

# Hydric Soil Indicators

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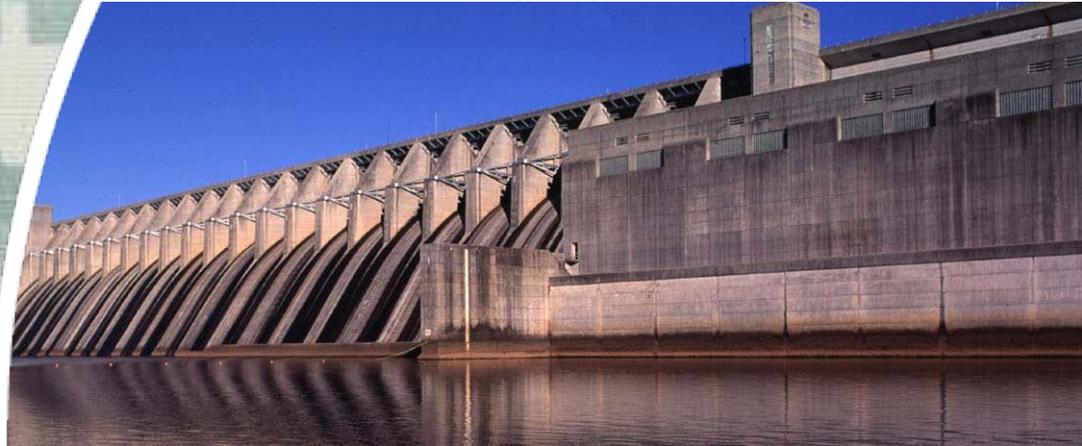
Savannah, Georgia

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US Army Corps of Engineers  
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# 1987 Data Form

- 11 Hydric Soil Indicators (plus “other”):
- \_\_\_ Histosol
- \_\_\_ Concretions
- \_\_\_ Histic Epipedon
- \_\_\_ High Organic Content in Surface Layer Sandy Soils
- \_\_\_ Sulfidic Odor
- \_\_\_ Organic Streaking in Sandy Soils
- \_\_\_ Aquic Moisture Regime
- \_\_\_ Listed on Local Hydric Soils List
- \_\_\_ Reducing Conditions
- \_\_\_ Listed on National Hydric Soils List
- \_\_\_ Gleyed or Low-Chroma Colors
- \_\_\_ Other (Explain in Remarks)



# Regional Supplements

- 23 Indicators on the Eastern Mountain and Piedmont Data Form + Indicators for Problem Hydric Soils
- 33 on the Atlantic and Gulf Coastal Plain Data Form + Indicators for Problem Hydric Soils



# Atlantic and Gulf Coastal Plain

## Hydric Soil Indicators:

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5)
- Organic Bodies (A6) **(LRR P, T, U)**
- 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- Muck Presence (A8) **(LRR U)**
- 1 cm Muck (A9) **(LRR P, T)**
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Coast Prairie Redox (A16) **(MLRA 150A)**
- Sandy Mucky Mineral (S1) **(LRR O, S)**
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Dark Surface (S7) **(LRR P, S, T, U)**
- Polyvalue Below Surface (S8) **(LRR S, T, U)**
- Thin Dark Surface (S9) **(LRR S, T, U)**
- Loamy Mucky Mineral (F1) **(LRR O)**
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)

## Hydric Soil Indicators (cont.):

- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Marl (F10) **(LRR U)**
- Depleted Ochric (F11) **(MLRA 151)**
- Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- Umbric Surface (F13) **(LRR P, T, U)**
- Delta Ochric (F17) **(MLRA 151)**
- Reduced Vertic (F18) **(MLRA 150A, 150B)**
- Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

## Indicators for Problem Hydric Soils:

- 1 cm Muck (A9) **(LRR O)**
- 2 cm Muck (A10) **(LRR S)**
- Reduced Vertic (F18) **(outside MLRA 150A,B)**
- Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
- Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
- Red Parent Material (TF2)
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)



# How to Proceed?



Describe your soil!

Depth (inches)	Matrix		Redox Features				
	Color (moist)	%	Color (moist)	%	Type	Loc	Texture
0-20"	10 YR 5/1	70%	10 YR 5/4	30%	C	PL	Sandy Clay Loam



# Indicators

- Use “Field Indicators of Hydric Soils in the United States” most current version, currently Version 7.0.
- Example Indicator:
- F3. Depleted Matrix. For use in all LRRs except W, X, and Y. A layer that has a depleted matrix with 60% or more chroma of 2 or less that has a minimum thickness of either:
  - a. 5 cm (2 inches) if the 5 cm is entirely within the upper 15 cm (6 inches) of the soil, or
  - b. 15 cm (6 inches), starting within 25 cm (10 inches) of the soil surface.

User Notes: A depleted matrix requires a value of 4 or more and chroma of 2 or less. Redox concentrations, including soft iron-manganese masses and/or pore linings, are required in soils with matrix colors of 4/1, 4/2, or 5/2. A, E, and calcic horizons may have low chromas and high values and may therefore be mistaken for a depleted matrix; however, they are excluded from the concept of depleted matrix unless the soil has common or many distinct or prominent redox concentrations occurring as soft masses or pore linings. The low-chroma matrix must be the result of wetness and not a weathering or parent material feature.



# Alpha-Numeric Indicator

- **F3.** Depleted Matrix.
- 3 designations, A, F, and S.
- A = All soils
- F = Loamy and Clayey soils
- S = Sandy soils

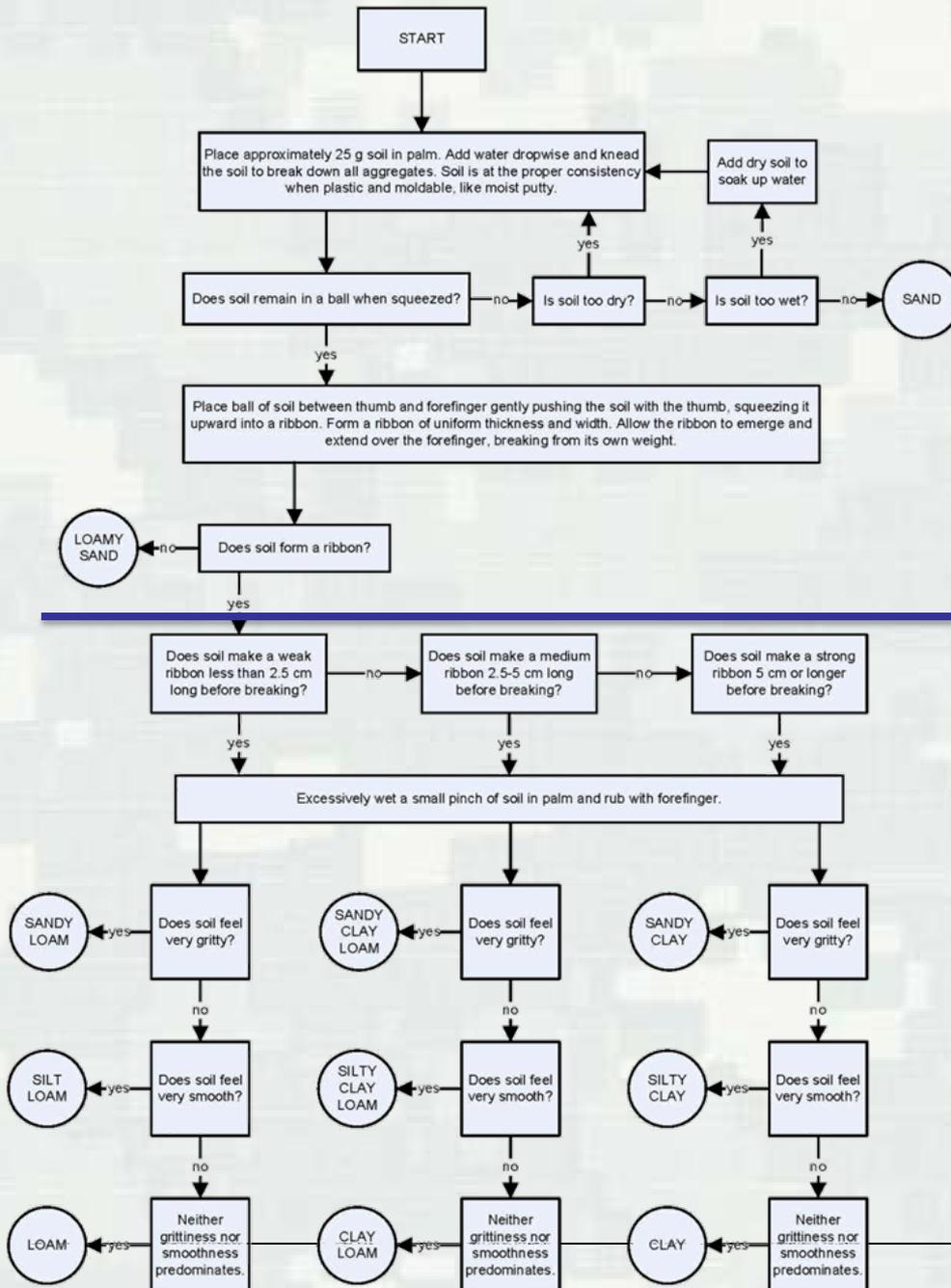
How to determine soil texture?



Loamy fine sand – 50% or more fine sand; or less than 50% very fine sand and a total of less than 25% very coarse, coarse and medium sand

## Sandy Indicators

## Loamy and Clayey Indicators



# For Use In...

- Pay attention to the Land Resource Region. There are 3 LRRs in Georgia:
  - LRR N (Central Eastern Mountains),
  - LRR P (South Atlantic and Gulf Coast Region),
  - LRR T (Outer Coastal Plain).
- There are 8 Major Land Resource Areas in Georgia.
  - MLRA 128 – Southern Appalachian Ridges and Valleys
  - MLRA 129 – Sand Mountain
  - MLRA 130B – Southern Blue Ridge
  - MLRA 133A – Southern Coastal Plain
  - MLRA 136 – Southern Piedmont
  - MLRA 137 – Carolina and Georgia Sandhills
  - MLRA 153B – Tidewater
  - MLRA 153A – Atlantic Coast Flatwoods



# LRRs in Georgia



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# Example

- A8. Muck Presence. For use in LRRs U, V, and Z. A layer of muck with value of 3 or less and chroma of 1 or less, starting within 15 cm (6 inches) of the soil surface.



# Description and User Notes

- Back to Indicator F3:
- F3. Depleted Matrix. For use in all LRRs except W, X, and Y. A layer that has a depleted matrix with 60% or more chroma of 2 or less that has a minimum thickness of either:
  - a. 5 cm (2 inches) if the 5 cm is entirely within the upper 15 cm (6 inches) of the soil, or
  - b. 15 cm (6 inches), starting within 25 cm (10 inches) of the soil surface.
- Awesome, I have 100% 10 YR 3/1 loam matrix from 0-6", the soil is hydric!



# User Notes

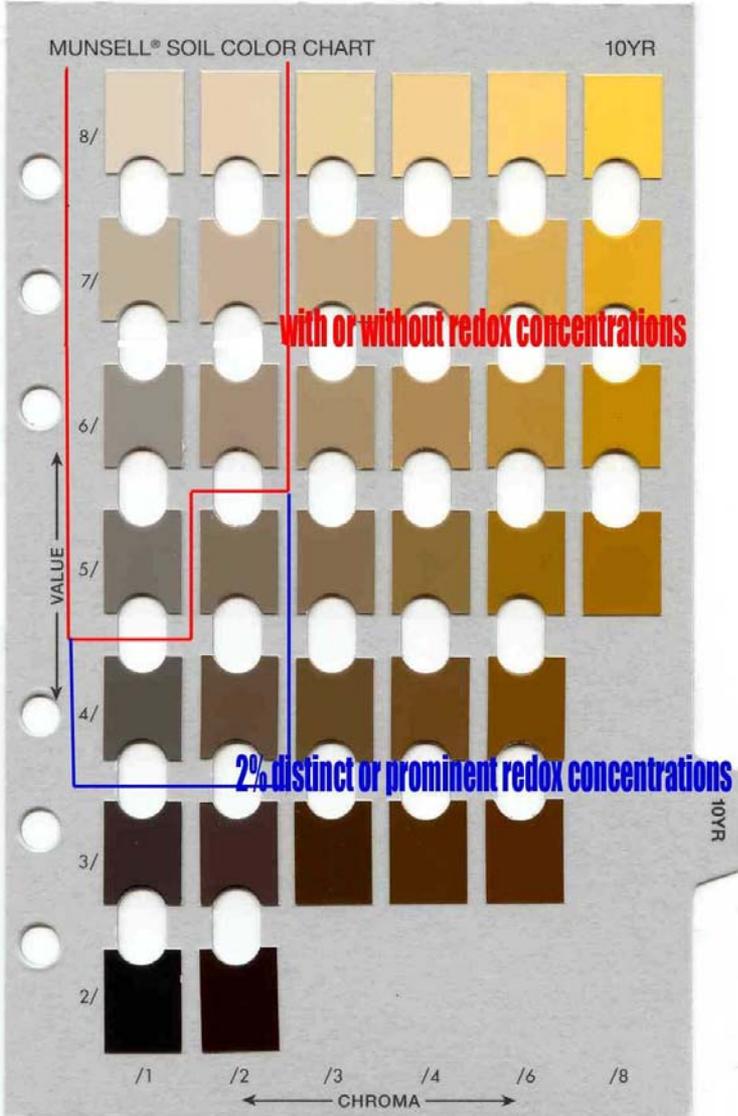
- User Notes: A depleted matrix requires a value of 4 or more and chroma of 2 or less. 10 YR 3/1 doesn't meet this.
- Say I have a 100% 10 YR 4/1 loam matrix from 0-6”?

## KEEP READING!

- Redox concentrations, including soft iron-manganese masses and/or pore linings, are required in soils with matrix colors of 4/1, 4/2, or 5/2. A, E, and calcic horizons may have low chromas and high values and may therefore be mistaken for a depleted matrix; however, they are excluded from the concept of depleted matrix unless the soil has common or many distinct or prominent redox concentrations occurring as soft masses or pore linings. The low-chroma matrix must be the result of wetness and not a weathering or parent material feature.
- Keep an eye out for minimum thickness criteria!



# Depleted Matrix



## In conclusion...

- Read the indicators fully. Use them to narrow down your choices but to also make sure your indicator matches your location and your soil description.
- If you have a problem area, ask a Corps regulator to come out in the field with you as part of a JD request.

## Questions?

