GUIDANCE ON WETLANDS

1. DEFINITIONS – What is a Wetland?

Wetlands include those areas that are inundated or saturated by surface or groundwater at a frequency and duration to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted to life in saturated soil conditions.



- *Hydrophytic Plants*
- *Hydric Soils*
- *Hydrology*

2. TECHNICAL CRITERIA – Federal & State

Vegetation
- Prevalence indicated by 50% dominance measure (usually areal cover)
- Adaptations include buttressing, stooling, multiple trunks, inflated root cells

Soils
- Saturation typically creates a thick surface organic layer
- Subsurface often grayish, or with mottles that reflect oxidation/reduction of Fe

Hydrology
- Water at or near the surface for ≥12.5% of the growing season
- Usually two weeks or more



3. CLASSIFICATION – the Cowardin System

P = Palustrine, or a non-tidal freshwater wetland. It is one of 5 major systems:
Marine
Estuarine
Lacustrine
Riverine
Palustrine

FO = Forested, one of 5 vegetated cover types in the Palustrine system: (FO) Forested; (SS) Scrub-shrub; (EM) Emergent; (AB) Aquatic Bed; (ML) Moss-Lichen

P FO 1/4 E

E = Seasonally Flooded/Saturated, one of about 10 different water regime modifiers that describes hydrology

1 = Broad-leaved Deciduous (e.g. Red Maple)
4 = Needle-leaved Evergreen (e.g. Hemlock)
1 / 4 means that the deciduous trees are slightly more dominant than the conifers



4. WETLANDS FUNCTIONS & VALUES

All wetlands have functions that serve the surrounding ***ecosystem***. All of these **functions** contribute to the well-being of humans, therefore they are highly valued by society



The following list of functions and values represent the most commonly recognized ones associated with wetlands. Can you think of others that we have left out?

Wildlife Habitat

Groundwater Recharge/Discharge

Shoreline Anchoring

Visual / Aesthetic

Drinking Water Supply

Floodwater Storage

Education

Production Export

Nutrient & Toxicant Removal

Recreation

Sediment Trapping

Fish & Shellfish Support

5. WETLAND MAPPING & DELINEATION

How do I find a good wetlands map for my town?

Wetlands maps are easily available from various federal or state agencies. A good starting point is the National Wetlands Inventory (NWI), a branch of the U.S. Fish & Wildlife Service that is responsible for classifying and mapping all wetlands in the United States. There are over 200 quad sheets – equivalent in size to the USGS topographic quads – of nearly all areas of the state. These are available on-line at http://www.fws.gov/nwi/ or as hard copy maps (for a small copying fee) through the N.H. Office of Energy and Planning.

The second most-often used source for wetland maps on a local or regional scale is the Natural Resource Conservation Service or NRCS (formerly the Soil Conservation Service). They have the responsibility of maintaining and updating soil maps for every county in the United States, including the depiction of *hydric soils,* which are roughly equivalent to areas of wetland. These maps can be obtained through the Soil Data Mart at http://soildatamart.nrcs.usda.gov/.



Figure 1 1998 Aerial photo base map

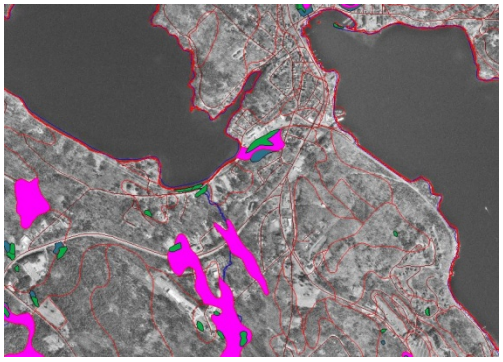


Figure 2 Aerial Photo with NRCS hydric soils ad and NWI wetlands data

How accurate are these maps?

Both of the above sources of wetlands information were largely derived from remote data sources – i.e. from high altitude aerial photographs. These were interpreted by mapping specialists using very large-scale maps. It is a stated fact by the agencies that publish these maps that there are certain levels of error in these maps, for instance, up to 3 - 5 acres of upland within a hydric soil map unit. As a general rule, NWI maps *underestimate* the actual amount of wetlands on the ground and NRCS hydric soil maps *overestimate* the amount of wetlands on the ground.

How can I improve the accuracy of these maps?

Perhaps the best (and least expensive) way to check the accuracy of the NWI and NRCS wetland maps is to have a mapping professional utilize existing, high altitude photography to re-interpret the location of wetlands on the ground. The advantages of doing this are 3-fold: 1) there are already several sources of high-altitude photography available for review; 2) the most recent aerial photography is likely much more up-to-date than that used for the initial

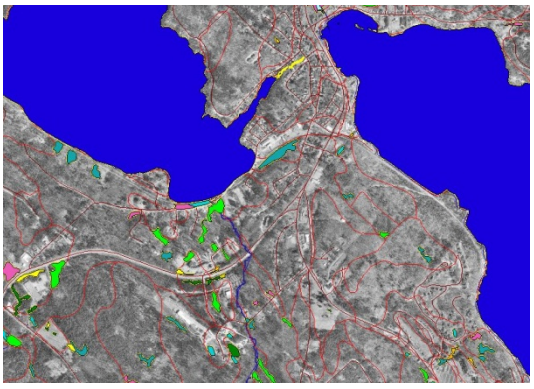


Figure 3 Aerial photo interpretation map - final

mapping by the NWI or NRCS; and 3) by using a combination of black-and-white, color infrared and/or stereoscopic (3-D) images of the ground, much greater resolution and accuracy can be effected. There are several sources of high-altitude aerial photographs for download and review – perhaps the most complete source is the New Hampshire Geographically Referenced Analysis and Information Transfer System (NH GRANIT), which is located on-line at http://www.granit.sr.unh.edu/cgi-bin/load_file?PATH=/about.



Wetland Delineation

The best way to derive an accurate map for a given area is to have a certified wetlands professional conduct an on-the-ground wetland delineation of the area in question. There are over 200 Certified Wetland Scientists (CWS) in the state of New Hampshire and their contact information is provided by the certifying body, the N.H. Joint Board of Natural Scientists at http://www.nh.gov/jtboard/ns.htm. Wetland delineators are required to follow state and federal wetland guidelines as defined above, yet map standards depend upon the intended use of the map. For small-scale development projects involving wetlands, the state mapping standards of +/- 10 feet must be adhered to, that is, the wetland line depicted on any map sheet must be within 10 feet of the actual line of the ground. For larger scale mapping projects, such as a town-wide map, the map standards can be relaxed *as long as they are clearly stated on the map*.



Wetland delineations are never 100% accurate! Owing to varying environmental conditions over time, as well as the professional judgment of the delineator, wetland lines as flagged in the field may vary. [Note that it is within the powers of the Planning Board to contract an independent review of any wetland delineation performed by a developer.] While this may cause some consternation among town officials and concerned citizens, the important thing to note is that wetland functions do not stop at the wetland line! Whenever a development project is being planned that impacts wetlands, it is essential for all reviewers of the proposed project to consider what essential functions – those invaluable services that promote the public good – are being lost or otherwise irreparably impaired. Only then can adequate mitigation for wetland impacts be crafted and adhered to. A comprehensive set of wetland regulations at the federal, state, and local level typically offer guidelines for understanding and minimizing the effects of human impact on wetland functions and values.

6. WETLAND REGULATIONS



A. FEDERAL

Federal regulations arise from several laws that have been passed over the past 110 years. The 1899 Rivers and Harbors Act established the United States governmental authority over navigable rivers and interstate commerce on them, and created the U.S. Army Corps of Engineers as the lead agency to oversee such activities. Since then, several laws have modified the jurisdiction over "waters of the United States," but no act has had such a sweeping effect as the Federal Water Pollution Control Act of 1974 and its subsequent amendment in 1977 known as the Clean Water Act.

These laws defined wetlands and included them under the regulation of surface waters, as well as certain lands that are adjacent. They provided a permitting mechanism for filling and dredging waterways and wetlands, which included oversight of permit approvals by the U.S. Environmental Protection Agency, and classification and mapping authority of the U.S. Fish & Wildlife Service. Agricultural impacts to wetlands and surface waters were to be administered by the Soil Conservation Service (now Natural Resource Conservation Service), as set out by subsequent legislation such as the Food and Security Act of 1985.

For Further Information: http://www.nae.usace.army.mil/ ; http://www.epa.gov/owow/wetlands

B. STATE


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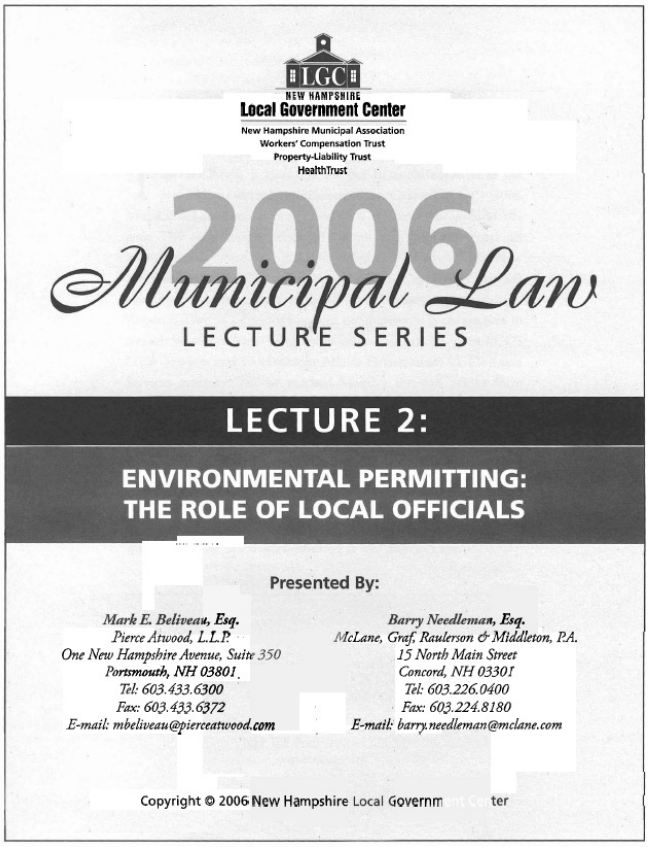
CHECKLIST FOR PREPARING A
STANDARD DREDGE & FILL APPLICATION

ALL INFORMATION MUST BE SUBMITTED FOR THE APPLICATION TO BE PROCESSED

The state of New Hampshire adheres to the regulatory authority of the United States Government, yet has actually protected wetlands on its own since 1969. Under a cooperative agreement with the U.S. Army Corps of Engineers known as the Statewide Programmatic General Permit or SPGP, the state handles all permitting activity for impacts to wetlands yet shares permit applications for larger projects with the Army Corps for their review and consideration. Unless the project is a large one (generally > 1 acre of impact), permits need only be applied for to the state Wetlands Bureau. The jurisdictional authority of the state of New Hampshire is slightly different, however, since it includes all lands within 100 feet of the highest observable tide line *and* intermittent streams. Statewide jurisdiction also includes certain isolated wetlands that, based on a recent Supreme Court decision, currently fall outside of federal regulatory authority. The state administers their wetlands program through the Department of Environmental Services Wetlands Bureau, with permitting approval oversight by the governor-appointed Wetlands Council.

For Further Information: http://www.des.state.nh.us/wetlands/ ; http://www2.des.state.nh.us/OneStop/

C. LOCAL


NEW HAMPSHIRE
Local Government Center
New Hampshire Municipal Association
Workers' Compensation Trust
Property-Liability Trust
HealthTrust

2006 Municipal Law
LECTURE SERIES

LECTURE 2:

ENVIRONMENTAL PERMITTING:
THE ROLE OF LOCAL OFFICIALS

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Local wetlands authority is usually derived from a local ordinance or zoning provision that regulates projects that impact wetlands within the municipal boundary. There are at least 65 towns in the state that have some type of local restrictions that address wetland impacts. Most of these are stand-alone ordinances that were passed by a majority of town voters as a part of an annual warrant article. In the early 1980's there was a considerable effort on behalf of the state and regional planning agencies to get local wetland ordinances passed and adopted in New Hampshire. Many of these earlier ordinances look the same and have "boiler-plate" provisions that include a purpose section, a definitions section, a permitted uses section, a section on special exceptions, and a special provisions section that addresses specific setbacks. Utilizing the fairly well-known section A:15 of RSA 482-A, many towns have added prime wetland language to their original wetland ordinance. While there are many different versions of these sections, as well as a number of unique special provisions dealing with subdivisions and site plan review, it is important to note that since 1980, a large number of court cases have upheld the rights of municipalities to regulate, protect and conserve wetlands at a more rigorous standard than either the state or the federal government.

For Further Information: See above document inset, available through the Local Government Center at http://www.nhlgc.org/
http://www.nh.gov/government/laws.html ; http://www.nh.gov/htdig/ ;
http://www.gencourt.state.nh.us/ie/billstatus/billstatuspwr.asp ;
http://des.state.nh.us/wetlands/Guidebook/primewet.htm