

WETLANDS PRIMER

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Joint presentation with Brentwood Planning Board and Conservation Commission.

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Definition of Wetlands

US Army Corp of Engineers

Wetlands are defined as those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands are transitional areas between open water and dry land and are often found along bays, lakes, rivers and streams. Some are drier than others and may have standing water or saturated soil conditions only during part of the year. Examples include bottomland forests, swamps, bogs, marshes, wet meadows and seasonal wet woods.

NH Department of Environmental Services (NHDES)

An area that, either through surface water or groundwater, is wet enough and wet for a long enough period of time, to support a predominance of vegetation that grows in saturated soil conditions. In order for an area to be deemed a wetland, all three (3) of the following must be present:

Hydric Soils – Soils that are saturated or flooded during the growing season sufficient to produce anaerobic conditions in the upper soil layers.

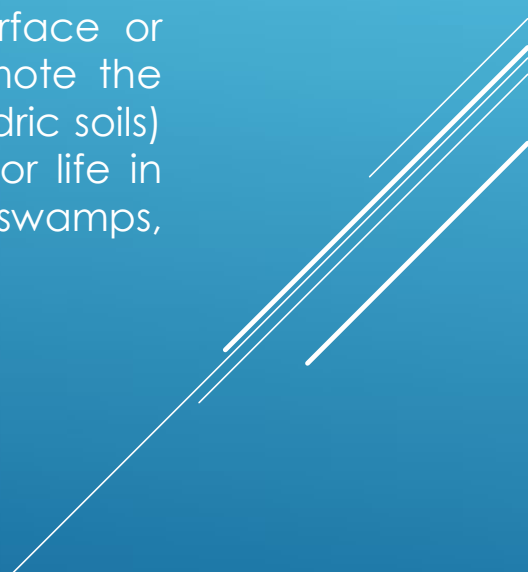
Hydrophytic Vegetation – Greater than 50% of the vegetation present is adapted for life in saturated soil conditions.

Hydrology – Evidence exists that demonstrates the soils in the area are inundated with water either permanently or periodically throughout the growing season.

Examples of wetlands include, but are not limited to: swamps, bogs, marshes, forested wetlands, wet meadows and vernal pools.

Town of Brentwood:


Wetlands are areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to promote the development of characteristic wetland soils (also known as hydric soils) and support a prevalence of vegetation typically adapted for life in saturated soil conditions. They include, but are not limited to, swamps, bogs, marshes, vernal pools, ponds and lakes.

A decorative graphic consisting of several parallel white lines of varying lengths and orientations, located in the bottom right corner of the slide. The lines are set against a dark blue background.

Wetland Functions

Flood-flow Alteration – The effectiveness of the wetland to reduce flood damage by containing and desynchronizing floodwaters for an extended period following heavy precipitation and runoff events. Wetlands that occur higher in a watershed reduce flooding of downstream waterbodies through ponding water and diffusing or diverting flow velocities. Wetlands that occur lower in the watershed may contain the ability to store high volumes of water through direct interactions with the local floodplain or contain large areas of porous surface soils with the ability to become heavily saturated and still maintain integrity during flood-flow events. If a wetland is situated in the riparian zone along a waterbody and contains dense vegetation, it can attenuate the severity of increased flow regimes by dissipating flow velocity during flooding events.


Groundwater Recharge/Discharge – The potential for a wetland to act as a source of groundwater recharge and/or discharge. Recharge describes the potential for the wetland to contribute water to an underlying aquifer. Discharge relates to the potential for the wetland to act as a source of groundwater transfer to the surface (i.e., springs and hillside seeps).



Sediment/Pollutant Retention – The ability to reduce or prevent the degradation of water quality. This function relates to the effectiveness of the wetland as a trap for sediments, toxicants, or pathogens based on its geomorphic position, connectivity, soil thickness, and other physical characteristics. The retention of sediments, toxicants, or pathogens that may be carried by surface water runoff within the watershed reduces or prevents the degradation of water quality and is a function shared by many wetland features.

Fish and Shellfish Habitat – The ability to contain or influence suitable habitats for fish and shellfish. For a wetland to contain fish and/or shellfish habitat, the wetland must be associated with a fish/shellfish-bearing water. Wetlands providing the fish and shellfish habitat are typically associated with perennial streams or large bodies of standing water. These waterbodies must contain appropriate levels of nutrient production, habitat complexity, and flow regimes to support the lifecycles of various fish and/or shellfish species.

Sediment/Shoreline Stabilization – The ability to effectively stabilize streambanks and shorelines against erosion.



Production (Nutrient) Export – The ability to produce food or usable products for all organisms, including humans. To perform this function, a wetland must contain a level of high productivity. Wetlands that exhibit this function have an abundance of wildlife habitat and are ecologically rich. Many trophic levels support a higher level of production within the system and, therefore, an increased level of production export.



Nutrient Removal/Retention/Transformation – The ability to prevent excess nutrients from entering aquifers or surface waters by trapping nutrients in runoff water from surrounding uplands or contiguous wetlands, and by processing these nutrients into other forms or trophic levels. Wetlands remove excess nutrients carried by sediments through absorbing them into soils with high organic matter or transforming these nutrients through nitrification and denitrification as a result of the alternating toxic and anoxic water conditions caused by wetland hydrology.

Wildlife Habitat – The effectiveness of the wetland to provide habitat for various types and populations of animals typically associated with wetlands and their periphery. Resident and migrating species are considered along with the potential for any state or federally listed species occurring within the target wetland. The presence of wildlife habitat can be inferred by looking at the characteristics of a wetland including the ecological community present, dominant vegetation, and surrounding habitat availability. Wetlands often support large invertebrate populations which provide a food source for birds, bats, and other wildlife. Inundation and open water found in some wetlands can provide aquatic breeding habitat for amphibians as well. Many plant species commonly found in wetlands may be used by birds and mammals as a food source.

Threatened or Endangered Species Habitat – The effectiveness of the wetland to specifically support threatened or endangered species.



Vernal pool: A body of water, typically seasonal, that provides essential breeding habitat for certain amphibians and invertebrates, does not support viable fish population, and meets the criteria established by the New Hampshire Fish and Game Department, Nongame and Endangered Wildlife Program, Identification and Documentation of Vernal Pools in New Hampshire, rev 2004. In accordance with the NH Code of Administrative Rules Env Wt-101.99, this does not include areas that contain these characteristics but are the result of on-going anthropogenic activities that are not intended to provide compensatory mitigation, including but not limited to: (1) Gravel pit operations in a pit that has been mined at least every other year; and (2) Logging and agricultural operations conducted in accordance with all applicable New Hampshire statutes and rules.

WETLAND PERMITS MOST OFTEN REQUIRED FOR DEVELOPMENT

Federal: US Army Corps of Engineers 404 permit

State: New Hampshire Department of Environmental Services Dredge and Fill Permit

Local: Town of Brentwood Conditional Use Permit

Although not an individual permit, the Town's Stormwater Management Ordinance establishes standards for treatment of stormwater for all non-residential development.

WETLANDS MAPPING RESOURCES

Natural Resources Conservation Service –Prepared county-wide for Rockingham County in 1984

US Army Corps of Engineers Wetlands Delineation Manual Technical Report Y-87-1 (1987, 2016)

High Intensity Soil Surveys Required by Brentwood since 1993

Site Specific Soils Mapping 2011

Town of Brentwood Prime wetlands Study and Mapping, West Environmental, Inc, 2007.

Wetlands Buffers

Barring unusual circumstances, construction in wetland areas is prohibited.

The Brentwood Zoning ordinance has a sliding scale for buffer distances to wetland resources. The State of NH requires no buffer to wetlands resources.

Septic Systems must be separated from delineated wetlands by 75 linear feet.

The Towns zoning ordinance allows certain activities to occur in the wetlands buffer areas either as a right or as part of a conditional use permit granted by the Planning Board.