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Wetlands Protection

New Hampshire Office of Energy and Planning

Historically, wetlands were viewed as wastelands, too wet to plant or build on. Many wetlands were either drained or used as dumping grounds. Now it is understood that wetlands provide important environmental benefits.

Wetlands and adjacent uplands provide essential habitat for wildlife, including food, cover, and travel if connected to other habitat. Protection Functions are self sustaining properties of small wetlands and adjacent uplands is often important for achieving of a wetland ecosystem that exist in this connectivity. Wetlands support almost two-thirds of New Hampshire's wildlife in greatest need of conservation (N.H. Fish and Game Department, 2005). Some small seasonal surface waters known as vernal pools – temporarily flooded depressions that lack breeding fish populations – are the breeding habitat for amphibian species that live in upland areas most of the year. Larger wildlife, such as moose, depend on wetlands for their food source as well. In New Hampshire, hunting generates $71 million in revenue and provides more than 1,400 jobs (N.H. Fish and Game, 2005).

Wetlands protect water quality in our lakes and streams. They remove excess nitrogen and trap sediment and associated contaminants, such as metals and phosphorus. Wetlands located along waterways and shorelines buffer the natural wind and waves.

Wetlands help to reduce floods by acting like a sponge, slowing runoff from upland areas and releasing water slowly, reducing peak flood flows downstream. Conversely, wetlands help keep streams flowing in dry periods, because groundwater is often discharged into wetlands, and they continue to release the water even without additional rain. This is important for adequate water supply and wildlife habitat.

Estuarine areas and coastal marshes, where salt water and fresh water mix, are among the most ecologically productive areas in the world. Tidal wetlands are nurseries for finfish and shellfish. In tidal areas, retention of sediment is especially important to minimize the deposition of fine sand or silt in shellfish beds. Tidal wetlands serve as spawning and nursery areas for fish, including those that are commercially harvested.

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Buffer areas, the upland areas adjacent to wetlands, are essential to maintenance and protection of wetland functions and values. These buffer areas protect wetlands from degradation by:

- Stabilizing soil and preventing erosion.
- Filtering suspended solids, nutrients, and harmful or toxic substances.
- Moderating impacts of stormwater runoff.
- Moderating system microclimate.
- Providing habitat and protecting wetland wildlife habitat from adverse impacts.
- Maintaining and enhancing habitat diversity and/or integrity.
- Supporting and protecting wetland plant and animal species and biotic communities.
- Reducing disturbances to wetland resources caused by intrusion of humans and domestic animals.

The size of buffers needed varies by the function and the site-specific conditions.

The ability of vegetated wetland buffers to provide water quality protection increases with the size of the buffer. At 100 feet, most of the contaminants and nutrients have been removed (Chase *et al*, 1997). Protection of buffers will reduce wetland impacts by moderating the effects of stormwater runoff, including stabilizing soil to prevent erosion; filtering suspended solids, nutrients, and harmful or toxic substances; and moderating water level fluctuations.

However, wetland buffers to support wildlife may need to be much larger. Buffers also provide essential habitat for wetland-associated species for use in feeding, roosting, breeding and rearing of young, and cover for safety, mobility, and thermal protection.

Finally, buffers reduce the adverse impacts of human disturbance on wetland habitats by blocking noise and glare; reducing sedimentation and nutrient input; reducing direct human disturbance from dumped debris, cut vegetation, and trampling; and providing visual separation.

State jurisdiction of wetlands is found in RSA 482A and NH Department of Environmental Services administrative rules EnvWt 100800. Almost all activities that disturb the soils in a jurisdictional area, regardless of size or scale, in or on the banks of a surface water body or in a wetland require a permit from the state. Projects are classified according to their potential environmental impact – as minimum impact, minor impact, and major impact. There are a variety of ways by which projects are classified, including area of impact. Wetlands impacts less than 3,000 square feet may be minimum impact, from 3,000 to 20,000 square feet may be minor impact; and impacts greater than 20,000 square feet, any activity in or within 100 feet of prime wetlands, tidal wetlands, sand dunes, bogs, or natural exemplary communities, or disturbance of more than 200 feet of shoreline, are classified as major impacts. The classification of impact determines the amount of information and environmental analysis required and the commensurate review of an application.

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Protection of wetlands and adjacent uplands on a local level can provide additional oversight for proposed activities in wetlands and establish buffers that maintain the functions and values of wetlands. Local regulation of wetlands can:

- Review potential impacts to smaller wetlands more thoroughly.
- Prevent the cumulative impacts associated with a collection of small projects.
- Reflect the interests of the community, e.g. to prevent costly water supply impacts or increased flooding.
- Protect the functions and values of the wetland ecosystem by protecting buffers around the wetlands.
- Provide local inspection and enforcement.

Wetlands occur in every community in New Hampshire. Communities that want more protection for wetlands than is provided through state and federal regulations, including protection of wetland buffers, need to incorporate local wetland protection requirements into the zoning ordinance. Protection of wetlands and adjacent uplands is best achieved with an overlay district so that the underlying zoning is still in effect and these resources have an additional layer of protection.

Zoning ordinance provisions are just one piece of what is necessary to protect the functions and values associated with wetland ecosystems. Vegetated buffers may not remove all pollutants and can not address large volumes of stormwater runoff. In fact, large peak flows may result in sediments and other pollutants that were previously trapped in the vegetated buffer to be carried into the wetland. For the wetland ecosystem to truly be protected from pollutants and extreme fluctuations in water levels, communities also need to address the issue of stormwater management. Stormwater management and erosion and sedimentation control regulations ensure that stormwater runoff from roads and other developed areas is minimized and also receives some treatment before reaching areas such as wetlands

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EXAMPLES AND OUTCOMES

According to the 2007 survey by the NH Office of Energy and Planning (OEP) (OEP), 111 New Hampshire communities currently regulate development in wetlands. The survey information posted on the OEP website showed that at least 62 of these communities also regulate development adjacent to the wetlands. The approach to the buffer area varies a great deal among communities. Some communities have incorporated the 100-foot buffer recommended in Buffers for Wetlands and Surface Waters (Chase et al., 1997) as the effective distance for most water quality issues. Other communities regulate the activities in a buffer zone ranging from 25 feet to 125 feet to ensure that the functions and values of the wetland are protected. However, many communities, while requiring that buildings be set back 50 to 100 feet from the wetland, allow unregulated removal of vegetation and other potentially harmful activities in the buffer zone.

Lyme is an example of a community that has regulated activities adjacent to the wetland for many years. In a 100-foot buffer, only activities not involving structures or alteration of the land surface, such as forestry, agriculture, conservation and passive recreation, are permitted uses.

Several communities, including Auburn, Bow, Rochester, Loudon and Windham, specifically address vernal pools in their zoning ordinances as well.