

Commission looks at wetlands

The early people of Concord, the Musketaquid, valued rivers and wetlands for their food production, naming the confluence of the Assabet and Sudbury rivers the "grass ground rivers" or "River of Meadows." Most of us are familiar with the seasonally flooded red maple swamp, which is one of our most common wetland, and the cattail marsh. Other wetlands may not be so obvious — some wetlands appear dry most of the year, while other areas that appear to be wet during spring and fall may not meet the scientific wetland definition. Did you know that Concord doesn't have a local wetlands bylaw?

More than half the communities in Massachusetts have passed a local wetlands bylaw to supplement the state Wetlands Protection Act. Following up on goals identified in the 2004 Open Space and Recreation Plan and the 2005 Comprehensive Long Range Plan, the Natural Resources Commission plans to bring a wetlands bylaw to the floor of Town Meeting in 2009.

Until the 1970s, wetland management was driven by the mistaken belief that wetlands were wastelands, suitable only for filling or draining. This philosophy led to more than half the total wetlands in the lower 48 states being destroyed. When scientific evidence began to identify the many benefits provided by wetland ecosystems, the federal government passed the Clean Water Act in 1972.

In that same year, Massachusetts was the first state in the nation to pass a state Wetlands Protection Act (WPA). Since that time, many communities have passed a local wet-

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lands bylaw to further protect wetlands and the free public benefits they provide.

Wetlands are complex ecological systems that are strongly influenced by a variable water table. Some wetlands are full of water year round, while others only hold water during high water events. Wetlands have scientific and regulatory definitions, and to some degree the two overlap. From a scientific standpoint, wetlands are those areas that are flooded for at least two weeks during the growing season. In Massachusetts wetlands are defined by three parameters: Hydric soils, a predominance of water-tolerant plants, and hydrology (or water saturation, which drives the soil development and excludes only plants that can tolerate having "wet feet").

The regulatory definitions of wetland resource areas in Massachusetts encompass most scientifically established wetlands — with notable exceptions: vernal pools are ephemeral pools that may only hold water in the spring, but provide a critical component of the life cycle of many amphibians and some reptiles and invertebrates. Under the state WPA, vernal pools are only protected if they are large enough, and for many of our obligate vernal pool species, which can include many rare species, bigger isn't necessarily better.

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Wetlands provide an array of free public benefits. During storms, the peak flows from stormwater runoff are usually the cause of the most severe damage from flooding. Wetlands, especially riverine systems, provide hugely important flood control by storing rainwater and releasing it slowly, acting essentially as sponges.

Wetlands filter pollutants such as chemicals, excess nutrients, salts and metals, and keep them from entering surface and groundwater supplies through a variety of biological and chemical processes. Concord's drinking water comes from Nagog Pond in Acton and six groundwater wells, and protecting wetlands ensures clean

drinking water for generations to come. A vegetated buffer to our ponds and rivers protects them from excess nutrients, allowing more opportunities for boating and swimming.

Wetlands offer an astonishing amount of food, shelter and breeding habitat for fish and wildlife; they are comparable to rain forests and coral reefs in their productivity and the diversity of species they support. Otter, great blue heron, most turtles, and many other animals rely on wetlands. Overhanging trees along our three rivers and many streams provide shade and cover for fish, and also provide food when insects drop into the river. Wetlands are also critical for many rare species in Concord such as the Blanding's turtle and

blue-spotted salamander.

A tangible benefit of wetlands that is difficult to quantify is the aesthetic and educational value of wetlands. Wetlands are marvelously interesting ecological systems, providing important areas for wildlife study. Many people enjoy being out in wetlands to see nature up close, such as amphibians migrating to vernal pools in the spring, or watching great blue herons fish along the rivers and feed their young in rookeries. Wetlands also offer a great deal of information about our cultural heritage; middens and other features are often directly related to wetlands.

Commercially, wetlands provide an essential link in the life cycle of 75 percent of the fish

and shellfish harvested in the United States and up to 90 percent of the recreational catch. Many industries, in addition to the fishing industry, are dependent on wetlands.

Stay tuned for more on the proposed wetland bylaw. The commission will be holding four public meetings (check the Journal calendar for dates), and will present their goals to local boards and committees for input and feedback. We look forward to hearing your thoughts on how to make it the best bylaw for Concord. Call the Division of Natural Resources at 978-318-3285 for more information.

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