

Florida Hydric Soil Indicators for Delineation (June, 2010): Prepared by Wade Hurt (whurt@ufl.edu). Provided by FAESS (<http://www.faess.org/>)

Hydric Soil Delineation Indicators for All Soils: These indicators are for all soils regardless of texture.

A5. Stratified Layers. *For use in all LRRs.* Several stratified layers starting within the upper 6 inches of the soil surface. At least of the layers has value 3 or less with chroma 1 or less or it is muck, mucky peat, peat or mucky modified mineral texture. The remaining layers have chroma 2 or less. Any sandy material that constitutes the value 3 or less and chroma 1 or less layer, using a 10X to 15X hand lens, must have at least 70% of the visible soil particles masked with organic material. Observation without a hand lens appears to be close to 100% masked

A6. Organic Bodies. *For use in all LRRs.* Presence of 2% or more organic bodies of muck or a mucky modified mineral texture starting within 6 inches of the soil surface.

A7. 5 cm Mucky Mineral. *For use in all LRRs.* A mucky modified mineral layer 2 inches or more thick starting within 6 inches of the soil surface.

A8. Muck Presence. *For use in LRR U.* A layer of muck with value 3 or less and chroma 1 or less starting within 6 inches of the soil surface.

A9. 1 cm Muck. *For use in LRRs P and T.* A layer of muck 1 cm or more thick with value 3 or less and chroma 1 or less starting within 6 inches of the soil surface.

Hydric Soil Delineation Indicators for Sandy Soils: These indicators are for soil materials with a USDA texture of loamy fine sand and coarser. All mineral layers above any of the S Indicators except for Indicator S6 have dominant chroma 2 or

less, or the layer(s) with dominant chroma of more than 2 is less than 6 inches thick.

S5. Sandy Redox. *For use in all LRRs.* A layer starting within 6 inches of the soil surface that is at least 4 inches thick, and has a matrix with 60 % or more of its volume chroma 2 or less with 2% or more distinct or prominent redox concentrations as soft masses and/or pore linings.

S6. Stripped Matrix. *For use in all LRRs.* A layer starting within 6 inches of the soil surface in which iron/manganese oxides and/or organic matter have been stripped from the matrix exposing the primary base color of soil materials. The stripped areas and translocated oxides and/or organic matter form a faintly contrasting pattern of 2 or more colors with diffuse boundaries. The stripped zones are 10% or more of the volume and are rounded.

S7. Dark Surface. *For use in all LRRs.* A layer 4 inches thick starting within the upper 6 inches of the soil surface with a matrix value 3 or less and chroma 1 or less. Using a 10X or 15X hand lens at least 70% of the visible soil particles must be masked with organic material. Observation without a hand lens appears to be close to 100% masked. The matrix color of the layer immediately below the dark layer must have the same colors as those described above or any color that has chroma 2 or less.

S8. Polyvalue Below Surface. *For use in LRRs T and U.* A layer with value 3 or less and chroma 1 or less starting within 6 inches of the soil surface. Using a 10X or 15X hand lens at least 70% of the visible soil particles must be masked with organic material. Observation without a hand lens appears to be close to 100% masked. Immediately below this layer, 5% or more of the soil volume has

value 3 or less and chroma 1 or less and the remainder of the soil volume has value 4 or more and chroma 1 or less to a depth of 12 inches or to the spodic horizon, whichever is less.

S9. Thin Dark Surface. *For use in LRRs T and U.* A layer 2 inches or more thick within the upper 6 inches of the surface, with value 3 or less and chroma 1 or less. Using a 10X or 15X hand lens at least 70% of the visible soil particles must be masked with organic material. Observation without a hand lens appears to be close to 100% masked. This layer is underlain by a layer(s) with value 4 or less and chroma 1 or less to a depth of 12 inches or to the spodic horizon, whichever is less.

Hydric Soil Delineation Indicators for Loamy and Clayey Soils: These indicators are for soil materials with a USDA texture of loamy very fine sand and finer. All mineral layers above any of the layers meeting an F Indicator(s) except for Indicators F8 and F12 have dominant chroma 2 or less, or the layer(s) with dominant chroma of more than 2 is less than 6 inches thick.

F3. Depleted Matrix. *For use in all LRRs.* A layer with a depleted matrix that has 60% or more chroma 2 or less that has a minimum thickness of either:

- a. 2 inches if the 2 inches is entirely within the upper 6 inches of the soil, or
- b. 6 inches and starts within 10 inches of the soil surface. **See definition of depleted matrix on back.**

F6. Redox Dark Surface. *For use in all LRRs.* A layer at least 4 inches thick entirely within the upper 12 inches of the mineral soil that has:

- a. matrix value 3 or less and chroma 1 or less and 2% or more distinct or prominent

redox concentrations as soft masses or pore linings, or

- b. matrix value 3 or less and chroma 2 or less and 5% or more distinct or prominent redox concentrations as soft masses or pore linings.

F8. Redox Depressions. *For use in all LRRs* In closed depressions subject to ponding, 5% or more distinct or prominent redox concentrations as soft masses or pore linings in a layer 2 inches or more thick entirely within the upper 6 inches of the soil surface. This indicator occurs on landforms such as: "Grady" ponds, and potholes: not micro-depressions on convex or plane landscapes.

F10. Marl. *For use in LRR U.* A layer of marl with a value 5 or more starting within 4 inches of the soil surface. Normally this indicator occurs at the soil surface.

F12. Iron/Manganese Masses. *For use in LRRs P and T.* On flood plains, a layer 4 inches or more thick with a depleted matrix that has 40% or more chroma 2 or less, and 2% or more distinct or prominent redox concentrations as soft iron/manganese masses with diffuse boundaries. The layer occurs entirely within 12 inches of the soil surface. Iron/manganese masses have value 3 or less and chroma 3 or less. The thickness requirement is waived if the layer is the mineral surface layer.

F13. Umbric Surface. *For use in all LRRs.* In depressions and other concave positions, a layer 10 inches or more thick starting within the upper 6 inches of the soil surface in which the upper 6 inches must have with value 3 or less and chroma 1 or less and the lower 4 inches must have the same colors as above or any other color that has a chroma 2 or less.

Hydric Soil Identification Indicators for All Soils:

A1. Histosol. *For use in all LRRs.* Classifies as a Histosol, except Folists. All Histosol requirements contained in Soil Taxonomy must be met.

A2. Histic Epipedon. *For use in all LRRs.* A histic epipedon underlain by mineral soil material with chroma 2 or less. All Histic Epipedon requirements contained in Soil Taxonomy must be met.

A3. Black Histic. *For use in all LRRs.* A layer of peat, mucky peat, or muck 8 to 16 inches or more thick starting within the upper 6 inches of the soil surface having hue 10YR or yellower value 3 or less, and chroma 1 or less underlain by mineral soil material with chroma 2 or less.

A4. Hydrogen Sulfide. *For use in all LRRs.* A hydrogen sulfide odor within 12 inches of the soil surface.

A11. Depleted Below Dark Surface. *For use in all LRRs.* A layer with a depleted or gleyed matrix that has 60% or more chroma 2 or less starting within 12 inches of the soil surface that has a minimum thickness of either:

- a. 6 inches, or
 - b. 2 inches if the 2 inches consists of fragmental soil material (see glossary).
- Loamy/clayey layer(s) above the depleted or gleyed matrix must have value 3 or less and chroma 2 or less. Any sandy material above the

depleted or gleyed matrix must have value 3 or less and using a 10X or 15X hand lens at least 70% of the visible soil particles must be with organic material. Observation without a hand lens appears to be close to 100% masked.

A12. Thick Dark Surface. *For use in all LRRs.* A layer at least 6 inches thick with a depleted or gleyed matrix that has 60% or more chroma 2 or less starting below 12 inches of the surface. The layer(s) above the depleted or gleyed matrix have value 2.5 or less to a depth of 12 inches and value 3 or less and chroma 1 or less in the remainder of epipedon. Any sandy material above the depleted or gleyed matrix using a 10X or 15X hand lens at least 70% of the visible soil particles must be with organic material. Observation without a hand lens appears to be close to 100% masked.

Hydric Soil Identification Indicators for Sandy Soils:

S4. Sandy Gleyed Matrix. *For use in all LRRs.* A gleyed matrix which occupies 60% or more of a layer starting within 6 inches of the soil surface. The definition of a Gleyed Matrix must be met; colors on the gleyed pages of color charts and value of 4 or more.

Hydric Soil Identification Indicators for Loamy and Clayey Soils

F2. Loamy Gleyed Matrix. *For use in all LRRs.* A gleyed matrix that occupies 60% or more of a layer starting within 12 inches of the soil surface. The definition of a Gleyed Matrix must be met; colors on the gleyed pages of color charts and value of 4 or more.

F7. Depleted Dark Surface. *For use in all LRRs.* Redox depletions, with value 5 or more and chroma 2 or less, in a layer at least 4 inches thick entirely within the upper 12 inches of the mineral soil that has:

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

Depleted Matrix Definition:

The following combinations of value and chroma identify a depleted matrix:

1. Matrix value 5 or more and chroma 1 with or without redox concentrations; or
2. Matrix value 6 or more and chroma 2 or 1 with or without redox concentrations; or
3. Matrix value 4 or 5 and chroma 2 and 2 percent or more distinct or prominent redox concentrations; or
4. Matrix value 4 and chroma 1 and 2 percent or more distinct or prominent redox concentrations.

Any sandy material deemed a depleted matrix must have redox concentration regardless of value and chroma.

A and E 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.

Test Indicators

Test indicators are for testing only and are not to be used for identifying and

delineating hydric soils.

TF2. Red Parent Material. *For testing in LRR P.* In parent material with a hue of 7.5YR or redder, a layer at least 4 inches thick with a matrix value 4 or less and chroma 4 or less and 2% or more redox depletions and/or redox concentrations as soft masses and/or pore linings. The layer is entirely within 12 inches of the soil surface. The minimum thickness requirement is 2 inches if the layer is the mineral surface layer. This indicator is for test in areas of red parent material and might occur on "Red River" flood plains such as the Apalachicola and Escambia Rivers. Redox features most noticeable in red materials include redox depletions and soft manganese and iron/manganese masses that are black to dark reddish black.

TF12. Very Shallow Dark Surface. *For testing in all LRRs.* In depressions and other concave landforms, one of the following a) if bedrock occurs between 15 cm (6 inches) and 25 cm (10 inches), a layer at least 15 cm (6 inches) thick starting within 10 cm (4 inches) of the soil surface with value 3 or less and chroma 1 or less, and the remaining soil to bedrock must have the same colors as above or any other color that has a chroma 2 or less.
b) if bedrock occurs within 15 cm (6 inches), more than half of the soil thickness must value 3 or less and chroma 1 or less, and the remaining soil to bedrock must have the same colors as above or any other color that has a chroma 2 or less.