Hydric Soils Basics for NH Landowners and Town Officials

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Hydric Soils

By definition hydric soils are formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions (lacking oxygen) in the upper part (Federal Register, 1994). Most hydric soils exhibit characteristic features that result from repeated periods of saturation or inundation that last more than a few days. Saturation or inundation, when combined with microbes in the soil, causes the depletion of oxygen. This lack of oxygen (anaerobiosis) promotes certain biogeochemical processes, such as the accumulation of organic matter and the reduction, translocation, or accumulation of iron and other reducible elements. These processes result in distinctive characteristics (morphologies) that persist in the soil during both wet and dry periods, making them particularly useful for identifying hydric soils in the field.

Hydric soils are identified by keying out soils with the use of the "Field Indicators of Hydric Soils in the United States, available at: http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_053171.pdf These Field Indicators identify soil characteristics which are documented to be strictly associated only with hydric soils. Field Indicators are an efficient on-site means to confirm the presence of hydric soil. The Field Indicators are designed to identify soils which meet the hydric soil definition without further data collection.

The concept of hydric soils includes soils developed under sufficiently wet conditions to support the growth and regeneration of vegetation adapted to grow in water or wet conditions (hydrophytic). Soils that are sufficiently wet because of artificial measures (e.g. damming) are included in the concept of hydric soils. Also, soils in which the hydrology has been artificially modified (e.g. drainage) are hydric if the soil, in an unaltered state, was hydric.

Hydric Soil Determination in New Hampshire

In the state of New Hampshire wetland determinations and delineations must be conducted by wetland scientists licensed by the NH Board of Natural Scientists. A list of certified individuals is available at http://www.nh.gov/jtboard/ns.htm .

NOTE: Soil mapping that identifies areas of hydric soils is available at your local NRCS office. Additionally, staff are available to provide information on hydric soil criteria and indicators, but are prohibited from making determinations or delineations except on specific agency projects.

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Wetland Basics for NH Landowners and Town Officials

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Wetlands

Jurisdictional Wetlands are defined by using the "Army Corps of Engineers Wetland Delineation Manual" available at, http://el.erdc.usace.army.mil/elpubs/pdf/wlman87.pdf and in NH using the "Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Northcentral and Northeast Region" which is available at http://el.erdc.usace.army.mil/elpubs/pdf/trel12-1.pdf. Three site characteristics must be observed to determine wetlands: vegetation, soil and hydrology. In the simplest terms, wetlands are those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and in normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs and similar areas. Wetlands have the following general diagnostic characteristics:

Wetland plants

Vegetation - The prevalent vegetation consists of plants that are typically adapted to areas having hydrologic and hydric soil conditions as described above. Plant species adapted to grow in water or wet conditions (hydrophytic), due to morphological, physiological, and/or reproductive adaptation(s), have the ability to grow, effectively compete, reproduce, and/or persist in anaerobic (lacking oxygen) soil conditions.

Hydric Soils

Soil - Soils at the site are hydric, or possess characteristics associated with reducing soil conditions as determined by the "Field Indicators of Hydric Soils in the United States" (as discussed in the Hydric Soils section of this fact sheet).

Hydrology - The presence of water in or above the soil surface. The area is inundated either permanently or periodically or the soil is saturated to the surface at some time during the growing season. Signs on the soil surface include but are not limited to:

- Water stained or silt covered leaves
- Saturated soils
- Water marks present on trees and shrubs
- Thin layers of sediment deposited on the soil surface
- Drift lines of organic debris such as leaf litter on tree and shrub stems and the ground surface

Water Stained leaves

Water marks on trees

Drift Lines

Saturated Soils

Wetland Determination in New Hampshire

In the state of New Hampshire wetland determinations and delineations must be conducted by wetland scientists licensed by the NH Board of Natural Scientists. A list of certified individuals is available at http://www.nh.gov/jtboard/ns.htm .

NOTE: USDA – NRCS staff are available to provide guidance and information on wetland criteria and indicators, but are prohibited from making determinations or delineations except on specific agency projects.

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