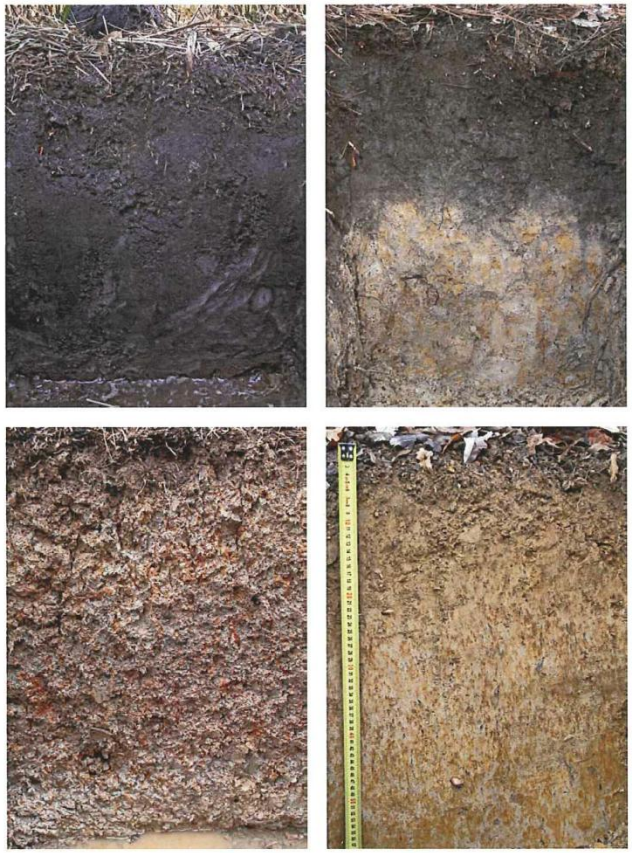
USDA United States Department of Agriculture

In cooperation with the National Technical Committee for Hydric Soils

NRCS Natural Resources Conservation Service

Field Indicators of Hydric Soils in the United States

A Guide for Identifying and Delineating Hydric Soils, Version 7.0, 2010



Supplements adopt NTCHS Indicators.

‘87 Manual soil indicators are no longer ‘valid’

Introduction

- Field indicators are soil morphological features used to identify hydric soils
- The features result from soil genesis in the presence of “anaerobic conditions”
- They are used for on-site verification of hydric soils and are “test positive”
- The list of indicators is dynamic and are subject to revision with new research and field testing

Development of the Indicators

- Continuous process
  - ongoing since the mid-1980's
- Interagency
  - including universities, private sector, federal, state, and local agencies
- Multi-disciplinary
  - soil scientists, hydrologists, botanists
- Recent development
  - COE implementation

US Army Corps of Engineers®
Engineer Research and Development Center

Field Indicators originated as

- Refinements of 1987 Indicators
  - Low Chroma Colors, Mottles
  - Gleyed Colors
  - “High” Organic Matter Content
  - Organic Streaking
  - Histosol, Histic epipedon
  - Sulfidic Material
- Address problem soils

Field Indicators only

- Corps 1987 Manual list of Indicators for hydric soil are no longer valid. They are addressed in specific Field Indicators
  - Low Chroma Colors, Redox (F3, F6, F7, A11)
  - Gleyed Colors (A11, A12, F2)
  - “High” Organic Matter Content (A10, F1, S1)
  - Organic Streaking (A5, S6)
  - Histosol, Histic epipedon (A1, A2,)
  - Sulfidic Material (A4)

Field Indicators of Hydric Soils in the U. S.

- Available on-line at www.nrcs.usda.gov

Click on Soils (left column, bottom)

Click on Hydric Soils (left column, top)

Click on Field Indicators of Hydric Soils v 7.0

Also check “Errata” for changes & updates

Regional

Lists by Land Resource Region

Addresses “Problem” Soils

- Spodisols
- Mollisols
- Sandy Soils
- Flooded and Ponded Soils
- Red Parent Materials

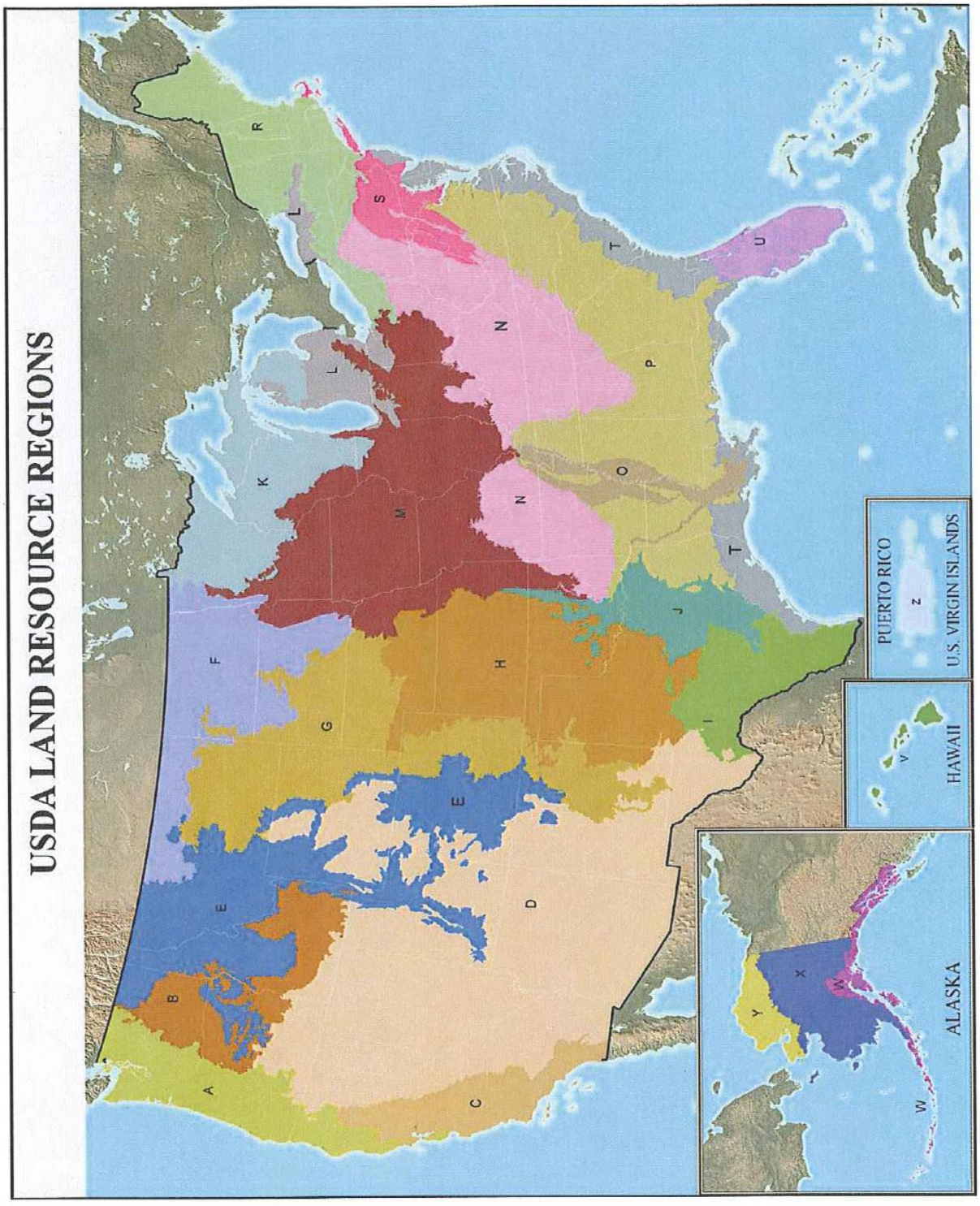


Figure 6.—Map of USDA land resource regions.

Control Sections or Zones

1) Layers with:
   -high value, low chroma or;
   -redoximorphic features or;
   -organic matter accumulations
2) at a depth
3) of certain thickness

Redox Morphology

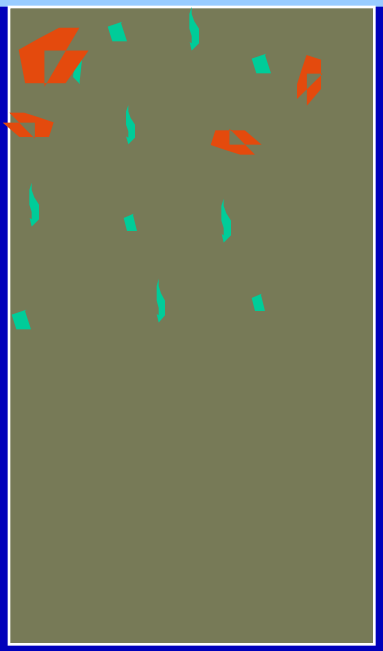
Depleted Matrix

- -Value 4, Chroma 1 or 2 with redox “mottles”
- -Value 5, Chroma 2 with redox “mottles”
- -Value 5 or more, Chroma $\leq$1 w/ or w/o redox
- -Value 6 or more, Chroma $\leq$2 w/ or w/o redox

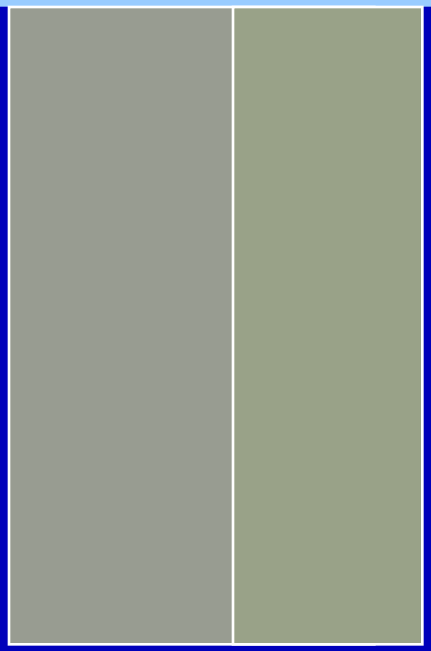
Gleyed Matrix

- -All Gleyed Pages Value 4 or more

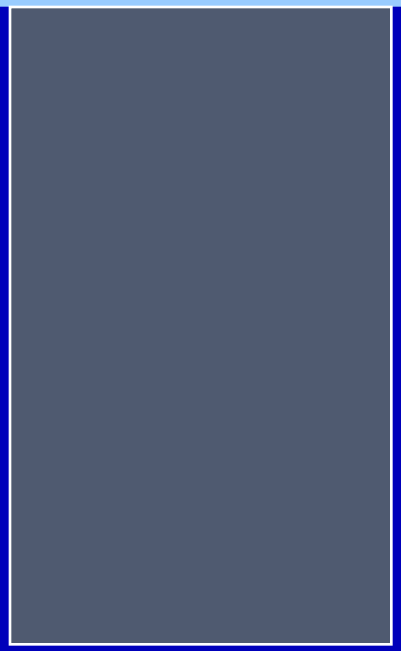
Depleted / Gleyed Matrix



4/1, 4/2, 5/2,
with 2% redox
concentrations



5/1 or 6/2
with or without
redox features



Value >=4
Gley pages

Depleted Matrix

Value ≥5 chroma 1,

Value ≥6, chroma 2

with or without redox concentrations

4/1, 4/2, 5/2 with ≥2%

redox concentrations

Figure A1. Illustration of values and chromas that require 2 percent or more distinct or prominent redox concentrations and those that do not, for hue 10YR, to meet the definition of a depleted matrix. *Due to inaccurate color reproduction, do not use this page to determine soil colors in the field.* Background image from the Munsell Soil Color Charts reprinted courtesy of Munsell Color Services Lab, a part of X-Rite, Inc.

Gleyed Matrix

Gley Pages

Value 4 or more

Figure A2. For hydric soil determinations, a gleyed matrix has the hues and chroma identified in this illustration with a value of 4 or more. *Due to inaccurate color reproduction, do not use this page to determine soil colors in the field.* Background image from the Munsell Soil Color Charts reprinted courtesy of Munsell Color Services Lab, a part of X-Rite, Inc.

Three Major Divisions

- All Soils
  - Use regardless of soil texture
  - Mostly surface layers of organic material
- Sandy Soils
- Loamy Soils
  - Use sandy indicators in sandy layers, loamy indicators in loamy layers

Indicator Format

1) Alpha-Numeric Designation
2) Short Name
3) Applicable Land Resource Regions (LRR)
4) Description of the Indicator
5) User Notes

Example Indicator Format

A1 – first indicator for All Soils

Histosol – short name

For use in all LRRs – applicable regions

Classifies as a Histosol, except Folists – indicator description

“A Histosol has 16 inches …” – user notes

A1, Histosol

“All Soils”

A2, Histic Epipedon

A3, Black Histic

A layer of peat, mucky peat, or muck ≥8” thick starting within the upper 6” of the soil surface having hue 10YR or yellower, value ≤3, and chroma ≤1

A4, Hydrogen Sulfide

“All Soils”

A4 - Hydrogen Sulfide

Hydrogen sulfide odor (rotten eggs) within 12 inches of the surface.

All Soils

A5 - Stratified Layers

- Several stratified layers starting within the upper 6” of the soil surface. One or more of the layers has value ≤3 with chroma ≤1 and/or it is muck, mucky peat, peat, or mucky modified mineral texture.
- All layers have chroma ≤2

All Soils

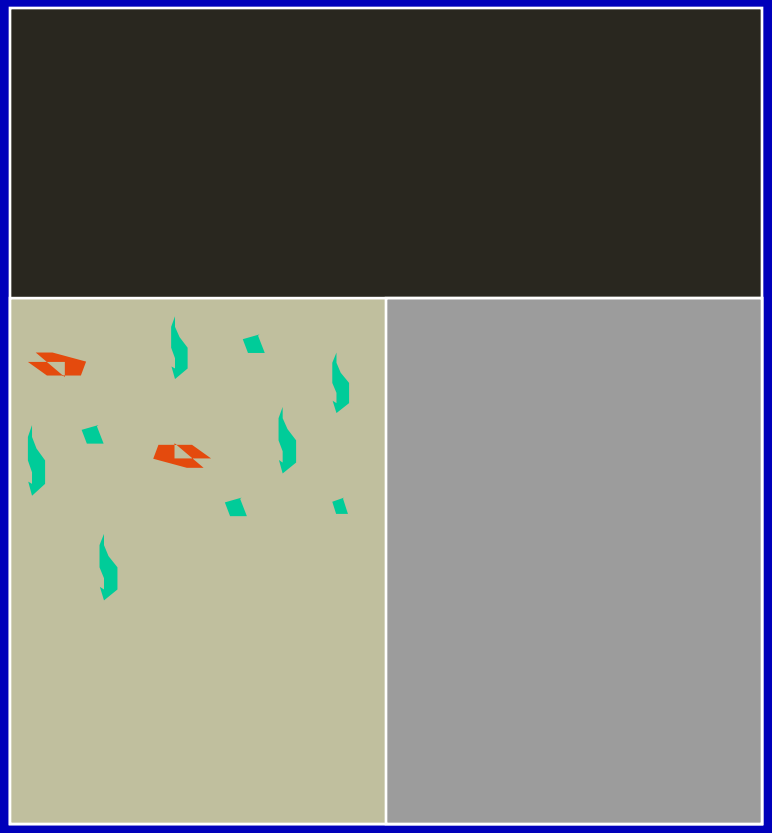
- **A10 - 2 cm Muck**
  - **A layer of muck 2 cm or more thick with value 3 or less and chroma 1 or less starting within 6” of the soil surface.**

For Problem Soils Only!

All - Depleted below Dark Surface

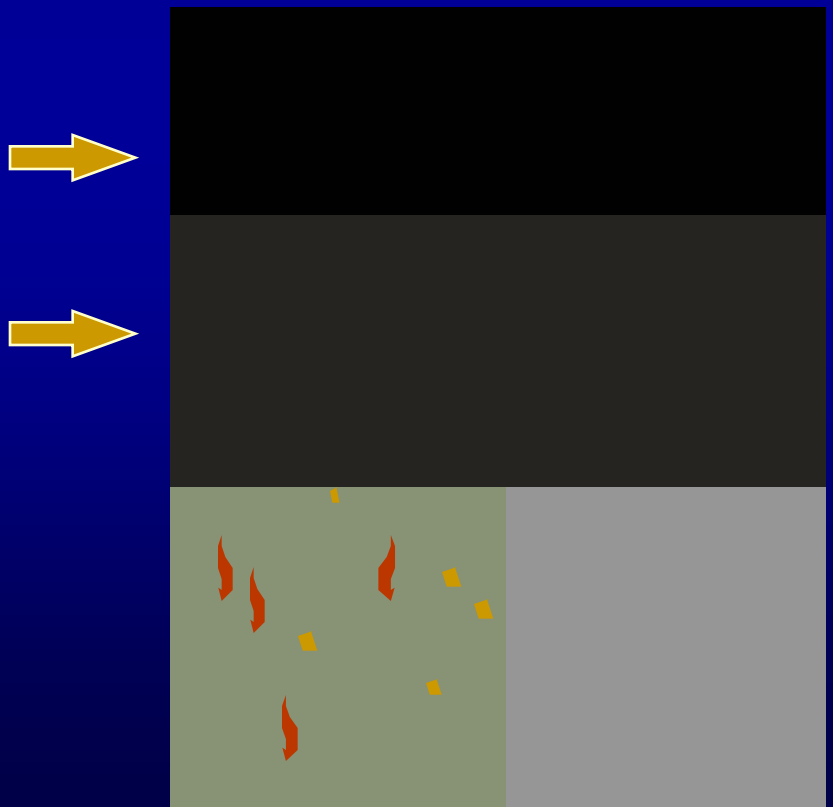
- A layer at least 6” thick with a depleted matrix starting within 12” of the surface. The layer(s) above the depleted matrix have value 3 or less and chroma 2 or less.

- Occurs in Mollisols



A12, Thick Dark Surface

A layer at least 6” thick with a depleted or gleyed matrix starting below 12” of the surface. The layer(s) above have value ≤3 and chroma ≤1 in upper 12” and value ≤3 and chroma ≤1 in the remainder of the epipedon (think Mollisols!)



A16 Coast Prairie Redox (old TS5 Chroma 3 Sandy Redox) Testing in LRR K

A layer starting within 6” of the soil surface at least 4” thick with a matrix chroma ≤3 with 2% or more distinct or prominent redox concentrations as soft masses and/or pore linings.

For Problem Soils Only!

Sandy Soils

Have a USDA texture of loamy fine sand or coarser

"Control Section" <6 inches in depth

Indicators include:

- organic surface layers
- differential translocation
  - streaking of OM
  - Fe stripped matrix

Sandy Soils
with High OM surface layers

S1, Sandy Mucky Mineral

Lab testing or professional soil scientist recommended

Sandy Soils
with High OM surface layers

S3, 2 in. Mucky Peat or Peat

Problem Soils Only!

Sandy Soils
with Redox Colors

- S4, Sandy Gleyed Matrix
- S5, Sandy Redox

Sandy Soils
with Redox Colors

- **S5, Sandy Redox**

A 4" layer starting w/in 6" of the surface, matrix >60% chroma ≤2 and ≥2% "distinct or prominent" redox concentrations.

Key for determining Contrast

Tabular key for contrast determination using Munsell® notation

Note: If both colors have values of ≤ 3 and chromas of ≤ 2, the color contrast is *Faint* (regardless of t
difference in hue).

Hues are the same (Δ h = 0)

Δ Value	Δ Chroma	Contrast
0	≤ 1	Faint
0	2	Distinct
0	3	Distinct
0	≥ 4	Prominent
1	≤ 1	Faint
1	2	Distinct
1	3	Distinct
1	≥ 4	Prominent
≤ 2	≤ 1	Faint
≤ 2	2	Distinct
≤ 2	3	Distinct
≤ 2	≥ 4	Prominent
3	≤ 1	Distinct
3	2	Distinct
3	3	Distinct
3	≥ 4	Prominent
≥ 4	---	Prominent

Hues differ by 1 (Δ h = 1)

Δ Value	Δ Chroma	Contrast
0	≤ 1	Faint
0	2	Distinct
0	≥ 3	Prominent
1	≤ 1	Faint
1	2	Distinct
1	≥ 3	Prominent
≤ 2	≤ 1	Distinct
≤ 2	2	Distinct
≤ 2	≥ 3	Prominent
≥ 3	---	Prominent

Hues differ by 2 (Δ h = 2)

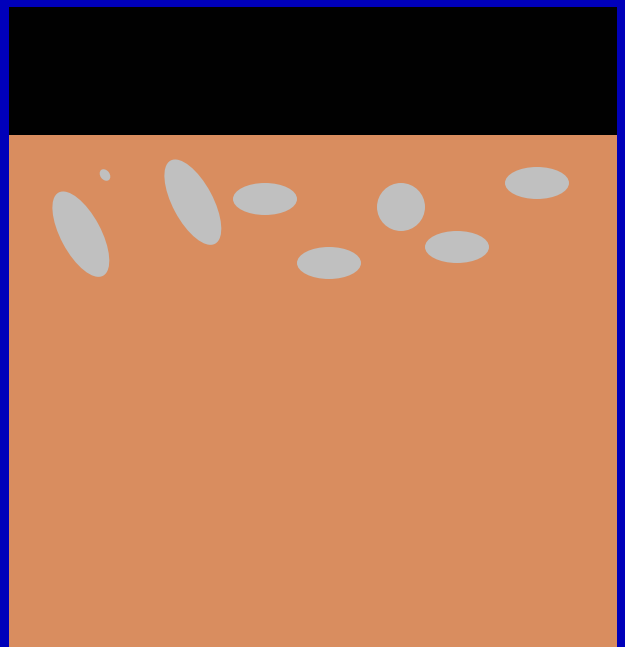
Δ Value	Δ Chroma	Contrast
0	0	Faint
0	1	Distinct
0	≥ 2	Prominent
1	≤ 1	Distinct
1	≥ 2	Prominent
≥ 2	---	Prominent

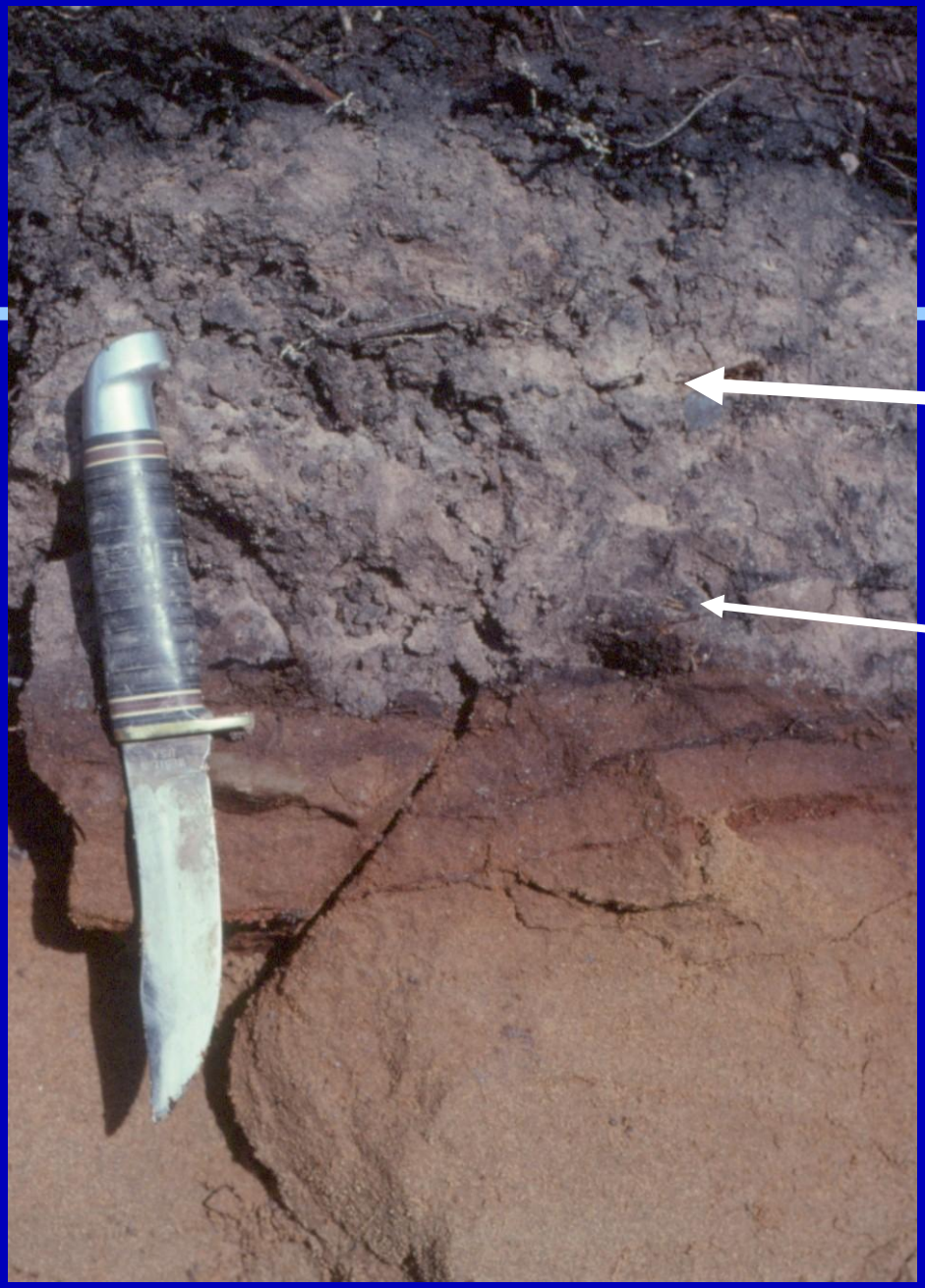
Hues differ by 3 or more (Δ h ≥ 3)

Δ Value	Δ Chroma	Contrast
Color contrast is prominent, except for low chroma and value.		Prominent

S6, Stripped Matrix

A layer starting within 6” of the soil surface in which Fe/Mn oxides and / or organic matter have been stripped from the matrix exposing the primary base colors of the minerals. The striped areas and translocated oxides and / or organic matter form a diffuse splotchy pattern of 2 or more colors.





S6, Stripped Matrix

E horizon over Ortstein

S7, Dark Surface

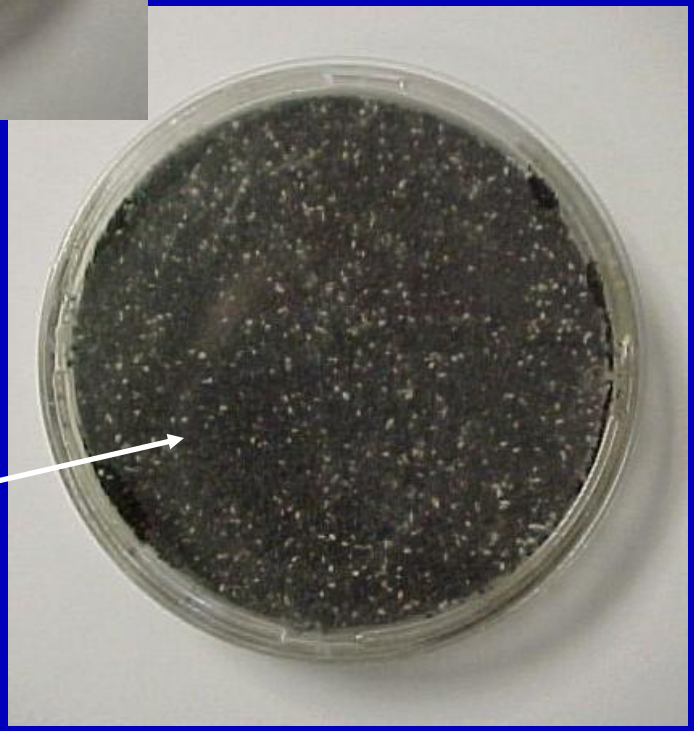
- **A layer ≥4” thick starting within the upper 6” of the soil surface with a matrix value ≤3 and chroma ≤1. At least 70% of grains are dark colored. The matrix color of the layer below the dark layer must have chroma ≤2.**

Problem Soils Only!

70% black

50% black

90% black



S8, Polyvalue Below Surface

- A layer with value ≤3 and chroma ≤1 starting (at least 70% dark particles) within 6” of the soil surface underlain by a layer(s) where translocated organic matter forms a diffuse splotchy pattern. The splotchy layer has a mix of value 3 and 4, and chroma 1 or less.

Problem Soils Only!

S9, Thin Dark Surface

- A layer ≥2” thick within the upper 6” of the surface, with value ≤3 and chroma ≤1. At least 70% dark particles. Layer is underlain by a layer with value ≤4 and chroma ≤1 to a depth of 12” or to the spodic, whichever is less.

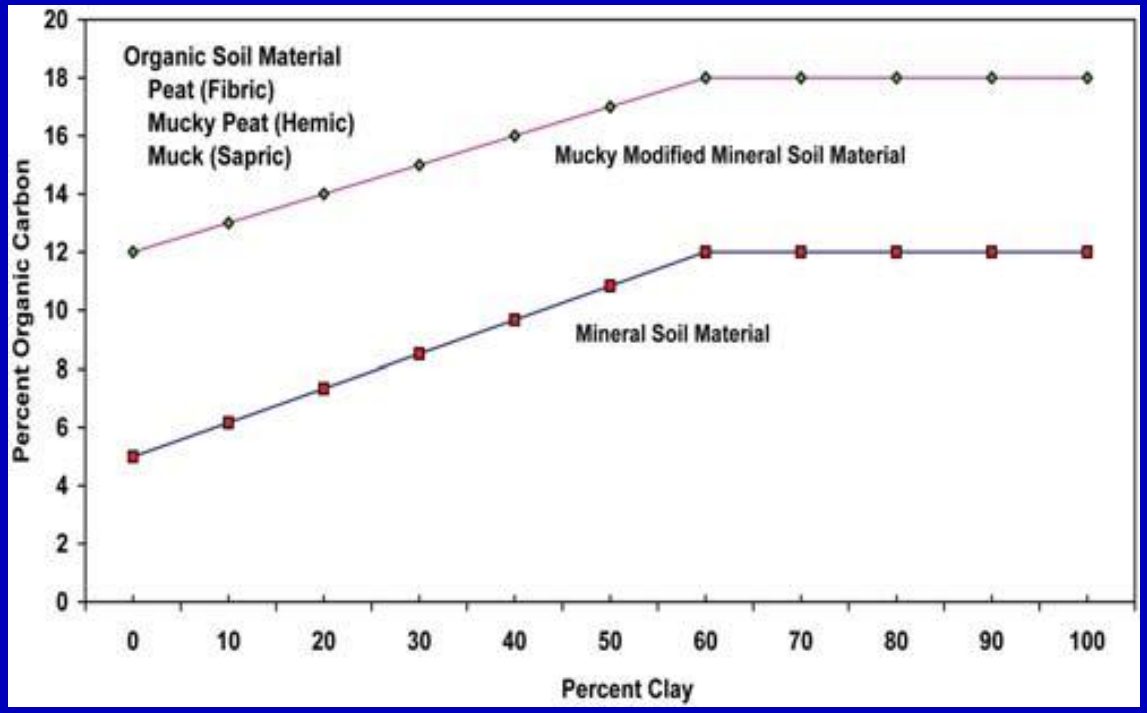
Problem Soils Only!

Loamy and Clayey Soils

- Texture is loamy very fine sand and finer
- Control section usually starts within 10-12 inches
- Most indicators are based upon the reduction/oxidation of Fe

F1, Loamy Mucky Mineral

- A layer of mucky modified loamy or clayey soil material 4” or more thick starting within 6” of the surface.



Even expert soil scientists can not consistently apply this indicator without lab data

- **Loamy Gleyed (F2) indicator in a dominantly Sandy soil.**

  Gleyed layer at approx. 9 inches, sandy material above.

F3, Depleted Matrix

A layer at least 6” thick with a depleted matrix that has 60% or more chroma 2 or less starting within 10” of the surface.

Depleted Matrix

Dominant color of the soil is “gray”

Commonly used to identify hydric soils

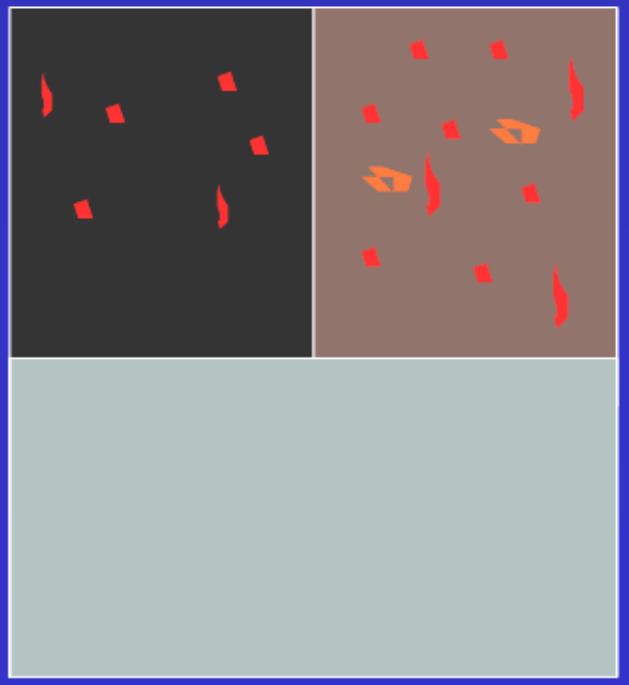
Loamy Soils

F6, Redox Dark Surface

- A layer at least 4” thick entirely within the upper 12” that has:

  a. matrix value ≤3 and chroma 1 or less and ≥2% redox concentrations, or

  b. matrix value ≤3 and chroma ≤2 and ≥5% redox concentrations.



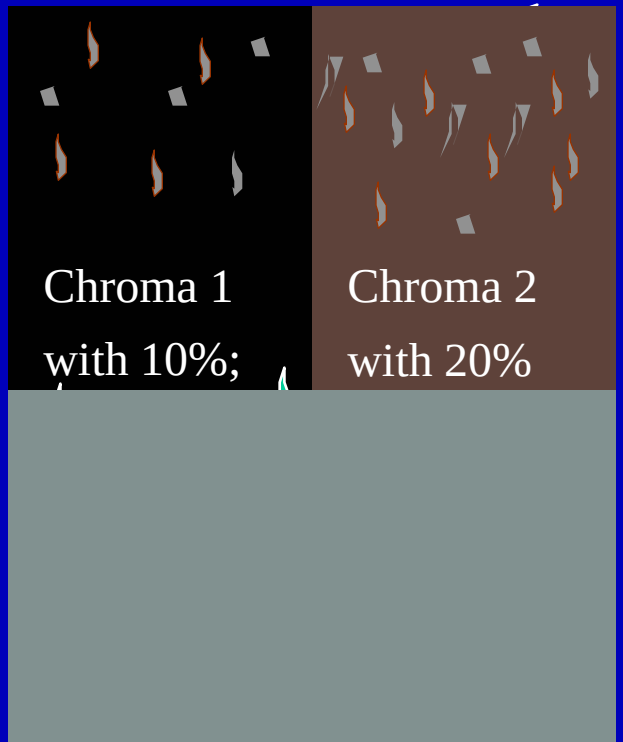
Chroma 1 with 2%

Chroma 2 with 5%

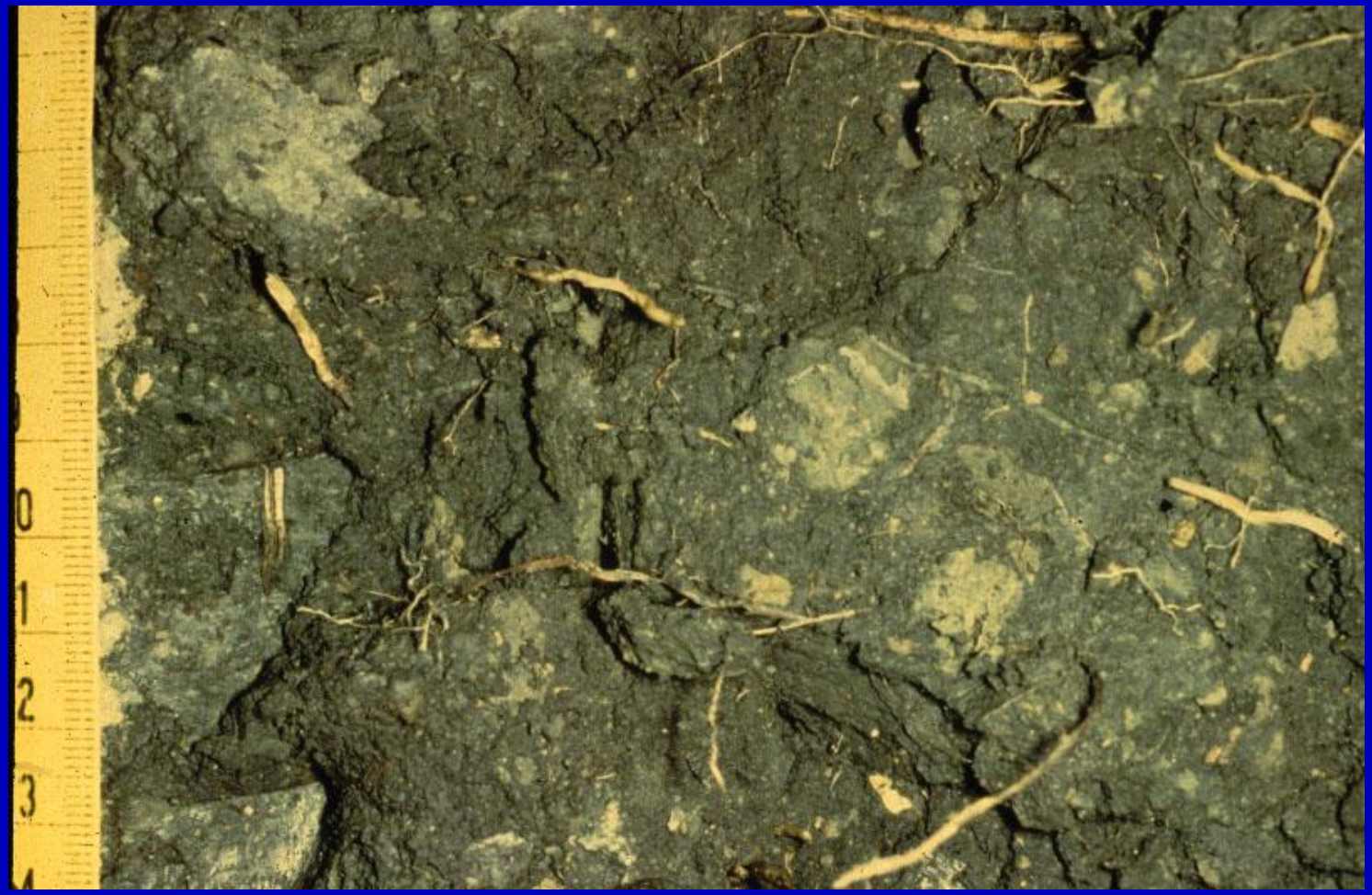
F7, Depleted Dark Surface

Redox depletions, with value ≥5 and chroma ≤2, in a layer at least 4” thick entirely within the upper 12” of the mineral soil that has:

a. value ≤3 and chroma ≤1 and 10% or more redox depletions, or
b. value ≤3 and chroma 2 and 20% or more redox depletions.



F7, Depleted Dark Surface



F8, Redox Depressions

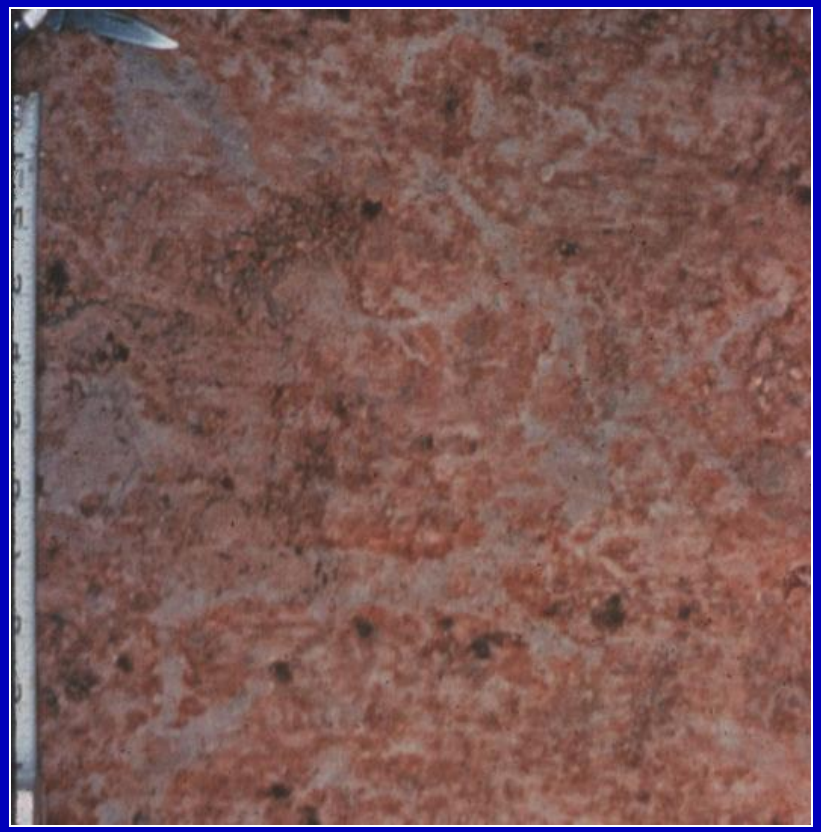
• In closed depressions subject to ponding, 5% or more redox concentrations in a layer 2” or more thick entirely within the upper 6” of the soil surface.

“Depressional” Landform

Loamy Soils

F12, Iron/Manganese Masses **(Problem soils only)**

- On floodplains, a layer ≥4” thick with ≥40% chroma ≤2, and ≥2% redox concentrations as soft Fe/Mn masses with diffuse boundaries (commonly Black). The layer occurs entirely within 12” of the soil surface.

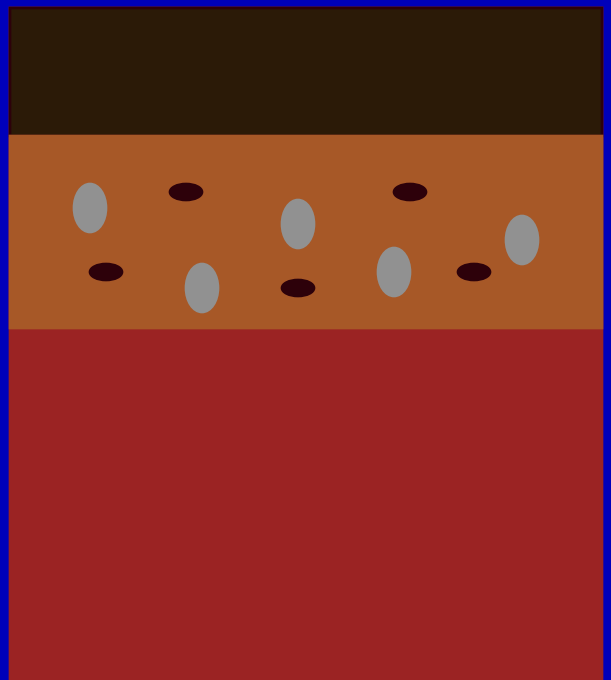


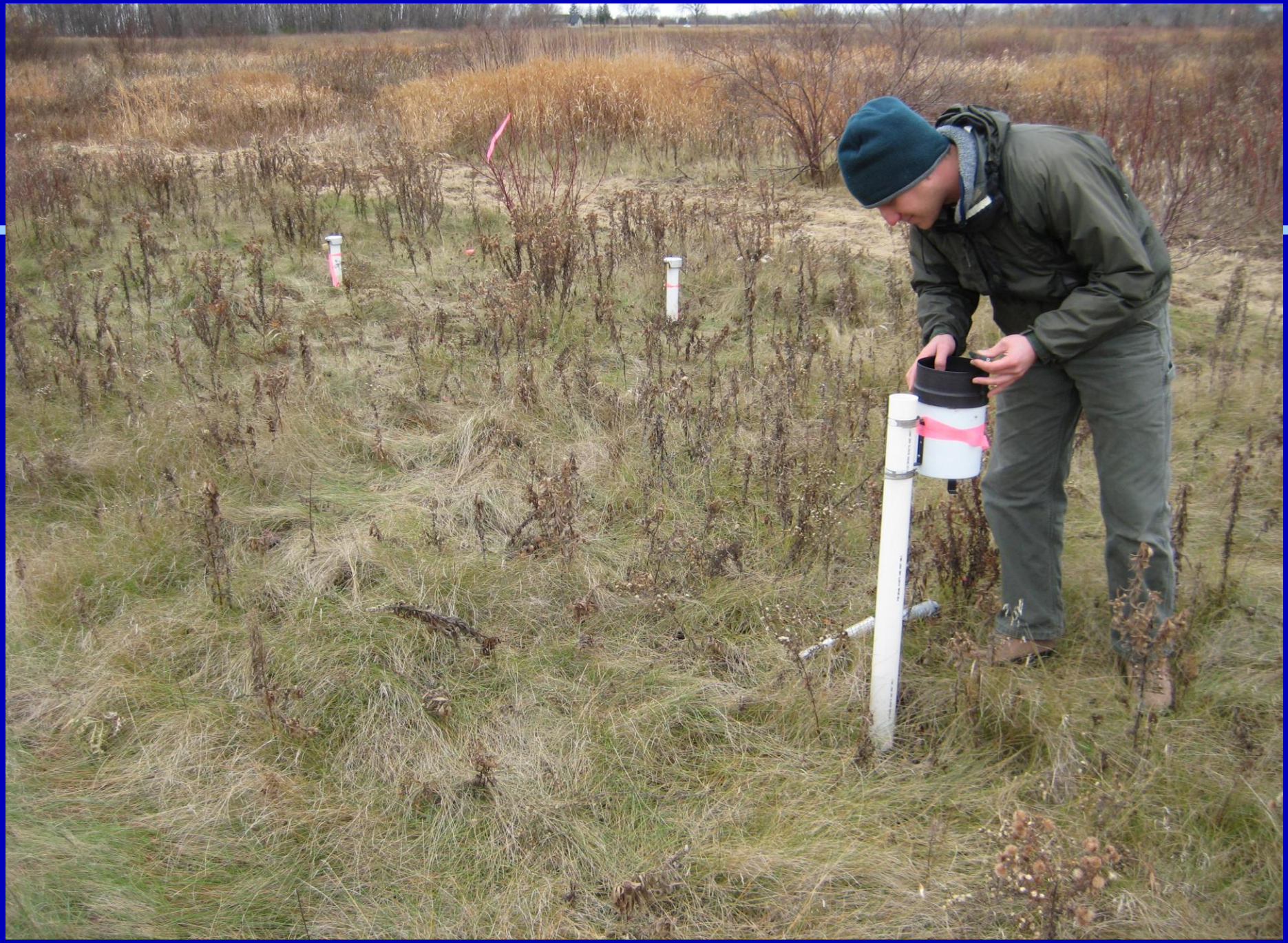
“Test” Indicators

- Indicators needing further study
- Designated for use for problematic hydric soils and require additional documentation
- A10, A16, S3, S7, S8, S9, F12, TF2, & TF12 can be used with “Problem Soils”

TF2, Red Parent Material

In parent material with a hue of 7.5YR or redder, a layer at least 4” thick with a matrix chroma of ≤4 and ≥2% redox depletions and/or concentrations. The layer is entirely within 12” of the soil surface.





TF12, Very Shallow Dark Surface

If bedrock occurs between 6-10”, a layer 6” thick starting within 4” that has value ≤3 and chroma ≤1. Remaining soil has same colors as above or any color with chroma ≤2.

If bedrock occurs within 6”, more than half the soil thickness has value of ≤3 and chroma ≤1. Remaining soil has same colors as above or any color with a chroma ≤2.

Hydric Soil Indicators for LRR K

- Histosol A1
- Histic Epipedon A2
- Black Histic A3
- Hydrogen Sulfide A4
- Stratified Layers A5
- **Depleted Below Dark Surface A11**
- **Thick Dark Surface A12**
- Sandy Mucky Mineral S1
- Sandy Gleyed Matrix S4

Hydric Soil Indicators for LRR K

- **Sandy Redox S5**
- Stripped Matrix S6
- Loamy Mucky Mineral F1
- Loamy Gleyed Matrix F2
- **Depleted Matrix F3**
- **Redox Dark Surface F6**
- Depleted Dark Surface F7
- Redox Depressions F8

Universal Indicators

- A11 Depleted Below Dark Surface
- A12 Thick Dark Surface
- S5 Sandy Redox
- F3 Depleted Matrix
- F6 Redox Dark Surface
- TF2 Red Parent Material

GET TO KNOW THESE!

Problem Soil Indicators

Are not recognized by the NTCHS, (test indicators)

or

Are not applicable to LRR K

NC Indicators for Problem Soils

- Not recognized in the geographic area
- Designated for use for problematic hydric soils and require additional documentation
- A10, A16, S3, S7, S8, S9, F12, TF2 and TF12 can be used with “Problem Soils” in the Northcentral Region

Identifying “Problem” Hydric Soils

Objectives

- Understand why “problem” hydric soils occur
- Be able to predict where problem hydric soils may occur
- Identify and document problem hydric soils

Problem Hydric Soils

Problem situations noted in the Corps Manual

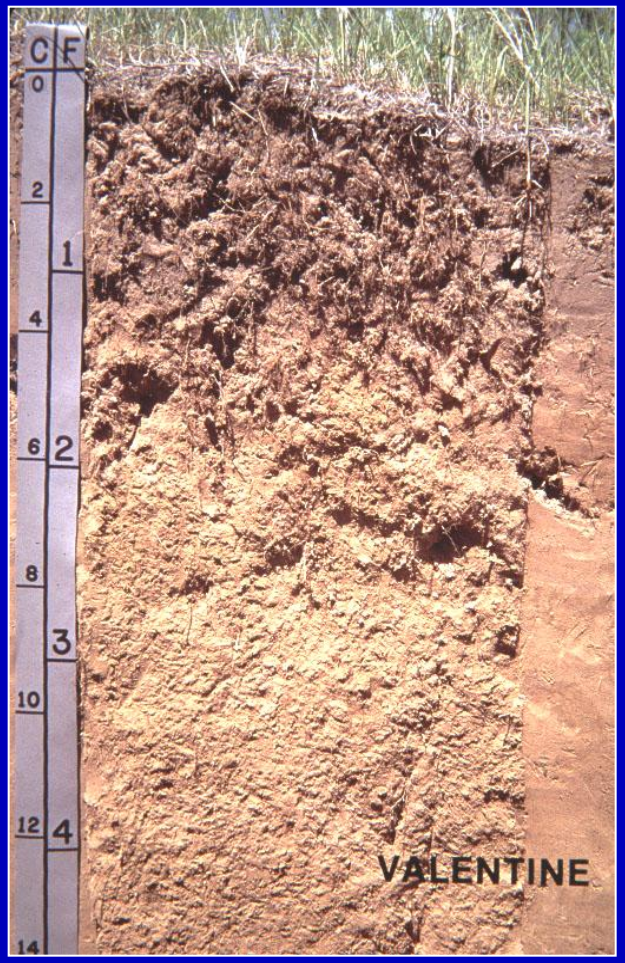
- **Para. 44 f. (2) "dark (black) mineral hydric soils"**
- **Para. 44 f. (2) "significant coloration due to the nature of the parent material (e.g., red soils...)"**
- **Para 45. "recently deposited sandy material"**
- **Para. 45 c. "organic pans" (Spodosols)**
- **Para. 76 "man-induced wetlands"**
- **Para. 78 a. "wetlands on drumlins"**

Problematic Hydric Soils

- *Soils with Faint or No Indicators*
  - Sandy soils
  - Red parent materials
  - Fluvial Deposits within Floodplains
  - Recently Developed Wetlands
  - Seasonally Ponded Soils
  - Discharge Areas for Iron-Enriched Groundwater

Problem: Sandy Soils

- Low iron or manganese content
- Lack of organic matter



Sandy Soils (what to look for)

- Surface layer of muck, peat, dark-colored mineral layer
- Blotchy colored subsoils
  - stripped matrix (S6)
- 2.5Y or 5Y hues with 3-chroma matrix and some redox features (A16)
  - caution, 3 chroma should not be inherited from parent material

Problem: Red Parent Material

- Reddish colored
  - Great Lakes region glacial lacustrine and till deposits
  - High Fe content inhibits formation of redox features

Well drained

SWP drained

Poorly drained

Red soils get “browner” as they get wetter

Red Parent Material

Look for redox depletions and concentrations in a red soil and use TF2 (Red Parent Material), F8 (Redox Depressions), and F12 (Fe-Mn Masses)

Problem: Fluvial Deposits within Floodplains

- **Deposition of new soil material**
- **Thick, sandy horizons**
- **Soils with little development**

Why a Problem?

- Lack redoximorphic features in upper part
  - recently deposited material
  - sandy materials low in organic matter
- Colors can be “lithochromic”
- Low Fe/Mn content

Problem: Fluvial Deposits

- May have to rely on evidence of flooding
  - Stratifications of OM
  - USGS stream gauge data
  - possibly chroma 3 with redox (A16)

Problem: Recently Developed Wetlands

- Mitigation sites
- Wetland Mgt Areas (waterfowl)
- Produced due to human activities
  (irrigation, sediment retention basin, etc.)
- Artificial Wetlands

Recently Developed Wetlands

Stormwater/Sediment retention basins

Recently Developed Wetlands

- Hydric soil *indicators* may be absent in wetlands created by recent human activities.
- If indicators of hydrophytic vegetation and wetland hydrology are present, soils can be assumed to be hydric.

Recently Developed Wetlands

- Check for and/or document Hydric Soil Criteria #3.

Soils that are frequently ponded (>50% chance of occurrence in any given year) for long or very long durations (7 – 30 days).

Problem: Seasonally Ponded Soils

- Ephemeral ponds in shallow depressions
- Wetlands on perched water-tables
- Oxbows and meander scars only inundated during flood events
- Document Hydric Soil Criteria #3

Seasonally Ponded Soils, F8

Problem: Discharge Areas for Iron-Enriched Groundwater

- Chroma is generally >3
- Seeps/toe-slopes on glacial till and drumlins or toe slopes associated with sandy parent materials
- Hydrology indicator B5 (Iron Deposits) can help identify this problem soil
- Look for redox in high chroma layer and depleted matrix below layer of Fe concentration

Iron Enriched Groundwater

Figure 39. Iron deposit (orange streaks) in a small channel.

Figure 40. At this site, ferrous iron moves with the groundwater from a cattail marsh to a shallow ditch, where it oxidizes when exposed to the air and forms an orange-colored iron deposit.

Problematic Hydric Soils

Non-Hydric Soils mis-interpreted as Hydric

- Spodosols
- Alfisols
- Soils with relict soil indicators

Mis-identified Hydric: Spodosols

- Mineral soils that have a spodic horizon.
- Amorphous mixtures of OM and Al, with or without Fe, have accumulated.
- Usually have a gray to light gray eluvial (E) horizon overlaying the spodic.

Mis-Idendified Hydric: Spodosol

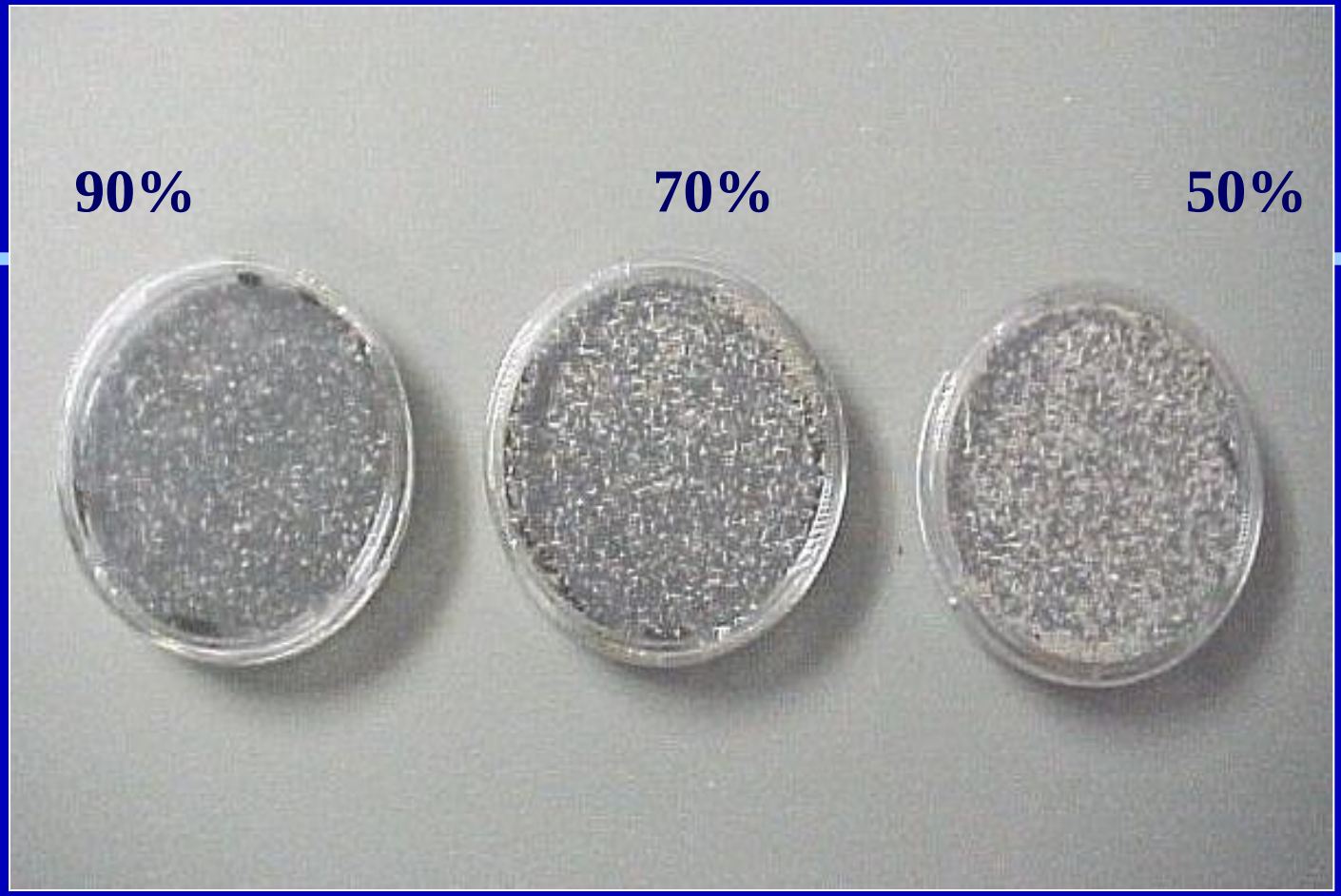
- Moist, cool climate
  - except many Aquods in SE
- Many are very sandy and naturally acidic
- Acid loving vegetation
  - spruce, pine, fir
- Relatively slow to form
  - several hundred to thousands of years

Spodosols: Why a problem?

- Lack redoximorphic features in the upper part
  - Fe leached into lower layers
  - sandy materials low in OM
- B horizon colors not always diagnostic
  - Fe in upper B horizons not responsive to oxidation / reduction reactions
- Often on flat or gently sloping landscapes

Spodosols (what to look for)

- Surface layer of peat or muck
- Black-colored mineral surface layer
  - 70% black, not salt and pepper
- Splotchy, streaky, or “dirty” E horizon
- High-chroma redox features in the E horizon
- Partly or wholly cemented spodic (ortstein) within 12”
- Gray colors below the spodic



"Dark Surface Sand" Samples

Spodosol
with ortstein

Problem: Alfisols (often non-Hydric)

Same as Spodosols: dark "A" horizon underlain by white/gray "E" horizon that is NOT developed under anaerobic, oxidation-reduction conditions

Need to look deeper, below the "E" horizon to see if color gets brighter (chroma >3) or grayer (chroma $\leq$2)

Problem: Mis-identified as Hydric

Soils with relict hydric soil indicators

Indicators of a previous wetter hydrology condition that is no longer present today

Abandonded river courses; incised stream channels; wetlands drained in the late 1800's or early 1900's

Age of Features

Redox features do not always indicate current hydrologic condition

- commonly found in drained (historic) wetlands
- can be relict of past climates
  - terraces & benches along rivers
  - relict features may have sharp edges and abrupt boundaries with the soil
- contemporary features should have diffuse boundaries

Relict vs Contemporary

Relict

Contemporary

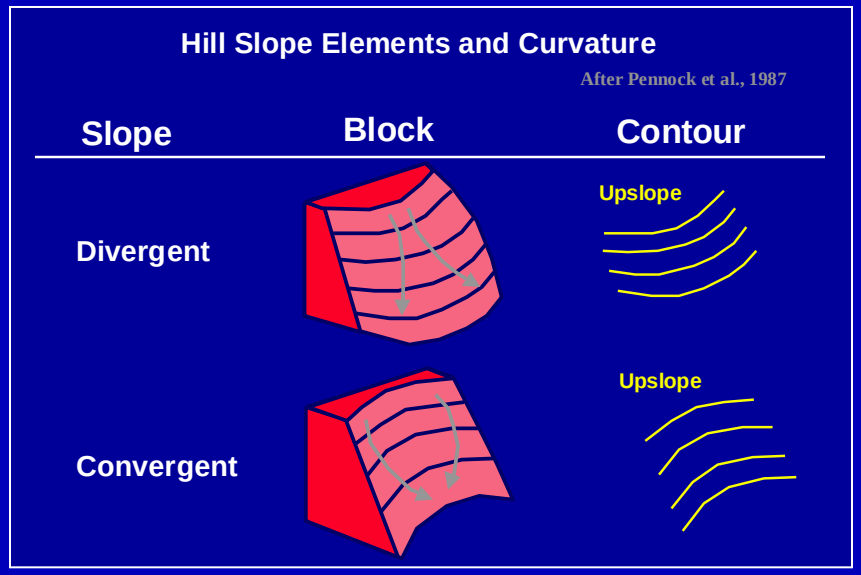
Relict features are often firm to extremely firm and have abrupt boundaries with the soil matrix, current features have diffuse boundaries

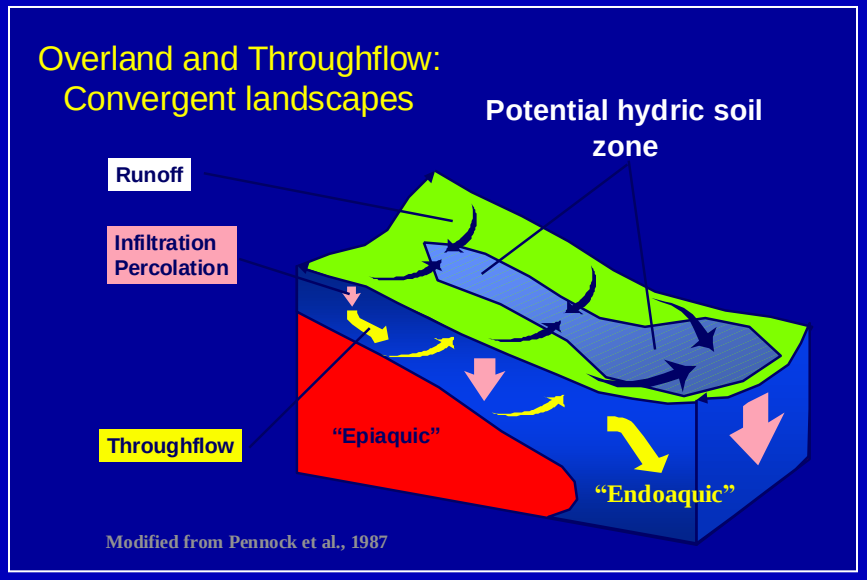
Still not sure?

- Landscape position, landscape position…
  - compare soil profiles from various landscape positions
- Look at the entire soil profile
  - top to bottom, not just 10” or immediately below the A

Landscape Position

- Critically influences water flow and soil formation
- Most wetlands, even groundwater seeps, are on some sort of concave surface





Still not sure?

- Indicators of wetland hydrology and a hydrophytic plant community
  - herbaceous layer is often more diagnostic than trees
- When all else fails....

… MONITOR !!
Apply the technical standard

NC Supplement Procedure for Problem Soils

1. Is hydrophytic vegetation present? If Yes, go to 2.
2. Is 1 primary or 2 secondary hydrology indicators present? If Yes, go to 3.
3. Will landscape position collect or concentrate water? If Yes, go to 4.
4. In the Remarks Section, put why no Indicators were met and determine whether the soil is hydric by:

NC Supplement Procedures

4a. meeting Problem Indicators A10, A16, S3, S7, S8, S9, F12, TF2 or TF12

4b. meeting Problematic Soil Situations

- **-Sandy soils**
- **-Red parent material**
- **-Fluvial deposits within floodplains**
- **-Recently developed wetlands**
- **-Seasonally ponded soils**
- **-Discharge areas for iron-enriched groundwater**

NC Supplement Procedures

4c. having a 4” layer starting w/in 12” that oxidizes when exposed to air. (must change color w/in 30 minutes and does NOT dry out)

4d. having a 4” layer w/in 12” that is reduced, indicating ferrous iron is present. (soil must be saturated in order to test a freshly broken ped face with alpha, alpha-dipyridyl dye)

4e. having stream gauge data, water-table monitoring data or repeated observation that show soil is flooded, ponded, or saturated to the surface for ≥14 consecutive days during the growing season.

If Yes to any above, soil is Hydric, put in remarks section.

Hydric Soils Tech Note 4

NC Supplement permits combining Indicators if all requirements are met except thickness.

- S5 – Sandy Redox
- S7 – Dark Surface
- F1 – Loamy Mucky Mineral
- F3 - Depleted Matrix
- F6 – Redox Dark Surface
- F7 – Depleted Dark Surface

Hydric Soils Tech Note 4

0-3, 10YR 2/1, Loam
3-6, 10YR 3/1, cmp 7.5YR redox, Loam
6-10, 10YR 5/2, cmp 7.5YR redox, Loam
10-20, 2.5Y 4/2, Loam

- F6 needs 4 inches w/in upper 12 inches
- F3 needs 6 inches starting w/in 10 inches

- Combine layer 2 & 3 to meet the more restrictive 6 inch requirement of F3

The 'Professional Judgment' Clause

- The indicators are used to help identify the hydric soil component of wetlands; however, some hydric soils do not have any of the currently listed indicators. The absence of any listed indicator does not preclude the soil from being hydric.
  - Some "wet" sites will not meet an indicator. What do we do if we believe a soil is hydric?
- Guidance for identifying hydric soils that lack indicators can be found in Chapter 3 (see the sections on documenting the site and its soils) and in Chapter 5 (Difficult Wetland Situations in the Region).

The Future

- 2010 Field Indicators is a “classification” system
- Dynamic, it is anticipated that more indicators will be added
- If it does not meet an indicator, it doesn’t necessarily mean it is a non-hydric soil. **This is important!!**

Take Home Message: Soils

- A method to prove (or disprove??) the presence of a hydric soil is now available
- Confirming the “mapped soil type” is no longer needed to complete a data sheet
- General hydric soil indicators are replaced with ones that can be felt, seen or smelled
- New soil indicators relate well to several hydrology indicators: A1, B7, C7, C9, D2
- Soil survey water table data (for a secondary hydrology indicator) no longer ‘allowed’

This Presentation can be downloaded at following web-site for the next 2 weeks:

ftp://ftp-fc.sc.egov.usda.gov/WI/resources/NCsupplementSoils.pdf
OR
http://www.wi.nrcs.usda.gov
Click on "Conservation Planning"
Click on "NC Supplement Soils"

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, sex, religion, age, disability, political beliefs, sexual orientation, or marital or family status. (Not all prohibited bases apply to all programs.) Persons with disabilities who require alternative means for communication of program information (Braille, large print, audiotape, etc.) should contact USDA's TARGET Center at (202) 720-2600 (voice and TDD).

To file a complaint of discrimination, write USDA, Director, Office of Civil Rights, Room 326-W, Whitten Building, 1400 Independence Ave. Avenue SW, Washington D.C. 20250-9410 or call (202) 720-5964 (voice and TDD). USDA is an equal opportunity provider and employer.

NRCS Natural Resources Conservation Service