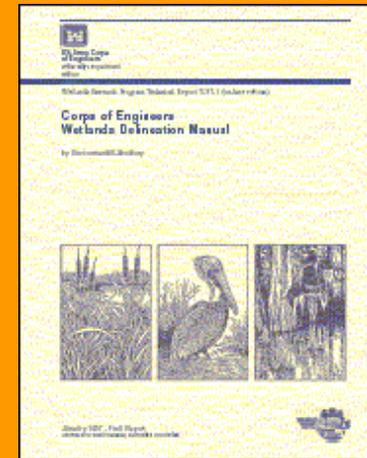


The New England Hydric Soils Technical Committee – 16 years in 10 minutes!



NEW ENGLAND INDICATORS

- 87 Manual used soil drainage classes in the criteria for a hydric soil.
- Drainage classes were mainly an agricultural term without soil morphology associated.
- In the 1980's the NE office of the ACOE with assistance of the NRCS (Pete Fletcher) established drainage class criteria for all of NE - document available at:
<http://nesoil.com/properties/drainageclasses.htm>.





New England Hydric Soil Technical Committee

- Federal Agencies (NRCS, ACOE, EPA, USFWS)
- State Agencies (NH DES, CTDEP, Maine Dept of Ag)
- University Personnel (UCONN, URI, UMASS, UNH)
- Private Sector (Consultants)
- 15 member steering team, 4 person chair – meet 2-4 times/year in NH.

Peter Fletcher (Chair), Retired from USDA - Natural Resources Conservation Service
Stephen Gourley, USDA - Natural Resources Conservation Service - Vermont
James Gove, Gove Environmental Services
Peter Hammen, New Hampshire Dept. of Environmental Services
Wayne Hoar, USDA - Natural Resources Conservation Service - Maine
Joseph Homer, USDA - Natural Resources Conservation Service – New Hampshire
Steven Hundley, USDA - Natural Resources Conservation Service – New Hampshire
Kenneth Kettnering, New Hampshire Dept. of Environmental Services
George Loomis, University of Rhode Island
Rebekah Lacey, New England Interstate Water Pollution Control Commission
Ruth Ladd, US Army Corps of Engineers
Raymond Lobdell, Lobdell and Associates
Dr. Harvey Luce, University of Connecticut
Scott Lussier, New England Interstate Water Pollution control Commission
Wende Mahaney, US Fish and Wildlife Service
David Maroney, Maine Association of Professional Soil Scientists

Joseph Noel, Maine Association of Professional Soil Scientists
Thomas Peragallo, Peragallo Associates
Jeff Peterson, Vanesse Hangen Brustlin
Sidney Pilgrim, University of New Hampshire
David Rocque, Maine Dept. of Agriculture, Food and Rural Resources
Matthew Schweisberg, US Environmental Protection Agency

Field Indicators for Identifying Hydric Soils in New England

- Only region-wide publication not based on National indicators.
- Recognized by the ACOE to conform to results obtained using the 1987 Manual.
- ACOE encourages its usage throughout New England (conforms to the 87 manual).
- All 6 NE states recognize the NE Indicators in their State wetland regulations as a technical guide for wetland delineation.
- Published through the New England Interstate Water Pollution Control Commission. More than 3,000 copies distributed.

Genesis of an Indicator

- Soils formed in dark (lithochromic) mineralogy.
- Recognized as “Problem soils” In 87 manual.
- Dark soil subcommittee formed.
- Hydric Tour: RI 2000 – thesis study, VT/NH 2003 Cabot site with data.
- Meetings and let the Emails fly!



September 17, 2003

CABOT SOIL (31C) – Rochester, VT (Windsor County); approx. 10% slope

Vegetation (using mid-points) close to wells

Shrubs (15' radius):

Spiraea tomentosa (steeplesh) FACW 38%/38 = 100%

Herbs (5' radius):

Aster nova-belgii (New York aster) FACW+ 3/76 = 4%

Aster vimineus (?) (small white aster) FAC 10.5/76 = 14%

Carex lurida (lurid sedge) OBL 10.5/6 = 14%

Euthamia graminifolia (narrowleaved goldenrod) FAC 3/76 = 4%

Geranium pratense (?) not listed 10.5/76 = 14%

Juncus effusus (soft rush) FACW+ 3/76 = 4%

Onoclea sensibilis (sensitive fern) FACW 10.5/76 = 14%

Phleum pratense (Timothy) FACU trace

End Result

- Dark Mineral indicator developed based on data.
- VIII Approved for version 3.
- Tested in field.
- Re-write for National

VIII. DARK MINERAL SOILS. Soils with a matrix chroma of 2 or less that extends to a depth of 20 inches below the *top of the mineral soil material*, and that have a *dark A or Ap horizon* (with or without an *O horizon*) that is directly underlain by a horizon with a matrix value of less than 4, and within 12 inches of the *top of the mineral soil material* or directly underlying an *A or Ap horizon*, whichever is shallower, 2 percent or more *redoximorphic features* that extend to:

- A. a depth of 20 inches below the *top of the mineral soil material*; or
- B. a *depleted or gleyed matrix*, whichever is shallower; or

1) A___. Dark Mineral Soils. A mineral surface layer with value 3 or less that is directly underlain by a layer with a matrix value less than 4. Within 30 cm (12 inches) of the top of the mineral soil material or directly underlying the mineral surface layer, whichever is shallower, there are 2 percent or more redoximorphic features that extend to either a depth of 50 cm (20 inches) below the top of the mineral soil material or to a depleted or gleyed matrix. The matrix chroma is 2 or less to a depth of 50 cm (20 inches) below the top of the mineral soil material.

Field Indicators Features

- Dynamic document –changes made as a result of new data, agreed to by the NEHSTC.
- Hierarchal key – starts with wettest soils (few morphologies) to the dry-end of hydric soils.
- Looks for a combination of soil morphologies at certain depths to determine if the soil meets the definition of a hydric soil.
- If a soil meets an indicator it can be considered a hydric soil. If no indicators are met it does NOT mean the soil is non-hydric (professional judgment).

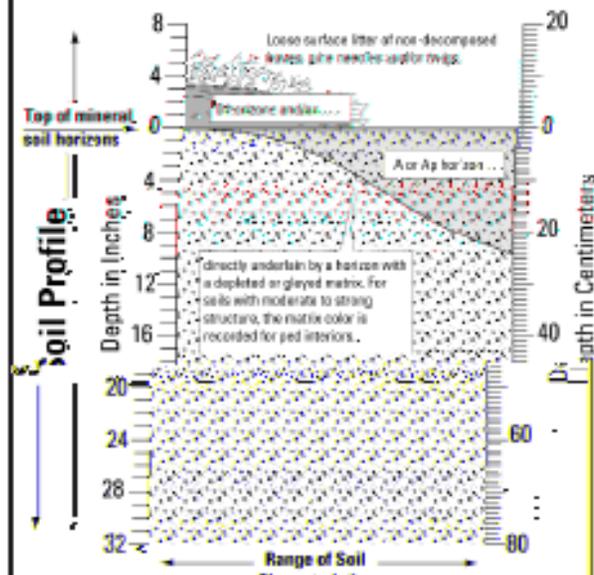
Field Indicators Features

Field Indicators for Identifying Hydric Soils in New England

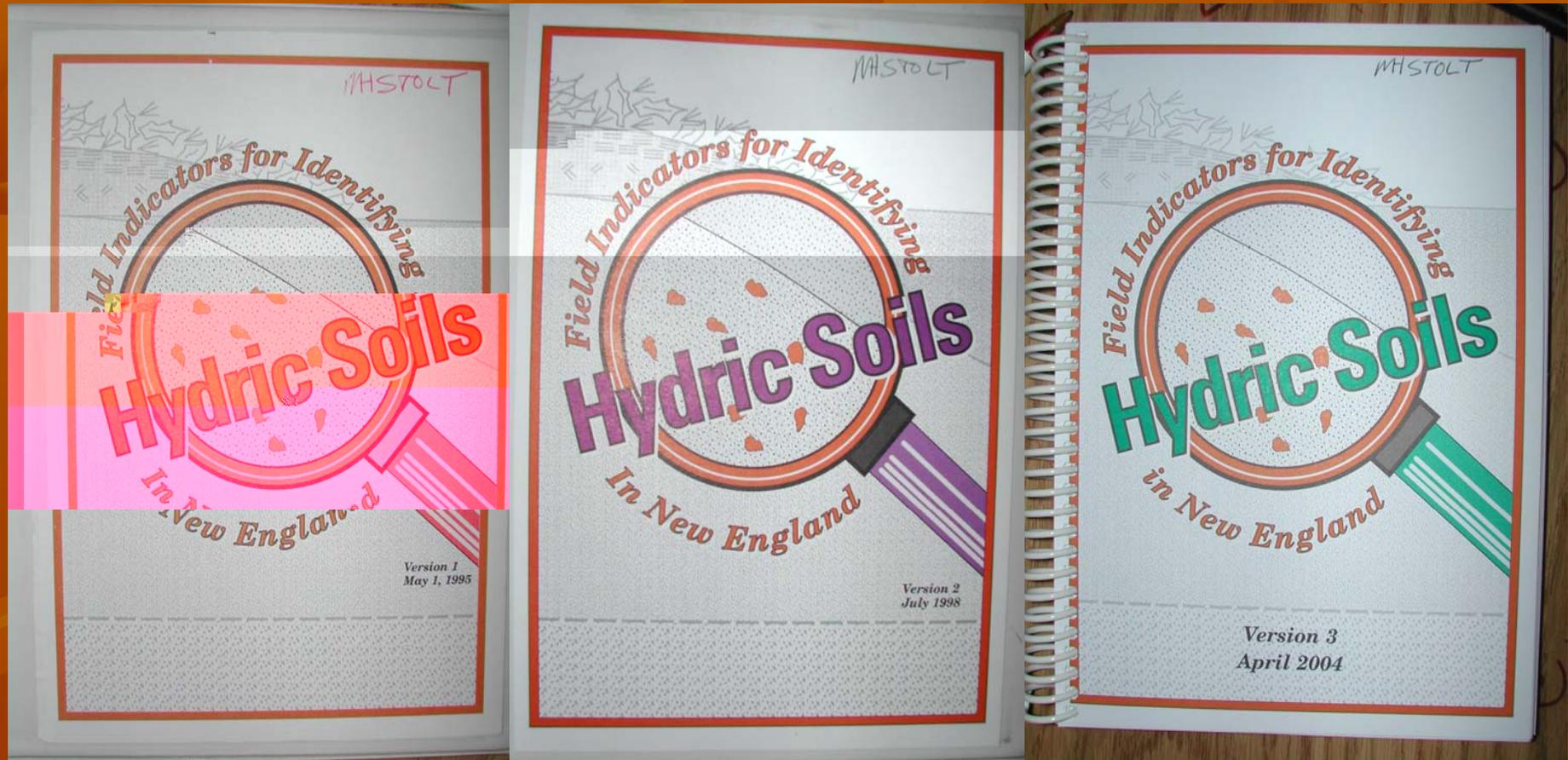
VI. DEPLETED OR GLEYED MATRIX. Within 10 inches of the *top of the mineral soil material* and directly underlying an *A or Ap horizon* (or, if they are not present, an *O horizon*), is a horizon with a *depleted or gleyed matrix* (for soils with moderate to strong structure, the matrix color is recorded for ped interiors) or

Field Indicators for Identifying Hydric Soils in New England

VI. Depleted or Gleyed Matrix



Three Versions 1995, 1998, and 2004



Data and Documentation

- Early tours were conducted throughout region to study the wetlands and soils.
- UMASS well study set up about 15 sites, wells sunk, veg. data recorded, Eh, etc. Sites were toured by committee and NHSTC.
- Each year the NEHSTC hosts a hydric soil tour to address a particular indicator (2002 – disturbed, 2003 – dark pm, 2004 – mesic spodic, 2005 – folists, 2006 spodic, etc.).

Data and Documentation

- 2007 – ACOE Region 1 purchased 15 soil temp loggers, 10 continuous water loggers, IRIS tubes and wells – deployed on study sites (red soils, dark, spodics, marine sediments, HTM) throughout region.
- Review of OSEDs, thesis studies, Reg IV sites, State regulators data, private sector delineation sites.

The Merger

- With regional supplement coming in to play and general agreement on the need to have one set of indicators, the NEHSTC focused efforts over past two years reviewing both guides, deciding how they differ, which of our indicators fit National, and which of ours needs to be added for our region (New England).

Questions

