

# Method for Inventorying and Evaluating Freshwater Wetlands In New Hampshire

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**NH  
METHOD**

# Method for Inventorying and Evaluating Freshwater Wetlands In New Hampshire (NH Method)

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# Updates to the NH Method

The *Method for the Comparative Evaluation of Nontidal Wetlands in New Hampshire* (NH Method), co-authored by Alan Ammann and Amanda Lindley Stone, was originally published in March, 1991. It was adapted from the *Method for the Evaluation of Inland Wetlands in Connecticut*, published in 1986 by the Connecticut Department of Environmental Protection and authored by Alan Ammann and others. Since 1991, the NH Method has been widely used by New Hampshire communities and natural resources professionals. The NH Method's ease of use, its educational value, and the general objectivity of the resulting function evaluations have contributed to its popularity. Since 1991, the NH DES Wetlands Bureau has recommended using the NH Method for evaluating wetlands, especially for the purpose of Prime Wetlands designation.

The first update/revision of the NH Method was completed in 2011, twenty years after its original publication. The 2011 revision and subsequent updates in 2012, 2013 and 2015 have incorporated new and current research, technologies, data and input from users. The [NH Wetlands Mapper](#), an online mapping program tailored for the layperson was developed in 2013 to accompany the NH Method.

## Acknowledgements

The 2011 Revisions to the NH Method were conducted by the NH Method Work Group, which included representatives from the state and private organizations listed below. Many thanks are due to this group for the considerable hours they spent reviewing, revising and field testing the updated NH Method. Their contributions of expertise and experience were invaluable.

### NH Method Work Group

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\*The four primary co-authors for the 2011 revision have been responsible for the ongoing revisions and updates to the NH Method.

## I. INTRODUCTION

Wetlands are areas on the landscape with soils that drain so slowly that they usually have water at or near the surface for all or part of the year. These wetland, or “hydric”, soils have low oxygen levels and support plants adapted to living in such conditions. Wetlands are usually transitional areas between drier upland soils and open water areas such as streams, rivers, ponds and lakes. Wetlands include forested and shrub swamps, marshes, peatlands, wet meadows, and bordering vegetated shallows of streams, rivers, lakes and ponds.

Wetlands are an important part of the hydrologic system, and play a key role in maintaining drinking water supplies, treating stormwater, storing floodwaters and preventing downstream property damage. Wetlands provide a high degree of biodiversity in the landscape, maintaining healthy and diverse aquatic and wetland-dependent wildlife populations. They provide scenic vistas, as well as hiking, canoeing, fishing and hunting opportunities.

**Wetland evaluation** is the process of determining the values of a wetland based on an assessment of the functions it performs. The NH Method provides a wetland evaluation method for use by several **audiences**:

- Public officials and community volunteers,
- Professionals who have some familiarity with wetlands, but who are not necessarily wetland specialists, and
- Professional wetland scientists

The NH Method is intended to be used for the following **purposes**:

1. Educating members of conservation commissions, other town boards, non-wetland professionals and others about wetland functions and values.
2. Evaluating one or more wetlands in a study area, such as a town or a watershed.
3. Conducting a comparative evaluation of wetlands in order to designate Prime Wetlands (RSA 482-A:15)
4. Collecting baseline information about the wetlands in a study area for the purposes of conservation.
5. Creating a database of wetland functions and values
6. Supporting local planning and decision-making.

Because development and growth often require towns to prioritize natural resources for protection, it is important that they have available a practical means of inventorying and evaluating their wetlands. The *Method for Inventorying and Evaluating Freshwater Wetlands in New Hampshire* (NH Method) was developed for that purpose.

## Definitions

The **Definition of Wetlands** in the NH Method is the same as the State of New Hampshire (<http://www.gencourt.state.nh.us/rsa/html/L/482-A/482-A-2.htm>): *[A wetland is] “an area that is inundated or saturated by surface water or ground water at a frequency and duration sufficient to support, and that under normal conditions does support, a prevalence of vegetation typically adapted for life in saturated soil conditions.”*

### **Wetland Inventory:**

Identifies and maps all wetlands in a study area using available map and aerial photo resources (such as the National Wetland Inventory maps, satellite imagery, and LIDAR. NRCS Soil Maps, color, black & white or infrared aerial photos).

### **Wetland Functions:**

Represent the practical, measurable values of wetlands. Those attributes of wetlands that contribute to their geographical, biological and sociological values.

### **Wetland Evaluation:**

The process of determining the values of a wetland based on an assessment of the functions it performs.

### **Wetland Delineation:**

Not to be confused with wetland evaluation, wetland delineation determines the precise location of the wetland/upland boundary on the ground (and ultimately on a map) based on field indicators, such as vegetation, soils, and hydrology. Delineation requires specialized knowledge about wetlands and should be done by a Certified Wetland Scientist in NH.

### **Hydric Soils:**

These are soils that formed under conditions of saturation, flooding or ponding long enough during the growing season to develop anaerobic conditions in the upper part. These soils characterize wetland areas:

**Very Poorly Drained Soils:** Water drains from the soil so slowly that free water remains at or near the surface during the entire year, including most or all of the growing season.

**Poorly Drained Soils:** Water drains from these soils somewhat more quickly than Very Poorly Drained Soils, hence, they are often dry at the surface during portions of the growing season. These soils are not as wet as Very Poorly Drained Soils.

While the NH Method is designed to be relatively simple to use, its basis is scientifically defensible. It provides a consistent standard for evaluating wetlands across the state.

The NH Method is designed for use by community volunteers and natural resources professionals. While a number of communities have conducted evaluations using volunteers, others have chosen to hire consultants to conduct wetland evaluation projects. Training workshops in the use of the NH Method for all audiences are advertised on the NH Method Website. Even if a community decides to hire a professional to conduct the evaluation, it is helpful for municipal board members to attend a training session so they have an understanding of how the NH Method works and how to use the results.

### Appropriate Uses of the NH Method

1. The NH Method is a valuable educational tool for increasing understanding about the functions and values of wetlands.
2. In New Hampshire, most land use decisions are made at the local level. Evaluating wetlands for different functions allows a town to tailor wetland protection for those values it views as most important. For example, a town may wish to protect wetlands with high scores for flood storage, or large wetland complexes that provide important wildlife habitat. (See sidebar for descriptions of wetland protection methods.)
3. The NH Method can be used to evaluate a single wetland or multiple wetlands:
  - **Multiple Wetlands:** Evaluation of a number of wetlands in a study area (e.g. prime wetlands) comprises a comparative evaluation. This is where the scores for a particular function, such as Ecological Integrity, are reviewed for all wetlands in the study area relative to one another. This helps to identify higher scoring wetlands for that function or for multiple functions.
  - **Single Wetlands:** The user may wish to evaluate a single wetland to get descriptive information about its physical characteristics and functions. This may serve the purpose of generating baseline information prior to wetland restoration, enhancement, or preservation. Note that single wetland evaluation using the NH Method is not a substitute for more detailed evaluation of specific functions. When communicating the results of a single wetland evaluation, be sure to inform local decision makers that the level of information provided is general rather than detailed.
4. Although the NH Method is not designed for impact analysis, the information collected during the evaluation may provide a useful framework for a more detailed and thorough assessment of proposed wetland impacts. Each of the NH Method functions will likely be affected by a wetland impact. For

### Wetland Protection Mechanisms

- **Zoning and Subdivision Regulations** – Wetlands can be protected through zoning ordinances by implementing a Wetlands Conservation Overlay District. A model ordinance for this is provided in the 2008 NHDES publication [Innovative Land Use Planning Techniques](#). Setback requirements can be incorporated into subdivision regulations.
- **Comments to the New Hampshire Wetlands Bureau** – Although wetland permits are issued at the state level, there is opportunity for local input into land use decisions affecting wetlands. Municipal conservation commissions have the legal authority to comment on permit applications on behalf of the town. Individuals may also comment on these applications.
- **Comments to the U.S. Army Corps of Engineers** – Virtually all major wetland alterations require a Federal permit in addition to a state permit. The town and individual citizens can comment during the Federal permitting process.
- **Prime Wetland Designation** – Under the New Hampshire statute (<http://www.gencourt.state.nh.us/rsa/html/NHTOC/NHTOC-L-482-A.htm>) for protecting wetlands from “despoliation and unregulated alteration”, municipalities are able to designate some of their high value wetlands as “Prime Wetlands” ([http://des.nh.gov/organization/divisions/water/wetlands/prime\\_wetlands.htm](http://des.nh.gov/organization/divisions/water/wetlands/prime_wetlands.htm)). Prime Wetlands are given special consideration by the Wetlands Bureau in permit application reviews. Appendix A of the NH Method provides web links for more information on Prime Wetlands.
- **Acquisition of wetlands** – Wetlands and their buffers can be acquired either through the purchase of development rights, gifts, or by securing conservation easements on lands encompassing wetlands.

example, an impact involving the placement of a culvert and roadway fill will likely alter how water flows through the wetland, as well as what types of wildlife can live there. By using the list of functions as a framework for more in-depth studies - i.e. ones that *define* the change in hydrology or wildlife species, a wetland scientist can arrive at a reasonable assessment of the proposed alteration. The user can look at the results from the NH Method on a single wetland and use those together with professional judgment to determine what other information may be needed for the actual impact assessment.

5. Results from wetland evaluations using the NH Method may be used to identify potential wetland restoration sites. Wetlands scoring low for Ecological Integrity because of human disturbance might benefit from restoration to increase the capacity of the wetland to perform this function.

## Limitations of the NH Method

1. The NH Method is designed to evaluate functions and values. It is not intended to be used for the delineation of jurisdictional wetland boundaries.
2. The NH Method is not designed for use as a specific method for impact analysis. It needs to be coupled with best professional judgment and other methods of impact analysis, in order to yield detailed, site-specific information.
3. Low scores on one or more wetland functions should not be used to justify eliminating certain wetlands. Low scores may result from impacts that are temporary or will diminish over time. Low scores may also indicate opportunities for restoration. Low scores should be qualified based on the level of comparative information provided at the time of the evaluation.
4. The NH Method is not a substitute for more detailed site-specific studies. Where these studies are required, e.g. a detailed wildlife study or water quality assessment or wetland boundary delineation, other site specific methods should be used.
5. While small wetlands may be less biologically diverse and may have limited value for several functions (meaning that they may score lower), they may stand out for a certain special value (e.g. a rare species). These are typically captured under the Noteworthiness function. Noteworthiness ensures that important wetlands, which might rank low because of size or other factors, get equal consideration.
6. The NH Method is not well suited for evaluating exceptionally large riverine or lacustrine systems such as the Connecticut River or Lake Winnepesaukee. Bordering vegetated (fringe) wetlands on large bodies of water are best evaluated as discrete units that may be influenced by localized watersheds, embayments, coves or shorelines. See **Section 2D** for guidance on how to break up large wetland systems into smaller, more manageable evaluation units. Note that very large wetland systems can be broken in to smaller units for purposes of evaluation, and then recombined to present the final results
7. The NH Method provides a wetland evaluation procedure to rank and compare wetlands on a municipality-wide basis. When legal proceedings require detailed information about individual wetlands, additional detailed field data will be needed to supplement NH Method data. NH Method data alone would not be sufficient in this instance.
8. The NH Method uses a numerical score for each evaluated wetland function. It is important to also interpret the results based on the answers to the questions and not rely solely on numerical scores.
9. In the NH Method the Scores for each function **are not additive**. There is no single wetland score. Each wetland receives a single score for each of 12 functions. Adding the Function Scores to produce a single wetland score is a misuse of the NH Method.