

Shades of Green

The Patchwork of Wetlands Regulation in Massachusetts

by Amy Dain

Introduction

"Why can't I just fill the little swamp in the backyard? That way I have more lawn to enjoy."¹

This question is listed on the website for Gloucester's Conservation Commission under "Frequently Asked Questions." The Commission's response is that all wetlands, including small seasonal wetlands, help clean stormwater, serve as drainage areas and provide habitat for many species.

While there is broad consensus on the need for wetlands protection, there is less agreement about the best system for regulating development in and near wetlands. The Commonwealth's decentralized system of local wetlands regulation is confusing and ever evolving. It can be difficult for a homeowner or builder to figure out which "little swamps" should be protected according to local laws and regulations.

In 2004, Pioneer Institute for Public Policy Research partnered with Harvard University's Rappaport Institute for Greater Boston to catalogue land use regulations in every municipality within 50 miles of Boston, an area that includes 187 cities and towns, over half of the 351 in the state. The study covered zoning, subdivision, septic and wetlands regulations.² (Please visit www.masshousingregulations.com to view the study.)

Founded in 1988, Pioneer Institute is a non-partisan public policy think tank committed to keeping Massachusetts economically competitive and to strengthening the core values of an open society. The Shamie Center for Better Government seeks limited, accountable government by promoting efficient delivery of public services and effective performance of core government functions.

> Shamie Center for Better Government

> February 2008

Drawing on the Pioneer/Rappaport study's documentation, this paper describes and analyzes the regulatory apparatus for wetlands protection and makes recommendations for improving the system's consistency, transparency, and efficiency.³ It should be noted that this paper does not review the environmental science underlying wetlands regulation, nor does it attempt to judge what the ideal level of wetlands protection would be.

The Patchwork of Town-by-Town Wetlands Regulation

The decentralization of regulatory authority among 351 cities and towns has resulted in a patchwork of diverse and confusing rules. Seventy percent (131) of the 187 communities studied have passed local wetlands bylaws or ordinances that exceed the state and federal standards of protection.⁴ The research revealed five common ways that the fragmented regulatory landscape reduces the predictability and transparency of the permitting process. The pervasiveness of these issues suggests a need for systemic reform:

1. Regulations vary significantly between municipalities.

2. Municipalities frequently amend their regulations.

3. Regulations are sometimes written in vague and confusing language.

4. While public access to regulations is guaranteed, it often takes time and money to obtain them.

5. Some conservation commissions create wetlands policies that are more difficult to research than promulgated regulations.

Proponents of the current system might argue that its flexibility allows for tailored, negotiated solutions that maximize protection of vulnerable resources. It could also be argued that the state regulations do not go far enough in providing protection, and that some communities' watersheds require higher levels of protection than others.

This paper argues that flexibility is only one component of sound public policy. Consistency, transparency, and predictability are also essential elements of the regulatory system. Strong regulatory protections of the environment need not be so confusing. The environment is not the developer's enemy; risk and uncertainty can be. Developers of residential properties should be able to determine wetlands protection requirements from reading publicly available laws and regulations. The conclusion of this Policy Brief offers recommendations for more efficient ways to protect wetlands resources.

How are wetlands regulated?

The protection of wetlands is an important environmental policy goal at every level of American government. The federal Clean Water Act provides a baseline level of protection for wetlands, such as swamps, marshes and bogs. According to the federal rules, filling wetlands is not permitted if a practical, less damaging alternative exists. The Army Corps of Engineers (ACOE) reviews applications to fill wetlands. For wetlands that are less than 5,000 square feet in surface area in Massachusetts, local conservation commissions grant permits that qualify as ACOE approval.

The Massachusetts Wetlands Protection Act provides a greater level of protection. While federal jurisdiction pertains to development in wetlands, the Act gives Massachusetts additional jurisdiction to regulate land that abuts wetlands, as well as land subject to flooding, riverfront areas and land under bodies of water. The Massachusetts Department of Environmental Protection (DEP) oversees administration of the law by developing regulations, providing training to conservation commissions, hearing appeals, and acting in an enforcement role.

Local conservation commissions in each of the 351 municipalities are responsible for administering the Act. Conservation commissions are volunteer boards of three to seven members appointed by the selectmen or city council. The commissions receive permit requests such as Requests for Determination of Applicability, which are sometimes followed by applications called Notices of Intent if the impact of the proposed project is deemed to be large enough.

Commission members visit properties and hold hearings. Commissions grant Determinations of Applicability and permits, known as Orders of Conditions, which specify conditions the applicant must fulfill to be allowed to build. Commissions also issue Enforcement Orders for violations of the regulations.

In addition to their role as administrators of the state Wetlands Protection Act, conservation commissions administer municipal bylaws/ordinances. More than two-thirds of the municipalities within 50 miles of Boston (131 of 187) have passed wetlands bylaws/ ordinances that give local conservation commissions authority to regulate activities in areas that are not covered under the state's Wetlands Protection Act.

Most local bylaws/ordinances give the conservation commission authority to promulgate additional regulations. Seventy percent of the conservation commissions have done so. Some conservation commissions have also adopted informal policies.

Municipal requirements often exceed state standards in a few key areas, such as regarding vernal pools, isolated wetlands, land subject to flooding, and building setbacks from wetlands. For example, while the state grants conservation commissions jurisdiction over 100-foot buffer zones only around vegetated wetlands that border bodies of water, many municipalities also regulate buffer zones around isolated vegetated wetlands (those not bordering surface water).

In the 131 municipalities with local wetlands bylaws/ ordinances, there are numerous approaches to the definition, interpretation, and administration of wetlands regulations. This Policy Brief will explore each of the Commonwealth's five common wetlands regulatory issues in greater detail.

1. Regulations vary significantly between municipalities.

While the core components of local wetlands regulations are similar in many communities, the specific requirements vary significantly. Examples can be found in every area where local requirements exceed state standards. The multiple variations of the definition of (1) land subject to flooding and (2) isolated wetlands help illustrate this issue.

Fifty-nine of the 187 surveyed municipalities expand the state's definition of land subject to flooding. The Massachusetts Wetlands Protection Act requires review of proposed development on land that floods at least once per year, resulting in 1/4 acre-foot of flooded water.⁵ The most common local variation, adopted by 11 municipalities, is to require review of projects on land with annual flooding of at least 1/8 acre-foot, half of the volume needed to trigger review based on state standards.

Many other standards for "land subject to flooding" are on the books (the list below is not exhaustive):

Dover: 1/6 acre-foot

Georgetown: 25 cubic feet

Gloucester: 1,000 cubic feet (approximately 1/43 acrefoot)

Hingham: 1/16 acre-foot

Taunton: 1,000 square feet of surface area or 100 cubic feet

Wayland: 500 square feet of surface area

Five municipalities: 2,000 square feet of surface area to a depth of six inches

Twenty-four municipalities expand the definition to cover "any isolated depression... that confines standing water" – with no standard for minimum volume or surface area or depth that would trigger review. The exact wording varies.

The definitions of land subject to flooding also vary as to whether or not wetlands vegetation must be present. For example, Boxborough's regulations note that "isolated lands subject to flooding" should hold water long enough to support wetlands vegetation; Kingston defines "isolated land subject to flooding" as areas that do not support wetland vegetation; and Arlington's regulations state that such areas may or may not support wetlands vegetation. (See text box.)

As with "land subject to flooding," the definition of isolated vegetated wetlands also varies between communities. The state's jurisdiction does not cover isolated wetlands that do not border surface waters, such as ponds or rivers. Many municipalities give the conservation commission jurisdiction to review projects in or abutting isolated wetlands. An isolated wetland in Marshfield may not qualify as one in Merrimac. The size range of isolated vegetated wetlands that fall within regulatory jurisdiction varies widely:

Andover, Boxford, Groveland, Haverhill, Manchesterby-the-Sea, Mansfield, Medway and Topsfield: 5,000 square feet of surface area Hamilton, Marblehead and North Andover: 1,000 square feet

Harvard, Kingston and Norwell: 500 square feet

Marshfield: 400 square feet

Merrimac: 2,000 square feet

Saugus: 5,000 cubic feet volume

Wellesley: 2,500 square feet

Various Municipal Definitions of "Land Subject to Flooding"

Arlington Wetlands Protection Regulations, Section 4.28 (amended 2001): "Land Subject to Flooding or Inundation... such areas may or may not be characterized by wetlands vegetation or soil characteristics."

Boxborough Regulations for the Wetlands Bylaw, Section 1.5.9 (adopted 2001): "Isolated Lands Subject to Flooding: Any isolated depression without an inlet or outlet where surface or groundwater is at or near the surface of the ground for at least 8 weeks during the year to support wetlands vegetation."

Kingston Wetland Protection Regulations, Section 3.00: "Isolated Land Subject to Flooding is any area subject to flooding or inundation which, in the Commission's judgment, does not support wetland vegetation and does not serve as Vernal Pool habitat."

2. Municipalities frequently amend their requirements.

The bylaws/ordinances and regulations are frequently revised. As part of the survey, researchers obtained the date of adoption of the wetlands bylaws/ordinances for 118 of the 131 relevant municipalities and the last date of amendment of the bylaws/ordinances for 67 municipalities. Twenty-six municipalities adopted new wetlands bylaws/ordinances from 2000 to 2004.⁶ Forty-seven municipalities amended their bylaws/ordinances between 2000 and 2004. This represents 35 percent of the 131 municipalities with bylaws/ordinances, although the actual percentage is likely higher since researchers were not able to track the last date of amendment for all bylaws/ordinances. Many conservation commissions also amended their regulations in that time, although the researchers did not track these amendments systematically.

This is not to imply that changing local bylaws is easy. Carlisle's conservation agent said that the town "came up a few votes short" of passing a new vernal pool bylaw. One conservation chair wrote in an email in June 2004: "Given how long they take to draft and accept, I can safely say we will not have one completed by the year's end (hopefully by the end of next year, though)."⁷ Another conservation agent wrote in an email in November 2004: "We're just launching our efforts to revise the bylaw and the regs. We aren't known for moving too swiftly, so don't hold your breath."

3. Regulations are sometimes written in vague and confusing language.

Municipal wetlands regulations can be hard to interpret. They often contain ambiguous language and lack precise and comprehensive definitions. When the definition of protected wetlands is unclear, the outcome of a permit application is less predictable. The increased risk for developers can extend the time and cost of development. Broad regulatory language may also open the door to appeals by abutters.

Researchers documented problems with vague language and varying interpretations regarding the definitions of two types of areas frequently the subject of local regulation: (1) land subject to flooding, and (2) buffer zones around vernal pools. As mentioned above, 24 municipalities do not include any numerical standard for the minimum size of a flooded depression in their definition of isolated land subject to flooding. This omission means that a property owner cannot be sure which low spots on a parcel might trigger review. Eleven bylaws/ordinances/ regulations define land subject to flooding as follows:

"An isolated depression or closed basin without an inlet or outlet. It is an area which at least once per year confines standing water."⁸

Thirteen municipalities⁹ use language that is even broader, dropping the requirement of "at least once per year." The exact language varies, but the most common wording is:

"A temporary inundation or a rise in the surface of a body of water such that it covers land not usually under water."

Many of the regulations lacked definitions for "land subject to flooding" altogether. In general, this means that the state standards hold. Yet, in 40 municipalities there was no definition even where there was some indication in the language that the municipality exceeds state standards in this area, such as granting of buffer zones around land subject to flooding or adding terms so the phrase reads:

"...land subject to flooding or inundation by groundwater or surface water."

Another example of ambiguous and confusing language involves regulation of projects on land abutting vernal pools.¹⁰ Vernal pools are confined basin depressions that are covered by shallow water, usually for at least two months in the late winter, spring and summer, but may be dry during much of the year.¹¹ Interpreting identical language in local regulations, some conservation commissions enforce reviews of development within 100 feet of the waterline of a vernal pool, while others require reviews of all projects within 200 feet. The confusion results from how vernal pools and buffer zones are defined. Many municipalities define a vernal pool to include the 100-foot zone of dry land around the pool that serves as habitat for creatures dependent on the pool, such as salamanders.¹² Most municipalities with local bylaws/ ordinances also specify that development within 100 feet (the "buffer zone") of the vernal pool is subject to review.

Twenty-nine communities' requirements could be interpreted as making 200 feet from the water line subject to review: 100 feet of "habitat" in the definition of vernal pool plus 100 feet of "buffer zone" around the vernal pool. Pioneer/Rappaport researchers contacted the 29 municipalities to clarify whether they enforce 100 or 200 feet. While not all of the conservation commissions responded to the inquiries, it appeared that about half enforce 100 feet and half enforce 200 feet.

Illustrative examples of the varying interpretations are Stoneham (which enforces 100 feet) and Sharon (200 feet). Sharon defines a vernal pool as a "confined basin depression... as well as the area within one hundred (100) feet of the mean annual boundary of such depressions...."¹³ Sharon defines the buffer zone to be land within 100 feet of the "perimeter of the outer border of any wetland, floodplain, vernal pool or body of water."¹⁴ The Sharon conservation agent confirmed that the commission's jurisdiction stretches 200 feet from the waterline.

Stoneham's bylaw¹⁵ includes, in its definition of vernal pool: "The boundary of the resource area for vernal pools shall be 100 feet outward from the mean annual high water line defining the depression..." The bylaw grants a buffer of 100 feet around the "resource

areas." The Stoneham Conservation Chair wrote in an 11/19/04 email:

"...our bylaw states that 'the boundary of the resource area for vernal pools shall be 100 feet outward from the mean annual high water line defining the depression.' I take that to mean we do not claim an additional 100 feet of buffer zone beyond the original 100 feet."

While some of the bylaws/ordinances/regulations are vague about the width of area subject to the conservation commission's jurisdiction, a few are explicit about the width from the waterline. For example, Manchester-by-the-Sea's regulations state: "The buffer zone to a vernal pool resource area shall mean that area extending outward 100 feet horizontally from the mean annual boundary of the resource area (200 feet from the mean annual boundary of the pool)." Marblehead has the same language.

In one case, when a researcher asked an assistant administrator of a conservation commission whether the commission claims jurisdiction, in general, of buffer zones around vernal pools, he responded, "It is not clear; we go back and forth; probably not." This municipality does not list vernal pools in the bylaw, but the agent said that they would be regulated as isolated vegetated wetlands or isolated areas subject to flooding. When asked if the municipality regulates buffer zones around isolated vegetated wetlands, he responded, "It is the same 'kind of' [as with vernal pools]. We have in the past."

4. While public access to regulations is guaranteed, it often takes time and money to obtain them.

While municipalities are required to make regulations available, they can be difficult to obtain. Municipalities usually require a fee for copies of the actual regulatory text. Communities could use their websites to disseminate regulations, but many do not take advantage of this resource. Eighty-two of the 131 municipalities (63 percent) post the bylaw/ordinance and/or regulations on the municipal website. In the majority of cases, the full set of requirements is not available online, as bylaws and ordinances are more frequently posted than regulations.

Researchers found that obtaining regulations could be a time-consuming process. In one case, a conservation commission told the researcher to call the town clerk for the regulations and the town clerk said to call the conservation commission. Some commissions do not have office support staff, and conservation commissioners are unpaid volunteers.

5. Some conservation commissions create their own wetlands policies, which are more difficult to research than state and local regulations.

While regulations vary significantly across communities, are frequently amended, and may include vague language, they are at least written and formally promulgated. Some conservation commissions also have policies that may (or may not) be written but have not been formally adopted. These policies can be difficult to track. The most common areas covered by these policies are zones of "no building" or "no alteration" within the buffer zone around wetlands.

Massachusetts requires that development in "buffer zones" around wetlands be subject to review by the conservation commission, but the state does not prohibit building within the buffer zone. Ninety-nine municipalities have adopted regulations creating limited-use zones within the buffer zone (75 percent of municipalities with bylaws/ordinances).

Most municipalities require a setback of undisturbed natural vegetation from the wetland, often called a zone of "no disturbance," "no alteration," "no cut," or "no work." The size of the setbacks varies:

Acton: 50-foot no-disturbance zone, 75-foot no-build

zone, 50-foot chemical-free area and a 100-foot zone of no-disturbance for vernal pools.

Seekonk: 25-foot no-disturbance zone and 50-foot nobuild zone.

Hingham: No living quarters within 50 feet of a wetland, accessory structures within 35 feet, driveways within 25 feet, or clear cutting within 20 feet.

Many municipalities enforce limited-use zones as a matter of policy, and do not record the requirements in the bylaw/ordinance or regulations. Conservation representatives in Bridgewater (policy of 25-foot no-disturbance), Burlington (policy of 20-foot no-disturbance), and Framingham (policy of 30-foot no-disturbance) said that they plan to make the setbacks official by adding the requirements to the bylaws or regulations.

The Burlington Conservation Commission's assistant administrator said: "We have a policy of 20-foot no-disturb, but it is not in the bylaw. It is policy... We don't have the legal authority but we will strongly push for it. It will be in the next iteration of the bylaw or regulations." Carlisle's conservation agent described an informal policy of negotiation with the aim of keeping foundations 25 feet from wetlands. Douglas has a written policy of 50-foot no-disturbance. Freetown has a policy of 20-foot no-disturbance.

Several municipalities have no wetlands bylaw or ordinance, but still have policies that enforce limiteduse zones around wetlands. Weston's website states: "The Town of Weston does not have a Town Bylaw, but the Weston Conservation Commission does have a policy stating that no work may be performed within 25 feet of the edge of a resource subject to protection under the Massachusetts Wetlands Protection Act."

Wilmington noted, on the Pioneer/Rappaport survey: "Town policy is a 15-foot natural vegetated buffer strip and a 25-foot strip with no structures. DEP generally overrules the Town's decision in an appeal process." Other municipalities with policies (written or unwritten) of 25-foot setbacks, but with no bylaws or ordinances, include Norton¹⁶, Hopedale, Northbridge, Raynham, Uxbridge and Wakefield.

Of the 88 municipalities in the sample that either (1) do not explicitly list the "limited use" requirement in the bylaw/ordinance/regulations, or (2) have no wetlands bylaw or ordinance, at least seventeen municipalities (or 19 percent) have "limited use" policies. Researchers noted these policies when found, but did not seek them systematically, so additional municipalities are likely to have such policies.

Zoning and Other Land Use Regulation

This Policy Brief is focused on the mechanisms of wetlands regulation, not the costs and benefits of the regulation or regulation's effect on levels of housing construction statewide. Yet, it is worth noting that the impact of wetlands regulations on development may be best understood when viewed in conjunction with other land use regulations that govern development such as zoning, subdivision and septic system regulations.

Lot size requirements are of particular significance to developers. In 1999 and 2000, the Office of Geographic and Environmental Information (MassGIS) within the Massachusetts Executive Office of Environmental Affairs collected information on lot size requirements for the state's 351 cities and towns. According to the MassGIS data, fourteen municipalities (in the sample of 187) zone for a minimum of two-acre lot sizes in over 90 percent of the municipality's land area.¹⁷ Twenty-seven municipalities zone over 90 percent of the land area for one-acre lot sizes or larger.¹⁸ Ninety-five municipalities (50 percent of 187) zone over 50 percent of their land area for one-acre lot sizes or larger.

The impact of wetlands regulation on the number of buildable lots on a parcel, housing prices, and

developers' profits can vary significantly depending on the lot sizes that localities allow. For example, on a 10acre parcel zoned for 2-acre lots, there is potential to build up to five houses, notwithstanding requirements for septic systems or road installation. If there are wetlands on that parcel, and their presence means that one of the lots is not buildable according to local wetlands protections, then the developer might blame the loss of 20 percent of the units on the wetlands restrictions.

However, zoning, not wetlands requirements, determines the maximum potential buildout yield of a parcel. With ¹/₂-acre zoning, the same parcel might yield up to 20 houses (in comparison to five houses under 2-acre zoning).

In theory, flexible zoning could enable enforcement of wetlands restrictions without any net loss in the number of units to be built. Such zoning would determine the total number of lots that can be created on a parcel while allowing for creative arrangements of the units and for big setbacks from wetlands. Many municipalities do have provisions for flexible zoning on the books, variously called cluster development, open space residential design or conservation subdivision, that allows for homes to be clustered on part of the parcel while protecting open space.

However, many of these flexible zoning requirements mandate that the wetlands regulations be used to determine the number of units. For example, Carver's Flexible Development Bylaw¹⁹ reads:

"The maximum number of dwelling units allowed shall be equal to the number of lots which could reasonably be expected to be developed upon that parcel under a conventional plan in full conformance with all zoning, subdivision regulations, health regulations, wetlands regulations and other applicable requirements."

Thus, while allowing flexibility, Carver's zoning bylaw still uses wetlands regulations to determine the buildout yield.

Conclusion and Policy Options

Protection of wetlands for the sake of clean drinking water, flood mitigation and bio-diversity is in everyone's interest. There are good reasons not to fill the "little swamps" in our backyards. The Commonwealth and its 351 cities and towns should establish a more rational, efficient system for accomplishing the task.

The system of wetlands regulation in Massachusetts is highly complicated and ever-evolving. It is a challenge to learn each new system of regulation, town by town. With so many separate commissions responsible for enforcing state regulations, and the diverse local regulations, inconsistent and sometimes unjustified enforcement may result.

There is anecdotal evidence of this. One wetlands consultant who works for residential developers explained: "One thing is that we are running into some agents-and even conservation commissions-which have very limited knowledge of wetlands, riverfronts, etc. as well as their own regs and the state regs! This can lead to problems with crazy 'out of bounds' requests by commissions/agents, potentially unjustified or unwarranted enforcement orders, even appeals to DEP for superseding determinations or Orders, but in the case of towns with by-laws it can mean going to court."

There are two potential approaches to reforming the wetlands regulatory system: (1) bold state action to improve predictability for builders while ensuring a high level of environmental protection; or (2), incremental reforms that rely on local initiative to achieve the same goal. Under either approach, the state, localities, universities, environmental organizations and the real estate industry should have a role in defining improvements to the system.

Potential State-level Reforms

A. A uniform state-level regulatory standard

Using scientific and economic analyses as a basis for decision-making, environmentalists, developers and policymakers should see if compromise is possible: a strengthening of state requirements in exchange for the loss of home-rule authority to pass wetlands legislation. This approach would provide consistency of standards and increase the predictability and transparency of the regulatory system. It may reduce the number of appeals of local decisions, thus also reducing the associated legal fees for applicants and municipalities.

To create a uniform standard, the state would first need more information on the many environmental requirements currently in place in localities. The state could partner with universities to undertake a thorough evaluation of the science and economics of wetlands regulations. The research should focus on the most common areas of local regulation such as (a) setbacks from wetlands, (b) vernal pools, (c) isolated vegetated wetlands and (d) land subject to flooding, and it should inform the questions of whether the state regulations are sufficient in these areas and whether strengthening them would lead to greater benefits than costs.

Reaching a negotiated solution between environmentalists and developers would be very hard work. Opposition by municipalities to the loss of local control would also be a significant political barrier. In addition, after its 2004/2005 effort to revise the state wetlands regulations proved to be a difficult political process, the Department of Environmental Protection (DEP) may be unwilling to reopen the issue.

B. State-defined supplemental bylaws, adopted by local option

Another option is for the state legislature to adopt legislation that limits the scope of local wetlands regulation by creating a single "model bylaw/ ordinance" that municipalities could adopt to supplement state requirements. The state could give municipalities a window of time during which their current requirements would remain in force while they have the opportunity to adopt the model bylaw/ ordinance. A key challenge for this approach would be updating the standard bylaw. Each municipality would have to reconsider its use of the supplemental bylaw every time the state standard is updated, so municipalities could still end up with multiple versions of the standard bylaw.

C. Mandate of no loss in housing production due to local wetlands regulation

To address the concern that localities are adopting local wetlands requirements as a way to prevent development, the state could pass a law that the number of housing units that could be developed on a given parcel under the local zoning and state environmental requirements could not be reduced by the enforcement of local wetlands requirements.

All local wetlands protections would remain in force. Communities would be required to accommodate the shortfall in development yield (housing units) resulting from the application of local environmental protections via flexible zoning that allows creative arrangements of the housing on lots not necessarily conforming to the conventional lot size, setback, frontage and other requirements.

As an enforcement mechanism, if the community does not permit the yield expected under state wetlands standards and local zoning, the developer could appeal to DEP. If DEP finds in the developer's favor, the project would only have to meet state DEP standards.

This approach would not make the local wetlands requirements any more uniform, but it would increase predictability for developers regarding how many housing units they can build in a project, as the buildout number would be determined by zoning. (Option C is detailed in Kurt Gaertner's Pioneer Institute Policy Brief, "A Reform of Wetlands Regulations," available at http://www.pioneerinstitute. org/pdf/ROE5.pdf).

Potential Incremental Reforms

A. Posting of local bylaws/ordinances/ regulations/policies

Municipalities should post all of their bylaws, regulations and policies on municipal websites and send updated versions to the Massachusetts Association of Conservation Commissions (MACC), which maintains a website with local bylaws, regulations and policies. The MACC website is a great contribution to making local regulations transparent and available, but the site must be updated.

B. Revisions for clarity

Municipalities should review their requirements with an eye towards ensuring that definitions are included and language is precise.

C. Adoption of model bylaw

DEP or other qualified wetlands scientists and attorneys, with input from a range of stakeholders, should review the MACC model bylaw to ensure that it is indeed a good model. Municipalities opting to have local wetlands standards should then use the MACC model bylaw as the basis for their standards.

D. Training

MACC and DEP should play a stronger role in training local conservation commissions.

E. Local zoning reform

Municipalities should revise their zoning codes to allow open space preservation and housing development. By allowing denser development in appropriate areas, protection of wetlands will be an easier task. Reform of zoning should involve adopting cluster zoning provisions as well as allowing dense development in appropriate areas. In a related effort, Pioneer Institute also proposes a series of state-level zoning reforms that would reward municipalities that meet state goals for development, allow certain types of desired, compact residential development and give municipalities new tools to negotiate better development. (Information on these proposals can be found at www.masshousingregulations.org)

Amy Dain is Pioneer's Project Manager of the Housing and Middle Cities Initiatives. Prior to joining Pioneer in 2004, Ms. Dain coordinated Government Affairs at the Jewish Community Relations Council of Greater Boston, served as an intern at the Massachusetts Executive Office of Environmental Affairs, volunteered in Israel, and worked as an environmental organizer in the Berkshires. Ms. Dain received her Masters in Public Policy from Harvard University's Kennedy School of Government in 2003 and her B.A. in Russian Studies from Wesleyan University in 1996.

Notes

1. http://www.ci.gloucester.ma.us/index. php?module=pagemaster&PAGE_user_op=view_ page&PAGE_id=313

2. Special thanks to Evaclaire Synkowski, the project's lead researcher on wetlands regulations, and Jenny Schuetz, the senior researcher who helped code the information for comparative analysis.

3. Note that the paper analyzes research conducted in 2004. The paper refers to the regulations in the present tense, although by the 2006 release of this analysis, some have been amended and new requirements have been adopted.

4. This paper refers to bylaws, ordinances, regulations and policies. Cities' legislative bodies (city councils) adopt ordinances, while towns' legislative bodies (town meetings) adopt bylaws. The executive branch of government promulgates regulations to elaborate on laws that have been adopted by the legislative branch. Many local wetlands bylaws/ordinances give the conservation commission authority to promulgate regulations. Many conservation commissions also have policies that have not been formally promulgated but guide their decisions. This document often refers generically to "regulations" as any requirement that appears in a bylaw, ordinance or regulation. Note also that local requirements, where they are adopted, must necessarily exceed state and federal protections; localities do not have the authority to relax state and federal requirements.

5. This is the volume of a depression in the earth that has a surface area of $\frac{1}{4}$ acre and a depth of one foot.

6. The research only includes bylaws/ordinances/ regulations passed or amended by December 31, 2004, although municipalities continued to adopt and amend them after 2004. Plainville, Newbury and Shirley amended their wetlands bylaw in 2005. Grafton's website notes: "Following a Public Hearing held on January 4, 2005, the Grafton Conservation Commission voted unanimously to amend the '1988 Rules and Regulations for the Administration of the Town of Grafton Local Wetlands By-Law of 1987'." A survey received from Wakefield in March 2005 marks: "Going to Town Meeting April 4-8 to propose wetland protection bylaw." Groton approved regulations in January 2005.

7. Of the municipalities surveyed, the legislative body is city council in 31 communities, open town meeting in 124, and representative town meeting in 32. Town meetings can assemble as infrequently as once or twice per year. All of a town's voters may vote in open town meeting, while in representative town meeting, the elected membership can range from 45 to 240 (Citizen's Guide to Town Meetings, http://www.sec.state.ma.us/cis/ cistwn/twnidx.htm). Ushering bylaws through the town meeting approval process can be time consuming and risky.

8. The eleven municipalities are Arlington, Canton, Easton, Halifax, Hanson, Salisbury, Sharon, Watertown, Wenham, West Bridgewater, and Weymouth. 9. The thirteen municipalities are Danvers, Cohasset, Dedham, Haverhill, Kingston, Marshfield, Methuen, Peabody, Reading, Stow, Townsend, Westford, and Winchester.

10. Eighty-two municipalities (63 percent of the 131 with local requirements) extend the conservation commission's jurisdiction to regulate more potential area as "buffer zones" around vernal pools than the state's jurisdiction would cover. Under state regulations, conservation commissions can regulate certified vernal pools and the 100-foot habitat extending from the pool's waterline only to the extent that the vernal pool and habitat fall within state defined wetland resources areas (for example, within the buffer zone around a swamp). The 82 municipalities regulate buffer zones (1) around any vernal pool, whether or not the pool is "state-certified" and/or (2) regardless of the pool's location (even outside of a wetland resource area). While most of the 82 municipalities extend protection to 100 feet of land adjacent to the vernal pools, at least 16 extend protection greater than 100 feet from the vernal pool's waterline. Two municipalities extend the jurisdiction from the boundary of the pool 125 feet; 13 extend it 200 feet; and Scituate extends it 250 feet.

11. Vernal pools are unsuitable for fish, but may provide habitat for species such as frogs and salamanders. The absence of fish, which prey on amphibian eggs, makes vernal pools suitable breeding habitat for many amphibians.

12. The state regulations define "vernal pool habitat": "Vernal pool habitat means confined basin depressions which, at least in most years, hold water for a minimum of two continuous months during spring and/or summer, and which are free of adult fish populations, as well as the area within 100 feet of the mean annual boundaries of such depressions, to the extent that such habitat is within an Area Subject to Protection Under M.G.L. c. 131, 40 as specified in 310 CMR 10.02(1)."

13. Sharon's Wetlands Protection Bylaw, Section 2.7

14. Sharon's Wetlands Protection Bylaw, Section 2.3

15. Adopted 2004

16. Norton's written policy posted with the Town Clerk: "1. At least a 25-foot 'No Disturbance Zone' will be required for all projects. The 25-foot area shall not be cleared, grubbed, or made into lawn; it shall be left in its natural state. The 25-foot no disturbance zone requirements shall be met for the entire length of the approved wetland boundary. The Commission may grant relief from portions of the 25-foot No Disturbance Zone requirement if there are significant attempts made to meet the requirement and a clear showing that the requirement cannot be met. Posted with the Town Clerk May 30, 2001."

17. Paxton, Princeton, Rehoboth, Sutton, Boxford, Plympton, Carlisle, Lincoln, Medway, Berlin, Bolton, Groton, Dunstable, and Townsend.

18. In addition to the fourteen listed for two-acre lot sizes, the following zone over 90 percent of the land area of one-acre lot sizes or larger: Pepperell, Harvard, Mendon, Sudbury, Sherborn, Berkley, Carver, Norwell, Newbury, Ipswich, Wenham, Topsfield, and Lunenburg.

19. Section 5850



85 Devonshire St., 8th Floor, Boston, MA 02109