Recommendation

Issue: Should Springfield broaden protection of its wetlands --- from 10,000 square feet to 7,000 square feet or even 3,000 square feet?

Overview: Over time our knowledge of the functions and values of wetlands has increased, raising our awareness of the importance of protection for smaller wetlands once considered useless. Adapting our ordinance as knowledge evolves is critical to preserving our flora, fauna and our community for future residents. Wetlands and their buffers provide important benefits such as:

- Offering recreational opportunities such as kayaking and canoeing
- Providing scenic enjoyment and wildlife viewing
- Preserving the rural character of Springfield
- Maintaining the quality of our drinking water by filtering suspended solids, nutrients and harmful or toxic substances
- Protecting lakes, streams, ponds and aquifers by removing excess nitrogen, trapping sediments and other contaminants, stabilizing soil and reducing erosion
- Reducing flooding – they act like a sponge, slowing runoff and slowly releasing it
- Maintaining and enhancing habitat diversity and/or integrity
- Providing essential habitat for wildlife, including food, cover and travel corridors
- Supporting and protecting wetland plant and animal species and biotic communities

Recommendation: Change the size of jurisdictional wetlands from 10,000 square feet to 7,000 square feet or less.

Reasoning:

- NH Department of Environmental Services permitting for jurisdictional wetlands applies to those greater than 3,000 square feet.
- The Army Corps of Engineers Nationwide Permit Program for jurisdictional wetlands applies to those greater than 1/10 of an acre – 4,356 square feet.
- Over 80 percent of wildlife are either directly dependent on wetland and riparian ecosystems, or use them more frequently than other habitats. Since wetland and riparian areas cover only 4 percent of the region yet are critical for so many species, the loss of a small area can have a dramatic effect on local wildlife populations.[1]
- Wetland size has been used as one of the primary criteria for assigning protected status to wetlands in the United States, with greater protection given to larger wetlands. Increased understanding of the function served by small wetlands has led to concern that size may not be a suitable criterion upon which to make regulatory decisions. For certain species, small

[1] Gov't of British Columbia. Habitat Atlas for Wildlife at Risk in Riparian and Wetlands Ecosystems

isolated wetlands are critical habitats, and species strongly associated with these wetlands may not persist in landscapes in which the loss of these wetlands is significant. Where small wetlands are common in the landscape, loss of wetlands below existing protection size classes would result in increased distances between wetlands, potentially disrupting dispersal and consequent rescue necessary for functioning metapopulations. Analyses conducted on wetlands in Maine and New York suggest that losses of small wetlands are likely to lead to increased isolation of remaining wetlands, thereby increasing extinction probabilities of remaining amphibian populations.[2]

- Isolated wetlands serve the same important functions as other wetlands and also a number of unique functions, most specifically related to their small size. Their loss will significantly contribute to net loss of wetlands, will aggravate flooding, further impair water quality and result in reduced biodiversity.[3]
- If conservation of wetland biodiversity is a goal of wetland protection programs, regulations used in nationwide wetlands permitting should be redesigned accordingly.[4]
- Relative gains in wetland protection are not constant but rather increase markedly as protection thresholds include smaller size classes of wetlands. [5]
- Wetland size does not necessarily determine the value of a given wetland for wildlife and overall biodiversity. e.g., wetland size and vegetation structure are poor indicators of amphibian richness. [6]
- The importance of invertebrates in wetlands is sometimes overlooked. Many insects are dependent on wetlands, and serve as a vital food source for other animals, both in their larval stages and as adults (e.g., caddis flies, mayflies and dragonflies spend their whole life cycles in and around wetlands. Butterflies congregate around wet soil to drink and as part of their nuptial behavior. Pollinators such as bees require free water for drinking. Mosquitoes and midges provide a vital food source both in their larval and adult (flying) stages to a variety of birds and bats. [7]
- Wetlands protection and regulation are biased against small isolated wetlands. Why does this bias exist? Too often, decision makers assume that a small wetland is unimportant or less valuable than a larger wetland, because they assume that “larger” means “better”. Smaller wetlands, however, are extremely valuable for maintaining the biodiversity of a number of plant and animal species. Furthermore, healthy populations of many species depend on not just single wetland but a landscape densely covered by a variety of wetlands. Small isolated wetlands are not expendable if the goal is to maintain present levels of biodiversity.[8]

Specification: Amend Section 4.11 Wetland Conservation Overlay District Boundaries – amend size of jurisdictional wetlands - see Draft Ordinance with Changes

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[2] Kimberly J. Babbitt, Dep’t of Natural Resources, UNH. The relative importance of wetland size and hydroperiod for amphibians in southern New Hampshire
[3] Allen E. Plocher, Ph. D.; Geoffrey A. Levin, Ph. D. Illinois Natural History Survey. Michael V. Miller, Ph. D. Illinois State Geological Survey. Champaign, Illinois. Importance of Small Isolated Wetlands
[4] James P. Gibbs. College of Environmental Science and Forestry, SUNY. Wetland Loss and Biodiversity Conservation
[5] Raymond D. Semlitsch and J. Russell Bodie. Division of Biological Sciences, University of Missouri. Are Small, Isolated Wetlands Expendable?
[6] Kyle Hawes, Natural Resources Biologist, Ecoscapes Consultants, Ltd. Does Size Matter?
[7] Kyle Hawes, Natural Resources Biologist, Ecoscapes Consultants, Ltd. Biodiversity.
[8] Raymond D. Semlitsch. Size Does Matter: The Value of Small Isolated Wetlands. Environmental Law Institute