Process

- Initial drafting of document
- Final review of draft by regional then national committee
- Draft put on public notice for peer review and public comment
- Comments addressed
- Final draft implemented for 1 year trial period
- Final document released
- Dynamic document will change with new information over time

Testing

- During the public comment period, multi-disciplinary teams are asked to evaluate differences between the original manual and the regional supplements
- If NRCS is asked to be involved or review data, it is important to respond

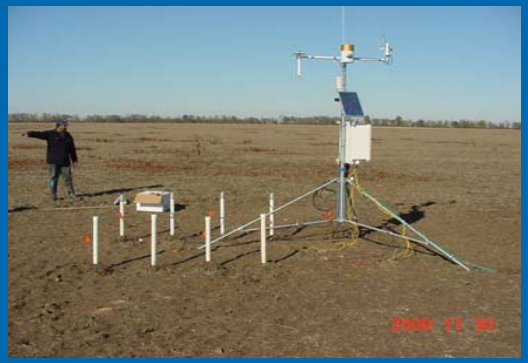
For Information and Publications

http://www.usace.army.mil/cw/cecwo/reg/reg_supp.htm

Other Hydric Soil Issues

Resolving Sharkey Issues

1. Maps are being refined through MLRA update process.
   - LIDAR/IFSAR being used with ground truthing to separate Openlake and Sharkey



Openlake
Somewhat poorly drained
(not hydric)

Sharkey
Poorly drained
(hydric)

Dowling
Very Poorly drained
(hydric)

Resolving Sharkey Issues

2. Map unit phases are being used to separate undisturbed hydrology from altered hydrology

Examples

Sharkey clay, protected, rarely flooded

Sharkey clay, frequently flooded

Resolving Sharkey Issues

3. Monitoring sites will be set up to evaluate functional status of hydric map units
   - IRIS Tubes to document that saturation & reduction are/are not taking place.
   - Protocol for monitoring well installation and data evaluation for clayey soils will be evaluated
   - NTCHS is looking at revised definition of saturation in clayey soils

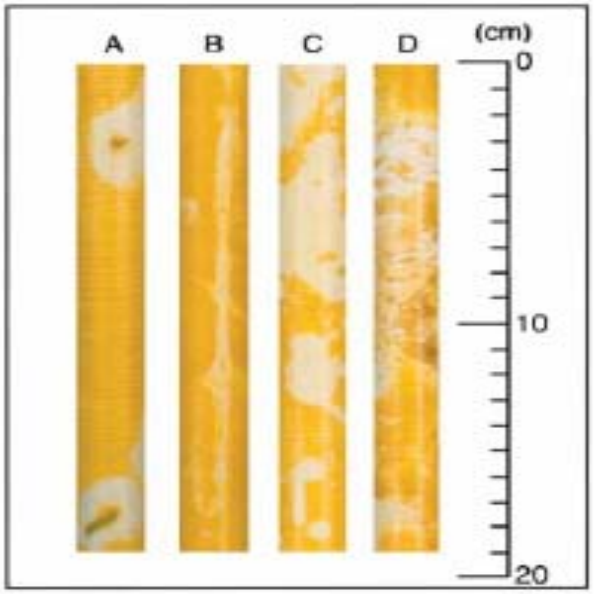


Fig. 3. Color photos of IRIS. The IRIS numbers in parentheses refer to Table 1. (A) IRIS showing FH removal in a "white donut" pattern (42), (B and C) IRIS showing removal in a linear pattern, probably along a root (25, 32), (D) IRIS showing secondary deposition on right center of tube (66).

Technical Soil Services Handbook

- Provide guidelines for what, when, how, and why we provide technical soil services
- A central location for links to information to assist in technical soil services

Hydric Soil Determinations and Delineations

Overview

Hydric soils determinations or delineations are typically done as part of a wetland determination or delineation, or to identify those areas that were once wetlands but due to alteration in hydrology or soils no longer satisfy the three parameters (hydrophytic vegetation, wetland hydrology, and hydric soils) of a wetland. Determinations are done to establish the presence or absence of hydric soils on a site. Delineations are done to establish the spatial distribution of hydric soils on a site.

Wetland determinations are done on agricultural land to establish areas that are subject to the swampbuster provision in the National Food Security Act Manual (NFSAM)(http://www.nrcs.usda.gov/programs/compliance/WCindex.html) to establish eligibility for Farm Bill program benefits. A person that has converted a wetland to make production of a commodity crop possible after November 28, 1990 is ineligible to receive Farm Bill program benefits.

Wetland determinations and delineations may also be done on areas that may qualify for programs that protect and conserve wetlands such as the Wetland Reserve Program or areas that may be subject to section 404 of the Clean Water Act (CWA)(http://www.epa.gov/owow/wetlands/regs/sec404.html). And, in some states, NRCS State Offices may also have agreements with state and local agencies to provide technical assistance for state and local wetland programs.

Identification of hydric soils in areas that are no longer wetlands may be needed to establish areas that would qualify for conservation programs and practices that require a wetland restoration or enhancement component. In some cases a delineation identifying the boundary between hydric and non-hydric soils may be needed to establish the extent and boundary of the area containing hydric soils.

When to Do Hydric Soils Determinations

NRCS technical soil services for hydric soil determinations are done on agricultural lands when requested by USDA program participants for USDA program purposes or should go to or through Federal, State, or local forms of government with which there is a memorandum of understanding or a cooperative agreement (http://soils.usda.gov/technical/handbook/contents/part655.html).

On February 25, 2005, NRCS and Corps of Engineers (COE) released Joint Guidance from the Natural Resources Conservation Service and the Army Corps of Engineers Concerning Wetland Determinations for the Clean Water Act and the Food Security Act Manual (http://www.nrcs.usda.gov/programs/compliance/pdf_files/COE_NRCS_wetland.pdf) which outlines the responsibility of NRCS and the COE for doing wetland determinations. NRCS does all wetland determinations on agricultural lands for

Hydric Soils Determinations and Delineations

- **Collecting Data for Hydric Soils Determinations**
- **Documentation when Conducting Hydric Soil Determinations**
- **NRCS Programs and Practices that May Need Hydric Soils Determinations**
- **Cooperator Programs and Practices that May Need Hydric Soils Determinations**
- **Other Information That May Be Needed on Hydric Soils**
- **References**
- **Other Useful Information**

Data Sheet

Detailed Hydric Soil Description Form Date_____

Project/Site:_____ Describer(s):_____
LRR:_____ MLRA:_____ County:_____ State:_____ Lat.:_____ Long.:_____
Hydric Soil: Yes __ No___ Field Indicators Met_____
Evidence of Disturbance/Thickness of Fill: _____ Current Vegetation Type/Land Use:_____
Landform: _____ Local Relief: _____ Depth to Ground Water: _____ Artificial Drainage: Yes __ No __

Depth		Texture		Matrix Color	Redoximorphic Features		Organic Feature	Roots	Structure	Remarks
Top	Bottom	Modifier	Class	Moist	Depletions	Concentrations	Bodies, Stripped Zones, Uncoated Grains			

Remarks:

Data Sheet

Organic Soil Material
Type
Starting at:
Thickness:
Color:
Hydrogen Sulfide Odor
Starting at:
Organic Bodies
Percent:
Starting at:
Size:
Mucky Mineral
Texture:
Starting at:
Thickness:
Covered Coated or Masked Sand Grains in Sandy Dark Surface
Percent:
Starting at:
Thickness:
Depleted Matrix
Texture:
Starting at:
Thickness:
Gleyed Matrix
Texture:
Starting at:
Thickness:

Layer with ≥ 2% Redox Concentrations
Texture:
Starting at:
Thickness
Sandy Stripped Areas
Percent stripped areas:
Starting at:
Thickness:
Sandy Layer with Translocated Organic Matter
Percent area coated with organics:
Starting at:
Spodic Horizon
Starting at:
Closed Depression Subject to Ponding
__ Yes
__ No
Marl
Starting at:
Thickness:
Flood Plain
__ Yes
__ No

Iron-Manganese Masses
Percent:
Starting at:
Thickness:
Concave Landform
__ Yes
__ No
Positive Reaction to Alpha-Alpha Dipyridyl in Veritsol or Vertic Intergrade
Percent:
Strating at:
Thickness:
Within 200m of Estuarine Marsh or Water and 1m Mean High Tide
__ Yes
__ No
Reduced Matrix (Color Change Upon Exposure to Air)
Original Matrix Color:
Final Matrix Color:
Time for Color Change:
Red Parent Material
__ Yes
__ No

List of Hydrology Indicators and Vegetation: