

## Action Plan 7 Protecting and Restoring Wetlands

### Problem

Marine and freshwater wetlands continue to be lost and degraded. Although the rate of loss has diminished greatly in recent years, reductions in future wetland losses and wetland habitat degradation will only be achieved through increased local training and enforcement, education of property owners, and the adoption of local wetland regulations to address shortcomings of state and federal laws.

The management of stormwater discharges has become an increased responsibility of conservation commissions. These stormwater treatment requirements must be strengthened to better achieve water quality goals (like open shellfish beds), and conservation commissions need to better coordinate with other boards to ensure comprehensive and consistent town-wide stormwater management requirements.

Additional efforts are needed to restore existing degraded wetlands and remedy past wetland violations. This requires a more robust enforcement approach and additional public funding for restoration projects.

This action plan principally relates to the enforcement of existing laws and regulations, and the need to adopt municipal laws and regulations that address local needs and conditions. Additional issues relating to wetlands protection and restoration can be found in many other action plans in this Buzzards Bay CCMP<sup>105</sup>.

### Goal

***Goal 7.1 Long-term increase of high-quality wetlands in Buzzards Bay and its surrounding watershed.***

### Objectives

Objective 7.1. To protect existing wetlands.

Objective 7.2. To encourage restoration of degraded wetlands.

Objective 7.3. To improve enforcement of wetlands laws.

Objective 7.4. To upgrade the effectiveness of local conservation commissions to protect wetlands.

Objective 7.5. To create new wetlands habitat, especially habitat that can be used by threatened, rare and endangered coastal species and anadromous and catadromous fish.

### Approaches

Most of the action needed to achieve the goals of this action plan relate to improved enforcement of existing regulations, or the need to adopt municipal laws and regulations that supplement the minimum standards imposed by state and federal laws. Improved enforcement, monitoring wetland loss using aerial photography, and implementation of new local wetlands laws and regulations are the key actions. Continued training of municipal staff (conservation agents) and municipal conservation commission members will facilitate these actions. Wetlands regulations are among the most complex that are enforced locally, and there is a steep learning curve for municipal officials in their successful implementation. Because local conservation commissioners are volunteer appointees with little training in wetland science, it is important that state and regional agencies (like the Buzzards Bay NEP) provide training and support.

The two most challenging aspects of enforcing wetlands regulations are the accurate delineation of wetland boundaries, and the adequacy of stormwater treatment designs (which has a primary benefit to water quality). Municipal boards must carefully review these elements for accuracy and adequateness. These can be assured through improved training of commissioners and staff, utilization of free technical services (like the Buzzards Bay NEP), and for complex projects, hiring consultants, paid for by the applicant, as provided under state laws.

Municipalities can reduce future threats to wetlands by promoting open space acquisition and conservation restrictions on lands with appreciable wetland habitat, and by helping restore filled or impaired wetlands.

### Costs and Financing

The cost of adoption of regulations is negligible to government, but the staff to implement and enforce additional regulations is an added cost. Most of the training courses are available at no or little cost. Other needed actions, like the restoration of wetlands, or the permanent protection of wetlands and habitat will only be achieved through additional government funding. For example, a funding level of \$1 million per year could leverage the protection or restoration of many hundreds of acres annually.

### Measuring Success

Most of the elements of this action plan can be addressed through tracking programmatic actions, like the adoption or update of bylaws and regulations. Some actions, like numbers of acres lost, restored, or protected are useful metrics, and are already being tracked by DEP or the Buzzards Bay NEP.

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<sup>105</sup> Action Plan 8 Restoring Migratory Fish Passage, Action Plan 9 Protecting Bio-Diversity and Rare and Endangered Species Habitat, and Action Plan 12 Protecting Open Space have many goals, objectives, and suggested actions that compliment this action plan.

## Background

Marine and freshwater wetlands are some of the world's most naturally productive areas, and they perform many functions that are useful to man. The [Massachusetts Wetlands Protection Act, G.L. Chapter 131, section 40](#), officially recognizes that wetlands are crucial to the following interests:

- Protection of public and private water supply
- Protection of groundwater supply
- Flood control
- Prevention of storm damage
- Prevention of pollution
- Protection of land containing shellfish
- Protection of fisheries
- Protection of wildlife habitat.

Marine wetlands, especially salt marshes, eelgrass beds, and shellfish beds, together with other marine habitats, are fundamental for healthy coastal ecosystems. With respect to protecting marine and coastal resources, freshwater wetlands are important in removing nutrients and other pollution associated with upper watershed development. The need, as recognized by the legislature, to preserve freshwater and marine wetlands, is thus fundamental to any effort to protect either coastal or inland water quality and living resources. For these reasons, the protection and restoration of coastal and inland wetlands are a major focus of the Buzzards Bay National Estuary Program. A summary of wetland types in each watershed municipality is shown in Table 25.

In Massachusetts, since colonial times, an estimated 40-50% of the wetlands base has been lost, and wetlands continue to be destroyed and degraded at an unacceptable rate. Wetlands are still widespread in Buzzards Bay, although evidence of historic wetland loss is clearly evident in the greater New Bedford area (see Figure 69). A study conducted for the 1991 management plan estimated that between 1977 and 1986 alone, southeastern Massachusetts lost over 1300 acres of freshwater wetlands. The passage of the inland wetland protection regulations in 1983 improved this situation considerably. For example, as part of the Wetland Conservancy Program (described below), a comparison of wetlands on aerial photographs in about 1994 and then 2001, within the Buzzards Bay watershed, found that only 167 acres of wetlands were lost, comprising 306 sites. Many of these documented losses were illegal alterations. The study did not identify alterations less than 1/3 acre, and these are considered much more widespread via wetland encroachment on developed lots. These smaller encroachments may be cumulatively greater than other documented illegal fills, but these losses have not been well characterized. In any case, these statistics suggest that both enforcement and the current regulations for wetland protection still fall short of full protection.

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## Recent court rulings limiting federal jurisdiction regulating fill and discharges to wetlands

In 2001, in a decision in the case of Solid Waste Agency of Northern Cook County (SWANCC) versus the U. S. Army Corps of Engineers, the U.S. Supreme Court limited the scope of the Clean Water Act's jurisdiction by limiting the definition of "Waters of the United States." In the SWANCC decision, the Court invalidated the "Migratory Bird Rule" (the use of the wetlands by migratory birds crossing state lines) as the sole basis for applying federal wetland regulations to "isolated" and non-navigable waters and wetlands. The court's decision did not define which waters and wetlands were covered by federal regulations (33 CFR 328(a)(3)).

In 2004, the U.S. Environmental Protection Agency and the U.S. Army Corps of Engineers proposed but did not adopt new rules defining "Waters of the United States" to address this decision. The impacts on states of this ruling and the lack of clear new rules, is discussed by Christie and Hausmann (2003).

While the SWANCC decision eliminated some solitary adjacent isolated wetlands from federal protection, it did not directly affect adjacent or bordering vegetated wetlands along navigable waters of the U.S. However, in 2006, federal jurisdiction was further limited by the Supreme Court decision in Rapanos versus the United States. In one sense, Rapanos went beyond the idea of just "navigable waters" as being waters of the U.S. by including the concept of pollutant pathways. However, the Supreme Court also rejected that all bordering wetlands near navigable waters be automatically included under the jurisdiction of the Army Corps, and remanded the case back for review. That is, questionable cases will need to be decided on a case-by-case basis until the law and regulations are clarified.

Because of the Rapanos decision, new cases are making their way to the Supreme Court to clarify further the definition of jurisdictional wetlands under the Clean Water Act. In a local case, a Carver, MA cranberry grower appealed a \$75,000 fine and a \$1.1 million restoration cost for destroying 50 acres of wetlands to build a cranberry bog. The grower asserted that the Army Corps had no jurisdiction over the destroyed wetlands. In 2005, the U.S. First District judge rejected this assertion. However, in October 2006, the first U.S. Circuit Court of Appeals sent the case back to U.S. District Judge for further consideration in light of the Rapanos decision.

Because the authority of the federal government in protecting wetlands has diminished in recent years, two actions should occur. First, the U.S. Congress should clarify and strengthen the language of the Clean Water Act to protect wetlands. Second, state and local government should adopt laws necessary to protect the values and functions of wetlands from discharges and fill where jurisdiction is lost by federal agencies.

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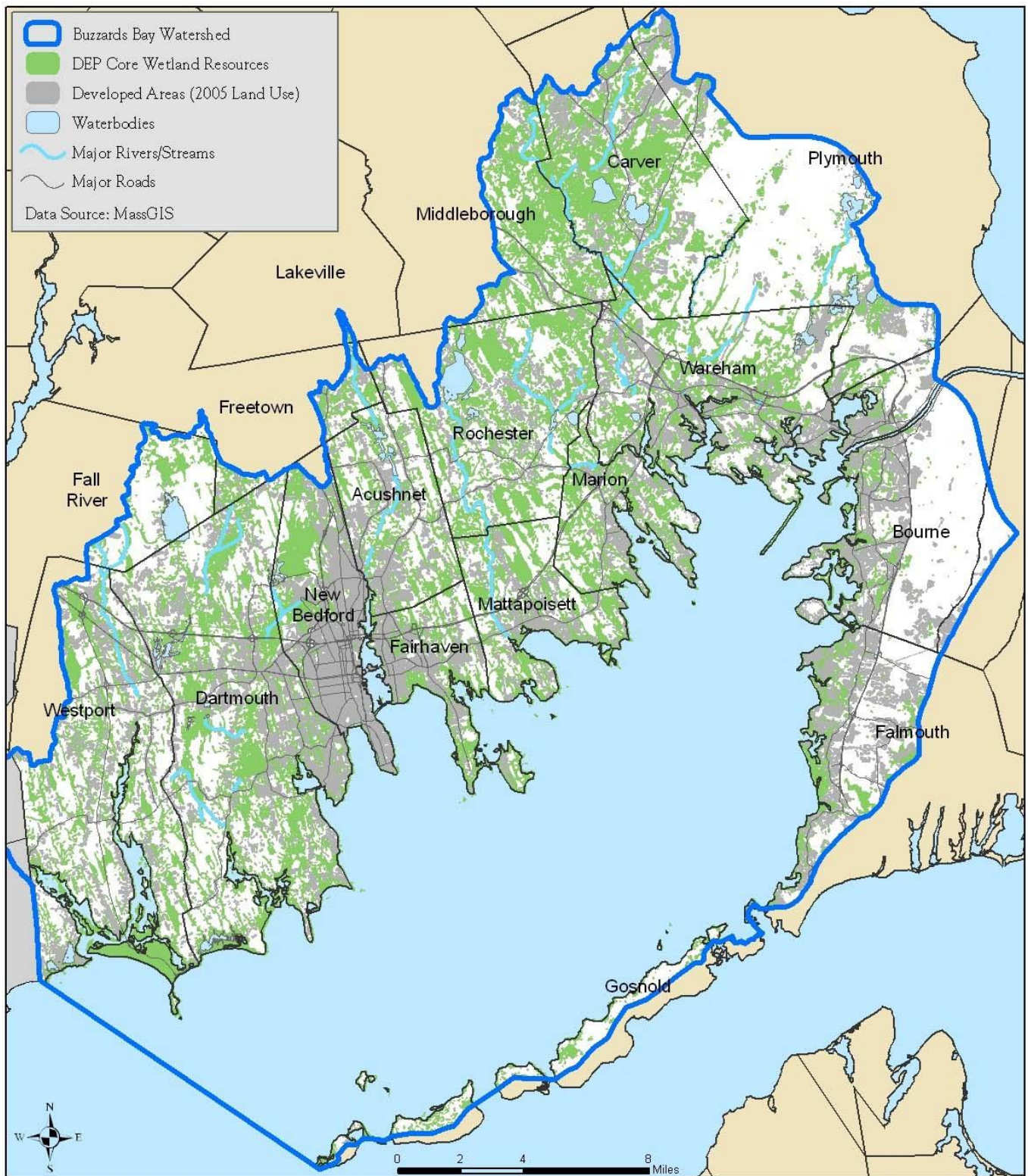


Figure 69. Core vegetated wetlands in the Buzzards Bay watershed.

(Wetland Conservancy Program data from MassGIS.)

Table 25. Summary of wetlands in the Buzzards Bay watershed.

Summary from the Buzzards Bay NEP based on MassGIS 1991 wetland coverage clipped to Buzzards Bay NEP 2006 adopted watershed. Excludes marine open waters, watershed area in Rhode Island, and a small area of unclassified lands. Not shown but included in column totals are lands in Lakeville, Sandwich, Kingston, and Freetown.

Wetland Habitat Type	ACUSHNET	BOURNE	CARVER	DARTMOUTH	FAIRHAVEN	FALL RIVER	FALMOUTH	GOSNOLD	MARION	MATTAPANSETT	MIDDLEBOROUGH	NEW BEDFORD	PLYMOUTH	ROCHESTER	WAREHAM	WESTPORT	Total in category	percent of all wetlands in the watershed
BARRIER BEACH SYSTEM		49		65	94		28	21	47	86					36	455	880	1.5%
BARRIER BEACH-COASTAL BEACH		20		81	8		53	66							9	121	358	0.6%
BARRIER BEACH-COASTAL DUNE		9		94	12		77	31							9	200	432	0.7%
BARRIER BEACH-DEEP MARSH																2	2	0.0%
BARRIER BEACH-MARSH		2					2									12	15	0.0%
BARRIER BEACH-SALT MARSH																0	0	0.0%
BARRIER BEACH-SHRUB SWAMP							2									5	7	0.0%
BARRIER BEACH-WOODED SWAMP DECIDUOUS																2	2	0.0%
BOG		10	129	4			1	0			44	26	39	1	21		276	0.5%
COASTAL BANK BLUFF OR SEA CLIFF	0	73		20	7		15	15	10	7		25	0		44	14	232	0.4%
COASTAL BEACH	2	123		100	64		94	157	71	56		36			148	44	896	1.5%
COASTAL DUNE		88		37	30		35	35	6	18		5			90	19	363	0.6%
CRANBERRY BOG	66	134	2,952	57			24		163	66	745	13	567	1,083	1,591		7,594	12.8%
DEEP MARSH	139	42	416	70	5	9	5	5	34	3	208	8	175	218	296	7	1,685	2.8%
OPEN WATER	157	175	1,223	483	22	578	299	182	44	47	108	102	1,688	1,207	1,138	193	7,675	13.0%
ROCKY INTERTIDAL SHORE		21		45	31		36	85	21	29		14			9	47	337	0.6%
SALT MARSH	29	360		1,142	607		245	26	419	402		4	1		886	987	5,107	8.6%
SHALLOW MARSH MEADOW OR FEN	134	29	252	243	140	3	58	15	77	32	36	144	60	210	186	212	1,844	3.1%
SHRUB SWAMP	111	109	674	242	51	10	80	104	119	95	268	82	107	470	294	83	2,947	5.0%
TIDAL FLAT	1	39		93	34		43	49	26	20		1			2	249	557	0.9%
WOODED SWAMP CONIFEROUS	17	6	342	211	1	83	7	2	31	131	67	265	55	264	65	15	1,579	2.7%
WOODED SWAMP DECIDUOUS	1,060	86	692	4,385	570	335	68	85	1,029	1,189	1,079	773	39	2,147	435	3,052	17,251	29.1%
WOODED SWAMP MIXED TREES	637	18	897	1,478	100	475	10	0	551	729	1,567	662	71	1,311	261	171	9,159	15.5%
Total Wetlands	2,352	1,393	7,577	8,852	1,776	1,492	1,182	877	2,648	2,911	4,124	2,160	2,802	6,910	5,521	5,889	59,200	
UPLAND	9,710	20,255	13,571	30,950	6,239	5,326	11,177	7,175	6,438	8,350	6,647	10,283	22,523	14,220	18,348	22,881	217,926	
PERCENT WETLAND	19.5	6.4	35.8	22.2	22.2	21.9	9.6	10.9	29.1	25.8	38.3	17.4	11.1	32.7	23.1	20.5	21.4	

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## Wetland Protection Act Resource Areas

### Inland Resource Areas:

- Banks and beaches
- Bordering vegetated wetlands
- Land under water bodies and waterways
- Land subject to flooding
- Riverfront areas

### Coastal Resource Areas:

- Land under the ocean
  - Designated port areas
  - Coastal beaches
  - Coastal dunes
  - Barrier beaches
  - Coastal banks
  - Rocky intertidal shores
  - Salt marshes
  - Land under salt ponds
  - Land containing shellfish
  - Anadromous/Catadromous fish runs
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Massachusetts provides a higher level of protection for its salt marshes through the Wetlands Protection Act Regulations and the Wetlands Restriction Program. The regulations are less protective of subtidal wetlands and habitat. Although the Wetlands Protection Act offers some protection for these areas, they nonetheless are being altered by increased boat activity, and declines in water quality from nonpoint source pollution and nitrogen loading.

Bordering vegetated wetlands provide an intermediate level of protection, but state rules allow for up to 5,000 square feet of wetlands to be altered or filled for a number of different reasons. Moreover, state, and federal regulations offer limited protection to isolated wetlands.

In general, cumulative impacts from many small projects are a major threat to all types of wetlands and are often the most significant cause of wetland degradation and habitat decline. This is because the existing management framework for wetland protection is inadequate for assessing and protecting against cumulative impacts.

An important part of the problem in protecting wetlands is that some conservation commissions may not be using existing state regulations as effectively as possible to protect wetlands and marine habitats. The present regulatory process is inadequate to deal with the growth that is fueling the continuous loss of wetlands.

Because the Wetlands Protection Act provides what many consider only a statewide minimum level of protection, many communities (in fact the vast majority in eastern Massachusetts - see Figure 70) have adopted

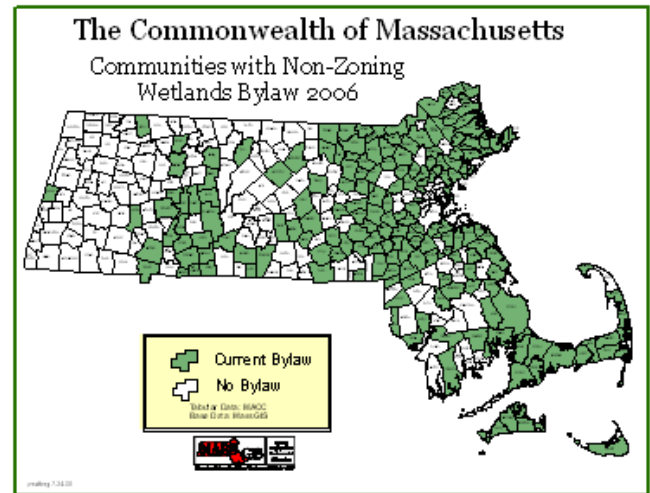


Figure 70. Communities with non-zoning wetland bylaws as of 2006.

zoning or non-zoning bylaws to further protect the interests of the Massachusetts Wetlands Protection Act. Sometimes these local measures add additional wetland resource values of sedimentation control, recreation, agricultural and historical values, aesthetics, and aquaculture. These local efforts provided an enhanced layer of regulatory oversight and protection to wetland resources.

The DEP has worked with other agencies in the Executive Office of Energy and Environmental Affairs (EEA) to develop a strategy to fully implement the policy of no net loss of wetlands adopted in June of 1990. A three-tiered approach of avoidance, minimization, and mitigation is used to achieve this goal, and was fully implemented in wetland permitting with the adoption of the 2005 revisions to the regulations.

## Wetlands Protection Act

In 1963, with the adoption of the Jones Act, Massachusetts became the first state in the nation to protect coastal wetlands, preceding even the efforts of the federal government. This law, in conjunction with the "Hatch Act," passed in 1965 to protect inland wetlands, eventually evolved into the current state Wetlands Protection Act (WPA). Significant revisions of the WPA regulations were promulgated in 1978 for coastal wetlands, in 1983 for inland wetlands, and in 1997 for river front areas. These revisions established the current system of resource areas, presumption of significance, and performance standards.

The Massachusetts wetland laws and regulations are still viewed as one of the most protective in the country. However, given the state's historic loss of wetlands and the fact that this loss continues today, concern remains about the adequacy and enforcement of the law. Still, during the past decade, the program has been strengthened considerably with upgraded policy directives, especially in the area of no net loss of wetlands and wetland restoration efforts, as well as new efforts to document illegal wetland alteration activity using aerial surveys,

which in turn has prompted additional compliance with the law. Furthermore, because the law is viewed as a minimum state standard, and because municipalities may adopt stricter laws under home rule, the Massachusetts wetland laws and regulations continue to be driven forward as certain approaches become more widespread at the local level.

At its core, the WPA is designed to protect the natural resource values of both inland and coastal wetlands. The regulations specifically define five inland wetland resource areas and eleven coastal resource areas for protection. Each of the resource areas plays a role in the protection of one or more of the statutory interests listed in the preceding section.

The primary responsibility for implementing the WPA regulations rests with local conservation commissions, which consist of three to seven appointed members. The regional office of the DEP is responsible for oversight and review of local decisions that are appealed. DEP also provides technical assistance and training to conservation commissions, as do other entities like the Buzzards Bay National Estuary Program for Buzzards Bay municipalities, and the Massachusetts Association of Conservation Commissions (MACC), a non-profit advocacy organization supporting conservation

In Massachusetts, wetlands delineation is primarily based on the occurrence of specific vegetation (originally primarily so, see Jackson, 1996), with confirmation of wetland hydrology by some other feature. The WPA specifies that boundaries of vegetated wetlands be delineated based on the occurrence of vegetation that is indicative of saturated conditions for a significant portion of the year. Non-vegetated wetlands, such as coastal banks and coastal dunes, are typically delineated based on geological features.

The WPA Regulations (codified principally under [310 CMR 10.00](#)) require that a permit be obtained from the commission before proposed activities that would alter wetlands can occur. This permit, called an Order of Conditions, should include conditions necessary to protect the interests of the Wetlands Protection Act. At a minimum, performance standards provided in the regulations must be met. Activities within 100 feet of wetlands require a review of the project to determine whether wetland alteration might occur, and a permit is needed. Projects within this 100 ft. buffer zone that are presumed not to affect wetlands are issued a “negative determination” on the applicability of the WPA laws and regulations by the conservation commission.

### **Stormwater Policies and Regulations**

In 1996, the state adopted stormwater rules and guidelines relating to the implementation of the Wetlands Protection Act by conservation commissioners. In 2005, DEP recognized that the policies were outdated and began updating them, and in 2007, they released a

draft of the new stormwater regulations and policies. These new regulations still do not address standards to meet nitrogen and bacteria TMDLs adopted by the state and EPA.

During the same period, some municipalities adopted their own local stormwater regulations, and the Buzzards Bay NEP assisted in the development of some of these in the Buzzards Bay watershed<sup>106</sup>.

Local and state stormwater policies and regulations remain one of the most challenging components of the WPA regulations for conservation commissioners to enforce. These regulations are particularly important for protecting and restoring water quality. For these reasons, it is especially important for commissions to collect fees to utilize the services of outside consultants to review stormwater plans and stormwater calculations for all large projects. Commissioners should also attend training sessions to learn how to conduct a preliminary review of stormwater plans for adequacy, and should require the submission of a stormwater plan checklist.

The state stormwater policies and recommendations are discussed in detail in Action Plan 3 Managing Stormwater Runoff and Promoting LID.

### **Wetlands Restriction Program**

The Coastal and Inland Wetlands Restriction Acts, enacted by laws in 1965 and 1968, are referred to today as the Wetlands Restriction Program, although certain elements of the program are now carried out under the Wetlands Conservancy Program described below. The program was intended to protect the state’s most significant wetlands. Although the program terminated 30 years ago, the deed restrictions enacted by the program remain in force.

The purpose of the Wetland Restriction Program was to provide protection to wetlands by prohibiting certain activities in advance of any work being proposed. The regulations for these laws are [310 CMR 13.00 \(inland\)](#) and [310 CMR 12.00 \(coastal\)](#). The law was particularly important when it predated the passage of the state Wetland Protection Act in 1972 and the companion coastal regulations adopted in 1978.

In the 1960s, 70s, and 80s, the regulatory predecessor to the Division of Conservation and Recreation (DCR<sup>107</sup>) was the lead on this effort and mapped wetlands in a number of cities and towns in Massachusetts. They also placed deed restriction orders pursuant to either the

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<sup>106</sup> In 1995, 1999, and 2003, the Buzzards Bay NEP drafted more protective local unified model stormwater regulations for adoption of consistent regulations among conservation commissions, boards of health, and planning boards. The latter two boards were not required to adopt the state stormwater regulations, and the BBNEP sought to promote a consistent approach among municipal departments.

<sup>107</sup> Formerly called the Department of Environmental Management.

Coastal Wetlands Restriction Act ([MGL Chapter 130, Section 105](#)) or the Inland Wetlands Restriction Act ([MGL Chapter 131, Section 40A](#)). The Wetlands Restriction Program was first applied to coastal wetlands in the 1970s, particularly salt marshes, tidal flats, barrier beaches, sea cliffs, dunes, and salt ponds. No lands under the ocean were restricted.

These permanent wetland restriction orders were placed in 53 municipalities and restricted activities on approximately 46,000 acres of coastal wetlands and 8,000 acres of inland wetlands.

The restriction orders were recorded at the registry of deeds in the counties where the properties were located, and are carried forward with future landowners, who should be informed of the restriction at the time of purchase or deed title search. Municipalities where these wetlands orders were placed should have copies of their community's restricted wetlands plans and restriction orders. In some cases, the original maps provided to the towns appear to have been lost or forgotten. Many of these deed restrictions can now be searched and viewed online in databases posted by county deeds offices. Violations of the deed restrictions are enforced by DEP pursuant to [310 CMR 13.00](#) and [310 CMR 12.00](#).

Today, some property owners may not be aware of deed restrictions that were applied to their property under this program. Moreover, many conservation commissioners - unpaid volunteers that may serve their community for two or three years-- may not have even heard about the wetland restriction program. A further complication is that wetland restriction maps, which do not show property bounds, are attached to the deed by reference to county registry of deeds book and page numbers, listing the owner at the time. There is no information referencing town assessors map plot and lot numbers. Because the maps had never been converted to digital form, complying with the Deed Restriction Program can be challenging for both the property owner and municipal conservation commissions.

An important nuance of the Wetland Restriction Program is that the boundary of the wetland resource feature is not based on current definitions of those features, but the boundary of the feature delineated on a map recorded in a plan book at the deeds office at the time. This is especially important to recognize in beach and dune areas, where the mapped restricted activity area may be broader than the salt marsh area.

In Buzzards Bay, some or all of the coastal wetlands in 6 out of 10 coastal towns have been restricted, but significant inland wetlands have been restricted in only one community in the drainage basin. This program, which was originally intended to be the cornerstone of wetlands protection in Massachusetts, has fallen short of its goal because of the high implementation cost.

The following Buzzards Bay watershed municipalities have Wetland Restriction Act Deed Restrictions:

Bourne, Falmouth, Marion, Plymouth, Wareham, and Westport.

### **Wetland Conservancy and Wetland Loss Programs**

In contrast to the Wetlands Restriction Program, the subsequent Wetlands Conservancy Program on the other hand was meant to primarily map and track the core wetlands 1/4 acre or larger in the state that could be identified on aerial photographs. The Department of Environmental Protection's Wetlands Conservancy Program, which evolved from the work of the Wetland Restriction Program, is an ongoing effort to map the state's core wetlands using aerial photography and photo interpretation to delineate wetland boundaries. The program produces maps identifying wetlands that are one quarter acre or larger. DEP uses these maps to document the extent and condition of the state's wetlands and to improve coordination among regulatory programs on wetland and water quality issues.

Wetland delineations developed in this inventory are photo interpreted and do not substitute for the delineation information required under the wetland regulations. The photo interpretation method is particularly weak in lower, flat slope wetlands in glacial till.

The program also is mapping eelgrass beds along the coast. These important wetland resources serve as nursery areas for finfish and shellfish, filter pollutants, and buffer the shoreline from waves. Since these habitats are negatively affected by pollution, they are good indicators of water quality along the coast.

In 2003, the Conservancy Program began systematically analyzing discrepancies between the original wetland mapping performed in 1993 and updated aerial photos from 2001 (Figure 71 and Table 26). In 2003, DEP announced that it would be using this approach in a systematic way to pursue criminal violations of the state's Wetland Protection Act. This effort evolved into DEP's Wetland Loss Program. This program has continued its investigations on larger illegal alterations around the state, and the agency has prepared maps of wetland alterations for each municipality.

The wetland change maps were created in an automated way, using computer software to document changes in mapped wetland coverage. It is important to recognize not all alterations identified by the DEP study are illegal activities. Some wetland loss was the result of legal actions sanctioned by state and local permits. Some of the mapped wetland losses were artifacts of human error of interpretation, or minor errors in the mapping of wetland boundaries. Other losses, however, will likely be the result of unpermitted activity, and may result in criminal prosecutions by state or federal agencies. Table 27 shows a summary of wetland loss sites and acreage in Buzzards Bay municipalities based on evaluations of aerial photographs.

The process of documenting wetland loss using aerial photographs will omit most wetland losses less than 4,000 square feet. Thus, the Conservancy Program’s surveys do not include the many smaller incremental wetland infringements that may be occurring in the watershed that could cumulatively account for additional undocumented wetland losses.

Under state law, there is a two-year statute of limitation for violation of the Wetlands Protection Act. However, in the case of filled wetlands, every day the fill remains represents a new violation. Thus, decades old fill areas may see enforcement action. Enforcement of filled wetlands can be taken based on aerial photographs and field evidence to actions as earlier as 1990 (the date of key changes in the state wetland regulations).

While DEP and the U.S. Army Corps of Engineers are taking action against the largest violators, it is left to local conservation commissions to take action against smaller violators. Not all conservation commissions are dedicating staff time and resources to address this problem. Both The Buzzards Bay Coalition and Buzzards Bay NEP provided additional supporting information about the losses’ at specific site. To date there has been no systematic evaluation of town actions to address these cases.

**Local Implementation of the WPA**

In 2012, conservation commissions in Buzzards Bay communities processed approximately 1458 permits and actions filed under the WPA (Table 27, sum of orders, restrictions, NOIs, etc.). The communities also issued 24 enforcement orders. Ten watershed towns (Dartmouth, Falmouth, Bourne, Wareham, New Bedford, Middleborough, Acushnet, Rochester, Carver, and Plymouth) have full-time conservation agents, and Fairhaven, Mattapoisett, and Westport have part time agents. Only the Town of Marion has no agent at all. Eight Buzzards Bay communities (Falmouth, Bourne, Wareham, Dartmouth, Carver, Plymouth, Rochester, and Fairhaven) have adopted non-zoning wetlands bylaws to supplement the Wetlands Protection Act. Falmouth, Bourne, and Dartmouth have also adopted regulations to define further their bylaws.

Local bylaws and regulations are valuable for addressing the inadequacies of the WPA regulations. For example, before the state laws and regulations were revised in 1997, a number of towns adopted a fee-system to enable the town to pay for professional staff, or expert advice to evaluate complex projects. These local bylaws typically expand the number of wetland resource areas and interests that can be protected. However, to be truly effective, these bylaws require enforcement and political support of the executive branch of government (selectmen or mayor) and the logistical support of town counsel. In an attempt to protect wetlands more effectively, conservation commissions in the Buzzards Bay water-

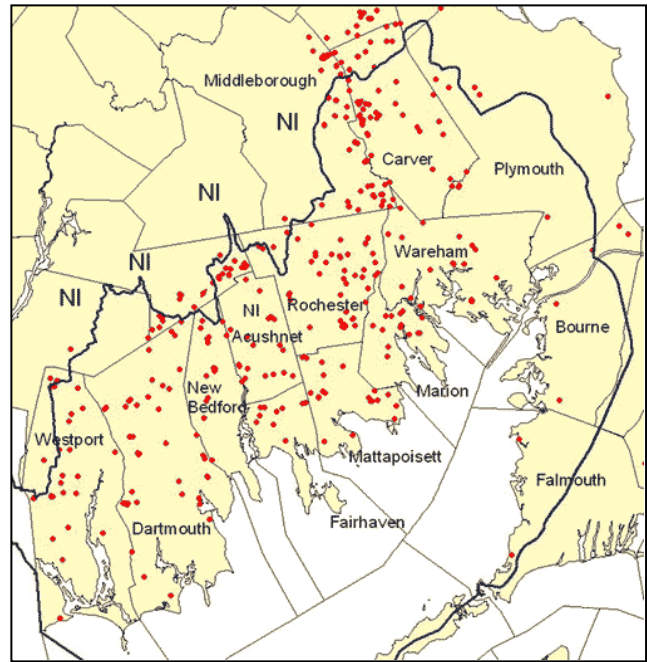


Figure 71. Map and summary sites of wetland loss in the Buzzards Bay watershed.

Table 26. Summary wetland loss sites by town shown in Figure 71.

Town	No. of Sites	Acres Lost
Carver	48	36.4
Middleborough	52	33.7
Rochester	56	26.8
Dartmouth	42	11.5
Mattapoisett	22	11.3
Wareham	18	10.8
New Bedford	14	8.2
Marion	14	6.9
Fairhaven	10	5.2
Westport	28	4.9
Plymouth	15	4.5
Acushnet	20	4.0
Bourne	5	2.4
Falmouth	2	0.2
Gosnold	0	0.0
Total	346	166.8

shed have adopted a wide array of enforcement and implementation tools.



Table 27. Conservation Commission actions, staffing, regulatory framework, and related information in 2011, and permit data for 2012 (unless otherwise indicated).

Municipality (a)	Acushnet 2012	Bourne 2012	Carver 2012	Dartmouth 2012	Fairhaven 2012	Falmouth 2010	Middleborough 2012	Marion 2012	Mattapoisett 2012	New Bedford 2012	Plymouth 2012	Rochester 2012	Wareham 2012	Westport 2012
Town Bylaw/City Ordinance	No	Yes	Yes	Yes	Yes	Yes	no(e)	No	No	Yes	Yes	Yes	Yes	No
Town Regulations	No	Dock Regs.	No	Yes	No	Yes	No	No	No	No	Yes	No	No	No
No Build Setback, (# feet Bylaw or Policy (d))	Policy – 25 ft	50 ft. Bylaw	65 ft. Bylaw	No	No	25-100ft Bylaw(b)	No	30 ft. Policy	No	25 ft. Policy	35-50 ft Bylaw(b)	25 ft. Policy	30 ft residential 50 ft commercial	25 ft. Policy
Abutter Notification on RDAs	NP	NP	No	NP	Yes	NP	No	No	Yes	Yes	Yes	No	Yes	No
Non-criminal citation under local bylaw	No	Yes	Yes	Yes	No	Yes	No	No	No	Yes	Yes	Yes	Yes	No
Local storm-water regs.	Planning Board Ordinance	No	Yes – Board of Health	No	Planning Board	Yes	No	No	No	NP	No	No	No	No
Isolated Wetlands	No	Yes	Yes	No	Yes	Yes	No	No	No	No	Yes	Yes	Yes	No
Bylaws further limit "Limited Project"	No	NP	NP	NP	No	NP	No	No	No	No	No	No	NP	No
Watersheet Zoning	NA	No	NA	No	No	No	NA	No	No	No	No	NA	No	No
Dock regulations based on Natural Resources	NA	Yes	NA	No	No	Yes	NA	No	No	No	No	NA	Included in Local Wetland By-Law	No
Conservation Agent (FT -fulltime, PT-part-time)	Yes, FT	Yes, FT	Yes, FT	Yes, FT	Yes, PT	Yes, FT	Yes, FT	No	Yes, PT	Yes, FT	Yes, FT	Yes, FT	Yes, FT	Yes,2 PT
Total Staff	1.5	1.5	1.5	2	.25	3	1.5	0.5	1	2	3	1.5	2	1.5
Number of commissioners/ associates	7/0	7/4	6	7/0	7	7	7	5/2	5	5	7	7	7/3	7
Commission members attend site visits	Yes	No	Yes	optional	Yes	Yes	No	Yes	No	Yes	yes	Yes	optional	No
Building Permits, new construction	10	118	445	81	10	49	110	NP	32	82	NP	14	NP	46
Request Determinations of Applicability	6	79	4	32	30	103	12	28	30	26	28	8	37	36
Notices of Intent	13	NP	16	47	24	75	25	21	27	18	35	9	41	49
Orders of Conditions	13	32	21	27(d)	24	NP	25	21	NP	18	35	9	NP	NP
Amended Order of Conditions	0	2	1	NP	5	15	5	2	6	NP	3	1	NP	7
Abbrev. Notices Resource Area Delineation	1	0	4	NP	1	NP	7	0	NP	1	0	0	NP	7
Extended Order of Conditions	0	4	NP	4	4	2	1	5	3	3	NP	1	NP	3
Certif. Compliance	21	14	7	26	12	86	20	16	13	13	NP	6	NP	21
Enforcement orders	0	NP	0	NP	8	3	2	2	NP	8	0	1	NP	NP
# Conservation Restrictions	1	NP	3	1	NP	NP	21	NP	NP	NP	1	0	NP	NP
CR Acres	46	NP	259	16	NP	NP	759.2	NP	NP	0	350	NP	NP	NP
Other Acres Acquired	0	27	NP	15	NP	NP	720	NP	NP	0	328	NP	NP	NP

Information compiled by the Buzzards Bay NEP; permit data for 2012 fiscal or calendar year unless specified. NR= not reported. Notes: (a) Table does not include some types of permits, nor does it include Fall River, because Buzzards Bay watershed portion is mostly protected open space. (b) Actual hard setback varies with resource areas. (c) Under the River Protect Act amendments of the state Wetlands Protection Act, there is a de facto 100 no build setback for the construction of building and septic systems from streams and rivers throughout the Commonwealth. Local bylaws can create no build buffers from bordering vegetated wetlands. Policies can encourage setbacks, but are ultimately unenforceable. Participation in DEP, MACC, or Buzzards Bay NEP wetland training workshops by commission members and staff during the past 5 years was omitted from this table because it does not meaningfully capture weather board members are adequately trained. That is, the necessity of this training depends upon the length of tenure of staff and commission members, and is thus dependent on turnover. (d) Includes order of conditions, amended order of conditions and abbreviated notices resource area delineation.

A good example of a local tool is the use of non-criminal dispositions to levy fines for small violations. This technique is provided for in the bylaws of Fairhaven, Falmouth, and Wareham. Quite simply, the town's enforcement officer (the conservation agent or department of natural resource officer is given the ability to write a citation, much like a parking ticket. The ticket fines can be staggered for a nominal fee (e.g. \$10 for certain minor or first offenses) and escalate in fine value. Citations can be issued for each day of violation. Like parking tickets, wetland enforcement citations can be appealed in district court.

This use of non-criminal citations for minor offenses (like mowing of wetlands adjoining lawns) can be a simpler and less costly mechanism to ensure compliance with a town's wetland bylaw, than the issuance of enforcement orders and paying for attorney fees. If towns adopt this technique, they should keep in mind that the purpose of the citations is to encourage compliance with the law, not to raise revenues for the town.

Other strategies include:

- Confiscation of heavy equipment used in illegal operations (Falmouth).
- Bringing of criminal charges against chronic violators (Falmouth).
- Use of local Department of Natural Resource police to gain access to private property to investigate suspected wetland violations (Falmouth).
- Detailed filing requirements (Bourne, Rochester, Falmouth, Carver).
- Restrictive policy on new dock and pier construction (Bourne, Falmouth, Wareham).
- Designation for sensitive wetlands as Areas of Critical Environmental Concern or as DCPC (Bourne, Falmouth).
- No-build setback (in law or regulations) from wetlands for all structures (Bourne, Carver, Falmouth).
- Recording of enforcement orders on deeds until mitigation activities are satisfactorily accomplished (Rochester).

## **Chapter 91 Waterways Program**

[Chapter 91](#) of the Massachusetts General Laws regulates waterways in Massachusetts and enables the Commonwealth to both protect and promote public use of its tidelands and other waterways. The law was passed in 1866, but the basis of the law originated with the Colonial Ordinances of 1641-1647, and led to what is known today as the "public trust doctrine." This doctrine holds that the air, the sea, and the shore belong not to any one person, but rather to the public at large.

Chapter 91 regulates activities on both coastal and inland waterways, including construction, dredging and filling in tidelands, great ponds and certain rivers and streams. An important component of the law is that the

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## **Local Wetland Protection Efforts**

Municipal conservation commissions are empowered to oversee and implement most of the key components of the state Wetlands Protection Act. It is often stated that conservation commissions are the first line of defense in wetland protection. While this is true, they are not the last word in wetland protection. If an applicant, or abutter, or concerned parties feels a conservation commission is being too strict or lenient in their interpretation of the state Wetlands Protection Act, they can appeal the decisions to DEP. Through the DEP appeals and adjudicatory process, DEP has the last word on what the state laws and regulations mean, and how they should be interpreted.

If the conservation commission or town residents feel the state's minimum level of protection is not adequate, towns are empowered by the Home Rule Amendment to the state constitution to adopt wetland protection bylaws and regulations that are more stringent than the Wetlands Protection Act regulatory requirements.

Some local wetlands bylaws spell out standards like setback distances of construction from wetlands. Other bylaws provide an additional authority to the conservation commission to promulgate regulations without further town meeting approval. When no authority to adopt regulations exist, one strategy is to seek approval at town meeting for regulation adoption on a specific issue, such as docks and piers, setbacks, or abutter notification. An important local regulation need is a mechanism for protecting isolated wetlands, requiring replication at a ratio of at least 2:1, creation of a "no activity zone" of 50 feet, and eliminating some of the state Wetland Regulation "limited projects" allowances.

Commissions should strive for the greatest level of wetlands protection possible under the WPA, including protection of critical habitat areas such as shellfish areas and eelgrass beds. The complexity and magnitude of wetlands protection requires that towns have professional conservation administrators or agents to guide and facilitate the conservation commission's actions. Local wetlands bylaws often include filing and review fees to help defray the costs of technical reviewers on difficult projects, and the passage of a 1983 state law provides this option automatically. Consultant services may include resource area survey and delineation, hydrologic and drainage analysis, impacts on municipal conservation lands, and stormwater management plan review and analysis. Despite this opportunity, some conservation commissions seldom avail themselves of hiring consultants to review large or complex projects.

Wetland regulation have become complex as of result of the combination of science, policy, and law on which they are based. Consequently, towns should require attendance by conservation commission members at Wetland Protection Act training courses. Courses are available from the Massachusetts Association of Conservation Commissions and the Buzzards Bay NEP.

Finally, the Board of Selectmen is crucial to this effort and should appoint conservation commission members who are dedicated to a strict but fair implementation of the WPA. Trying to create a "balance" by appointing members that have no desire to implement the law is a violation of the public trust.

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Commonwealth owns the land below the low water mark, and privately owned land between the high water and low water marks is subject to public rights, namely fishing, fowling, and navigation.

While Chapter 91 is discussed more fully in other action plans, from a wetlands protection point of view, the Chapter 91 program is an important mechanism to address wetland alterations caused by illegal structures. In addition, tidelands that have been filled in, even 100 years ago or more are still subject to the law, and this fact can have important implications for wetland enforcement and wetland alteration projects.

### **Clean Water Act and Federal Wetlands Permits**

The federal Clean Water Act mandates that permits be issued for fill in wetlands (Section 404), for excavation and construction in navigable waters (Section 10), discharges to wetlands and surface waters (section 402), and in the case of discharges (which includes fill), require that the discharge complies with state water quality standards (section 401).

Section 404 of the Clean Water Act is implemented by the Army Corps of Engineers, and regulates discharges of dredged and fill material into wetlands and other waters of the United States. Under Section 10 of the Rivers and Harbors Act, the Corps regulates any excavation or construction in traditionally navigable waters. Section 10 permits often involve the construction of piers.

In Massachusetts, the issuance of NPDES permits lies with the U.S. EPA Region 1 office in Boston. However, Section 401 permits (Water Quality Certificates) are issued by DEP's Division of Water Pollution Control, which must certify that any activities requiring federal permits, e.g. NPDES or Section 404, are consistent with state water quality standards.

Water quality certification enables the state to protect wetlands from a broad range of activities potentially affecting physical and biological integrity of the wetlands in addition to the chemical integrity of the water column. The DEP's Water Quality Certification program was established to ensure that water quality standards are not violated by these activities. The additional requirement of developing water quality standards for wetlands, allows DEP an opportunity to strengthen this program even further.

Each of these programs adds a layer of protection for wetlands and waterways, but they may not be as protective as local and state regulations. On the other hand, if a local permit was issued for a project within wetlands, and the appeal period has lapsed (that is, the project is protected under state law), enforcement action can still be taken if a federal permit was not obtained. Generally, however, federal, state, and local wetland laws are viewed as complimentary permitting pathways. No one jurisdictional level can override the decision of another. Thus, each jurisdictional level has the ability to prohibit

or limit a project, but an approval does not limit the rights of different jurisdictions to further modify, limit, or deny a project. This reality means that projects constructed in wetlands or surface waters are typically designed to meet the most stringent performance standard of any of the jurisdictions issuing a permit.

As a result of the U.S. Supreme Court's 2001 decision in *Solid Waste Agency of Northern Cook County v. United States Army Corps of Engineers*, 531 U.S. 159 ("SWANCC decision"), federal jurisdiction over isolated inland wetlands has been severely limited. Because these wetlands are not identified as resource areas in the state's Wetland Protection Act, and because state jurisdiction for these areas was provided only through the Water Quality Certification process, which was tied to the federal definition of "waters of the United States," the protection of isolated wetlands can now only be achieved by local regulatory efforts.

### **Planning and Preemption**

Managers should not rely too heavily on the wetlands regulatory process as the principal tool to protect wetlands. By their nature, wetlands permits are a piecemeal decision making approach where it is difficult to achieve strategic goals. These wetland protection goals can be achieved more effectively through planning and preemption. Planning involves the identification of sensitive resources and the justification of their significance. It establishes a framework upon which to justify preemption techniques and base permitting decisions. Relevant local plans that can achieve wetland protection goals include development or updates of master plans, open space and recreational plans, watershed management plans, shellfish habitat maps, harbor watershed zoning, dock exclusion zoning, management for Areas of Critical Environmental Concern (ACEC) and for those towns in Barnstable County, District of Critical Planning Concern (DCPC) and local comprehensive plans. Using these plans and strategies, a town can prioritize wetlands for acquisition, or define uses and activities that are least likely to degrade a municipality's most sensitive wetland resources.

Preemption is the foreclosing of opportunities for use of wetlands by not allowing certain activities to be proposed for permitting. Preemption tools include the zoning, conservation restrictions, land acquisition, temporary moratoriums, and, if effectively managed, ACECs (although this program is now considered toothless as implemented). To the greatest practical extent, the plans described above should explicitly identify wetlands and habitat areas that should be the target of preemption strategies.

Many conservationists believe the best way to protect land is to own it. Vigorous municipal land-acquisition programs and the blossoming of the nonprofit land-trust movement in the 1980s have led to the acquisition of

many wetlands through purchase and donation. Ownership by public conservation agencies or private conservation organizations may offer the best preemption situation because these groups have neither the philosophy nor the financial incentive to propose development in or near wetlands. State agencies can support these efforts by allowing land donations or conservation restrictions in lieu of fines in enforcement cases. This approach and related recommendations are addressed in Action Plan 12 Protecting Open Space and Action Plan 9 Protecting Bio-Diversity and Rare and Endangered Species Habitat where there is a fuller discussion of non-regulatory techniques for protecting critical areas. In particular, tax incentives that accrue from various options are listed.

## **Major Issues**

### **Wetland Replication**

In 1983, regulations describing general performance standards for BVWs were adopted to allow the discretionary destruction of up to 5,000 sq ft, if the area is replaced in accordance with seven general conditions. Wetland replication may also be required under other circumstances. Many scientists and managers are concerned with the use of wetlands replication as a routine management tool for two reasons. First, wetlands replication projects have a high failure rate. In New England, it has been estimated that 50% of all replication efforts fail because of inadequate design or maintenance. Second, many functions performed by natural wetlands may not be performed by artificial or replicated wetlands. Although it may be possible to replicate the flood control, sediment trapping, and waterfowl values of some wetlands, scientists have identified at least 75 complex ecological relationships among soils, hydrology, water quality, vegetation, and wildlife, many of which take centuries to develop. Many of these relationships play significant or yet undetermined roles in the protection of the eight wetland interests listed in the WPA or of other interests included in local wetland by-laws. Many wetland replication projects have difficulty recreating even the typical vegetative community of a wetland, much less these other complex relationships that make a natural wetland.

For these reasons, wetland destruction should be avoided except in extreme cases or on projects with an overriding public purpose. When wetland destruction is the last resort, a genuine effort must be made to recapture the lost values of the destroyed wetlands. Given the high failure rate of replicated wetlands, a ratio of replicated wetlands to destroyed wetlands of much greater than 1:1 must be required to achieve a true no net loss.

### **Adequate Local Staffing and Resources**

In the 1991 Buzzards Bay CCMP, inadequate staffing to conservation commissions was an important problem limiting the effectiveness of local conservation commis-

sions. In 1991, most commissions did not have full time agents, today most do (only the Town of Marion does not), but the workload for commissions is very high, and relative staffing levels among communities is very uneven (Table 27).

Irrespective of staff levels, all conservation commissions should adopt a policy of requiring the attendance of at least one commission member on site visits, particularly for any project involving the construction of buildings, roads, or land clearing. Such a policy helps ensure that the commission members are directly engaged in evaluating sites and the potential impacts of proposed projects.

### **Conservation Commission Training**

Local conservation commissions represent the first line of defense for implementing the WPA. Successful protection of wetlands by conservation commissions depends on two factors: a good understanding of wetland laws and regulations, and proficiency on the delineation of wetland boundary, which at both the state and federal level, is based on interpretation of vegetation and soil types.

The WPA and its associated regulations are complex and have a number of areas in which educated judgments and interpretations are required. Since the 1991 Buzzards Bay CCMP, training of both staff and commission members has improved in many communities, but remains problematic in others (Table 27). Moreover, both commission members and staff change frequently, so training must always be an ongoing effort.

Wetland boundary delineation can be difficult in some Buzzards Bay habitats because some vegetation can be found in both wetland and upland conditions. In these areas, interpretation of soils is especially important. An example of a specific technical issue that should be addressed by training relates to wetlands in spodosols. Because spodosols with certain features are a wetland indicator, it is important that commission members and agents have a good understanding of these features.

Currently, training of commission members is not compulsory. Courses are taught by the DEP intermittently, and many commissions are never formally trained to interpret and enforce the provisions of the Act and its regulations. Although "hands on" experience is valuable, it should be supplemented with a comprehensive understanding of the program. Without this understanding, the learning curve is extended and, when combined with the relatively high turnover-rate of commission members, often results in a poorly informed commission that inadequately administers regulations it does not fully understand. Detailed training on how to identify wetlands and soils is thus a critical requirement. Consequently appointing boards (selectmen) should require training for commission members, and they in turn should require training of their staff.

## **Dock and Pier Construction**

Through the WPA, conservation commissions have the authority to review projects on land under the ocean, land under salt ponds, fish runs, and land containing shellfish. This authority can be used to protect valuable marine habitats such as DMF-designated productive shellfish areas, town-designated resource areas, habitat in ACECs, fish runs, and eelgrass beds, by prohibiting or limiting the number of new docks, piers, and their associated dredging activities, as well as reducing or mitigating the impact of approved projects.

In order to reduce the likelihood that a decision by a conservation commission is overturned, commissions should develop, and towns adopt, an explicit management plan regarding the location and construction of projects in the critical habitat areas previously discussed. The plans should clearly define and delineate the sensitive habitats that are being protected, the reason for protecting these areas, the type of projects that harm the habitats, and how the adverse effect is created. Regulations could then be adopted that protect these special areas.

For more on issues relating to the use of regulatory measures to control water-based activities refer to Action Plan 6 Managing Impacts from Boating, Marinas, and Moorings.

## **Buffer Zone Protection and No-build Setbacks**

The 100-ft. so called buffer zone around all coastal and inland wetlands is a jurisdictional area that triggers a regulatory review pursuant to the state wetland regulations. There are no performance standards for these areas other than how the proposed activity will directly affect the wetland resource. Buffer zones are important because they protect the wetland from a wide variety of pollutants and provide valuable wildlife habitat.

A house construction project will be reviewed for construction impacts to an adjacent wetland but not for the subsequent activity associated with the house being occupied. Studies have shown that a 25-foot setback from wetlands is inadequate to prevent future wetland impacts from homeowner activity. A 50-foot setback has appeared to be more effective at protecting wetlands. Towns are permitted to adopt construction setbacks from wetlands, just as they adopt setbacks under local zoning.

The Town of Carver has adopted a 65-foot no structure zone around wetlands under their local bylaw, and Falmouth and Bourne have adopted varying no-touch or no-construction zones that vary from 25 to 50 feet depending upon the resources (Table 27). Some towns have adopted a policy of encouraging applicants to maintain a certain distance setback, but without a local bylaw or regulation in place, such a setback requirement is unenforceable under the state regulations. Municipalities should be explicit in the local bylaws, ordinances, or

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## **Article 97 of the Massachusetts Constitution**

"The people shall have the right to clean air and water, freedom from excessive and unnecessary noise, and the natural, scenic, historic, and esthetic qualities of their environment; and the protection of the people in their right to the conservation, development and utilization of the agricultural, mineral, forest, water, air and other natural resources is hereby declared to be a public purpose. The general court shall have the power to enact legislation necessary or expedient to protect such rights.

In the furtherance of the foregoing powers, the general court shall have the power to provide for the taking, upon payment of just compensation therefore, or for the acquisition by purchase or otherwise, of lands and easements or such other interests therein as may be deemed necessary to accomplish these purposes.

Lands and easements taken or acquired for such purposes shall not be used for other purposes or otherwise disposed of except by laws enacted by a two thirds vote, taken by yeas and nays, of each branch of the general court."

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regulations whether setbacks are "no-build" or "no structure" or if they are "no-work" or "no alteration" areas.

## **River Protection Act Compliance**

The implementation of the 1997 amendments to the Wetland Protection Act, known as the Rivers Protection Act (and the subsequent supporting regulations), have been subject to litigation and caused confusion at the local level. The River Protection Act created a new resource area 200 feet from the riverfront area that, in many respects, was treated like other resources areas such as bordering vegetated wetlands and dunes. This new resource area is not provided with a jurisdictional buffer. For the purposes of the Act, rivers were defined as any stream or brook that flowed year-round<sup>108</sup>. In some respects, the first 100 feet from these rivers are considered no-build zones for structures and septic systems, but the law and regulations provide many exceptions for preexisting and small lots. Because of the various case decisions relating to the River Protection Act, there is a need for a simplified summary of regulations for commission members and the public.

## **Conservation Lands and Article 97 Land Protection**

An important part of wetland protection at the local level involves acquisition by local government of the most important wetland and habitat areas (discussed further in Action Plan 12 Protecting Open Space). Sometimes, land thought to be protected as open space because it is owned by a conservation commission, may not be protected. For example, in 2005, Massachusetts

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<sup>108</sup> Streams indicated by solid blue lines on 7.5-minute scale topographic maps are presumed to conform to this definition.

Supreme Judicial Court<sup>109</sup> found that land acquired for conservation purposes by a town meeting vote, can in fact be disposed of for other purposes, if a conservation restriction (also known as a conservation easement) was never placed on the deed. For these reasons, it is important that conservation commissions review the deed of each property they own (deeds are now available online) to ensure the appropriate conservation or use restrictions are properly recorded as per the intent of town meeting. Sometimes conservation commissions jointly hold conservation restrictions with an area lands trust.

Certain public and private lands may also have other deed restrictions. Many are held in perpetuity, but some deed restrictions expire after 30 years, so mechanisms must be in place to ensure that these deed restrictions are renewed.

Similar to conservation restrictions, certain public lands voted for open space protection at town meeting are considered Article 97 lands. Article 97 of the [Massachusetts Constitution](#) requires that public land acquired for natural resource purposes not be used for other purposes, or otherwise disposed of, without a two-thirds vote of the legislature. To support Article 97 lands, in 1998, EEA (then EOEa) adopted an [Article 97 Disposition Policy](#) to help ensure that state agencies “shall not sell, transfer, lease, relinquish, release, alienate, or change the control or use of any right or interest of the Commonwealth in and to Article 97 land.”

Despite these protections, some Article 97 lands have been converted to other uses. To address this problem, in 2007 an article was introduced in the Massachusetts senate called Public Lands Preservation Act. The bill sought to make it Commonwealth policy to require a legislative approval to change the use or disposition of Article 97 land acquired for natural resource purposes, unless there is no feasible alternative to such a conversion, but only if equivalent replacement land is provided, so there is no net loss.

### **Isolated Vegetated Wetlands (IVWs)**

So-called “Isolated Vegetated Wetlands” (e.g., wetland areas that are not hydrologically connected by some surface channel to a river, stream, estuary, pond, or ocean) are not now recognized as a resource area in the Wetland Regulations. To be recognized under the WPA, wetlands must border a water body, the smallest of which is a 10,000-sq-ft pond, or fit the definition of isolated land subject to flooding, in which case only limited interests may be protected. IVWs contribute to the same

eight interests listed in the WPA, and hence should be protected. The term “isolated” has a different meaning in the WPA than the U.S. ACOE Section 404 program, but the nuances are lost on local conservation commissions and DEP.

A special problem in protecting isolated wetlands is the fact that, if a municipality lacks regulations or by-laws to protect isolated wetlands, their conservation commissions may not require the applicant to identify these wetland areas on site plans submitted for a Notice of Intent wetlands permit application. Consequently, if such a site plan were submitted to DEP for the purposes of determining whether a Water Quality Certificate is needed, DEP would be unaware of the existence of these isolated wetlands, and may incorrectly determine that a Water Quality Certificate is not needed. To solve this problem, conservation commissions should require the applicant to delineate isolated wetlands on wetlands permit site plans.

Some isolated wetlands may be classified as vernal pools, which may offer them some added protection if certified by the state. Nonetheless, it is important that conservation commissions adopt local wetland bylaws or regulations to protect isolated wetlands more effectively.

### **Protection of Endangered Species, Anadromous Fish Habitat**

Anadromous species like alewives (*Alosa pseudoharengus*) and blueback herring (*Alosa aestivalis*) have declined dramatically during the past century in Buzzards Bay. Not only were these fish historically important as a fishery in Buzzards Bay, but they are also important food species for many fish, whales, and coastal birds. The cause of these declines may have been the result of many factors, but degradation of coastal wetlands and water quality may have been important factors. These issues are discussed further in Action Plan 8 Restoring Migratory Fish Passage and Populations.

Buzzards Bay also contains important populations of some endangered and threatened species. For example, Buzzards Bay has the largest colony in North America of the Roseate Tern (*Sterna dougallii*), a federally listed endangered species. Protection and enhancement of these important species requires special efforts to enhance the reproductive success of their populations or to restore their habitat. These efforts, and other needed actions are discussed in Action Plan 9 Protecting Bio-Diversity and Rare and Endangered Species Habitat, and Action Plan 8 Restoring Migratory Fish Passage.

### **USDA Wetlands Reserve Program**

The Wetlands Reserve Program is a voluntary program established by the USDA Natural Resources Conservation Service (NRCS) that offers landowners the opportunity to protect, restore, and enhance wetlands on their property. NRCS provides technical and financial

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<sup>109</sup> Massachusetts Supreme Judicial Court (June 2005 Town of Hanson v. Lindsay) found that land acquired for conservation purposes as stipulated in the Town Meeting Vote, but not subsequently reflected in the deed, can be “disposed” (see summary fact sheet at [caselaw.findlaw.com/ma-supreme-judicial-court/1222292.html](http://caselaw.findlaw.com/ma-supreme-judicial-court/1222292.html)).

support for these efforts, as noted on the [NRCS website](#), NRCS's goal "is to achieve the greatest wetland functions and values, along with optimum wildlife habitat, on every acre enrolled in the program" and offer landowners "an opportunity to establish long-term conservation and wildlife practices and protection." While the USDA accepted applications for federal FY13 funding under the FY08 authorization, future funding will depend on reauthorization of a Farm Bill.

In practical terms, this program allows farmers to sell a permanent conservation easement on unproductive wetland portions of their land, and restore wetlands and permanently protect those areas. The program is especially important for lands owned by cranberry growers because it provides an incentive for the growers to sell off smaller unproductive or underutilized cranberry bogs. Under the rules of the program's original authorization, USDA paid farmers up to \$18,000 per acre for these lands. This amount may change in a future reauthorization and implementation of the program.

While the program primarily targets private lands, some municipalities have participated in the program. In 2006, the Town of Bourne<sup>110</sup> participated in the program. For an abandoned cranberry bog they acquired, they received \$15,000 for a permanent conservation easement on the bog, and over \$60,000 for wetland restoration. As of October 2013, this project was still in the permitting stage for the wetland restoration component. The restoration involved the reestablishment of a herring run and a salt marsh. The Town of Marion undertook two similar initiatives with an abandoned bog they own (Grassi and Goldovitz bogs, awards in 2005 and 2007 respectively). Both the Marion bog restoration projects were completed in October 2013.

## Management Approaches

Most of the action needed to achieve the goals of this action plan relate to improved enforcement of existing regulations, or the need to adopt municipal laws and regulations that supplement the minimum standards imposed by state and federal laws. Improved enforcement and implementation of wetland laws and regulations are addressed principally through better training of municipal staff (conservation agents) and municipal conservation commissions. Wetland regulations are among the most complex that are enforced locally, and there is a steep learning curve in their successful implementation. Because local conservation commissioners are volunteer appointees with little training in wetland science, it is important that state and regional agencies (like the Buzzards Bay NEP) provide training and support to these commissions.

The most challenging aspect of wetland regulations is the accurate delineation of wetland boundaries. Although certified plans submitted to a municipality by an applicant's engineer may accurately show the location of wetland flags and the presumed wetland boundary, the accuracy of the placement of the wetland flags is only as good as the skill of the wetlands biologist that placed them. Because there is no certification of wetland biologists to flag wetlands, and because the boundary of wetlands is defined by complex criteria of soils, species composition, and cover of wetland plants, it is vital that conservation agents and commission members have adequate training in wetland delineation, and review the data sheets provided by applicants. This is especially important in the Buzzards Bay watershed because large areas of the watershed have flat areas that slowly grade from wetland to non-wetland habitat. These wetland areas are appreciably underestimated in maps based on aerial surveys of wetland cover, like those maps produced by the Department of Environmental Protection's (DEP) Wetland Conservancy Program.

Another challenging element of state and local regulations are the state (and any local) requirements to treat stormwater. The review of stormwater designs is often beyond the capability of most conservation commission members and agents. The state has amended the wetland laws to allow conservation commission to hire experts to review plans and pass these costs on to the applicant. Conservation commissions should utilize this provision and hire the necessary consultants. The Buzzards Bay NEP has often provided these services to municipalities at no cost.

The destruction of wetlands is permitted under state regulations, and if wetlands are destroyed, they must be replaced. However, the quality of these wetlands is often poor, and they may not serve the same function of the wetlands they replace, or they may not even remain wetlands. This suggests that wetland restoration should not be conducted at a 1:1 ratio, but at a 2:1 ratio or higher. There must be follow through in monitoring and evaluation of mitigation wetlands to require corrective action if the project fails (e.g. if the mitigation wetlands were constructed at the wrong elevation so that the wetland species did not survive).

With respect to training needs, at the state level, the DEP could address training needs in several ways. First, they could conduct more regular training for DEP employees in BVW delineation, with special emphasis on spodosol soil evaluation (a common soil type in the Buzzards Bay watershed). This training can help ensure consistency in state and local interpretation of wetland boundaries. DEP could also conduct training for DEP employees on the difference between state Wetlands Protection Act definition of "isolated" wetlands and the federal definition of isolated wetlands, which is often a point of confusion at both the state and federal level. The

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<sup>110</sup> As of 2010, municipalities were no longer eligible under the program.

Buzzards Bay NEP or MACC could help provide these training workshops.

Conservation commission members must be more willing to attend training workshops. Because the town officials may have regular full time jobs, such training may need to be taken on weekends. The boards of selectmen that appoint these commissioners should require that conservation commission members attend training workshops on the state Wetlands Protection Act. This training is especially important for new members, but even long serving members can benefit from periodic training courses. In turn, conservation commissions should require their agents to attend an advanced wetland training class at least once annually. Many towns already participate in these training programs. The Buzzards Bay NEP and MACC can assist in providing the necessary training.

Buzzards Bay National Estuary Program can support conservation commissions by providing needed training workshops on wetland delineation and wetland regulation enforcement. Where requested, the Buzzards Bay NEP can assist by reviewing wetland boundaries and by mapping impairments and fills documented in aerial surveys.

Even with adequate training, there will always be the need to have experts review complex elements of projects. Once just a component in local bylaws, the state amended the wetlands laws and regulations to allow conservation commissions to hire experts to review projects, and pass those costs on to the applicant. Where appropriate, conservation commissions utilize these provisions and hire technical consultants to review complex projects, stormwater plans, or other needs.

Conservation commissioners should not rely on conservation commission staff and their recommendations on the issuance of wetland permits. All conservation commissions should adopt a policy requiring that commission member be present on all site visits where there is proposed construction of structures, roads, or clearing of land and RDAs on undeveloped land.

With respect to mitigation problems, DEP should require in its regulations that when wetlands are allowed to be altered or destroyed, restoration and/or replication will be at a ratio of at least 2:1.

With respect to enforcement of the state regulations, the state could be creative in its collection of fines. For example, where appropriate, DEP could allow conservation restrictions, land donations, or fee acquisitions of important wetland wildlife habitat or unique communities in lieu of cash fines for wetland violators.

In terms of restoring past wetland impairments, conservation commissions should review the wetland loss maps prepared by DEP, or the tidal restriction or filled wetland atlases produced by the Buzzards Bay NEP (and available on line.) In this way, when a town DPW consults the conservation commission in advance of road,

drainage, or sewer work, the conservation commission can suggest modifications to the DPW project to address past wetland impairments.

Municipalities should adopt local wetland bylaws or regulations that address local needs. These local regulations should always require notification of abutters for filings of requests for determination under the state Wetland Protection Act. Such a local requirement will minimize the frequency of “negative determinations” issued incorrectly by local conservation commissions when a notice of intent was clearly warranted. Numerous other issues can be addressed with local wetland regulations, like better protection of isolated wetlands, which have limited protection under state and federal laws. The Buzzards Bay NEP has extensive experience in drafting local wetland bylaws and regulations, and should continue to provide this technical assistance to municipalities. Buzzards Bay NEP could help towns draft laws and regulations, and the Buzzards Bay Coalition could assist with outreach and communication to facilitate passage.

Education and improved awareness about local wetland laws and their benefits is often needed. The Buzzards Bay NEP could also produce a basic primer for new conservation commission members to compliment more detailed guides prepared by MACC and DEP. The Buzzards Bay NEP also has prepared informational materials for town meetings, or for the public to explain the importance or purpose of local wetland regulations.

The proper enforcement of wetland laws and regulations is essential. The Buzzards Bay NEP and MACC can provide technical assistance and training to town officials on interpreting and enforcing wetland regulations, especially focusing on technical issues that cause the greatest confusion. For certain projects, the Buzzards Bay NEP could assist in project and design review.

Municipalities should address current weaknesses in the Wetlands Protection Act by adopting local bylaws and regulations to meet local needs. Conservation commissions and boards of selectmen must show leadership in defending the need for these local regulations at town meeting (or before the city council), because these legislative bodies must approve these laws (town bylaws or city ordinances).

Required no-build setbacks is another way to ensure that projects are not likely to affect wetlands, and all Buzzards Bay municipalities should adopt local bylaws to require a minimum setback of 50 feet to wetlands.

To improve compliance with local wetlands laws, towns should use non-criminal citations as a tool for encouraging compliance with local bylaws. This can be a useful tool to supplant enforcement orders for more egregious problems.

Agents and conservation commission members should attend training meetings on how to write decisions and orders of conditions so that the local decisions “stand up in court.” Writing decisions is somewhat of an



art, and requires that the basis of a decision, such as a denial, be clearly articulated with the appropriate justification. This also means that where applicable, denials should be made under the local regulations, but approved under the state regulations.

To ensure that projects are undertaken as approved, it is important that conservation commissions require the recording of plans and wetland boundaries (in addition to the order of conditions) at county deeds offices in their orders of conditions. Technically this is required by law, but unless the conservation commission requires proof of this recording, or collects a fee to record the order themselves, the recording of the order may not occur. Municipalities must always implement a tracking system to ensure that permit orders are recorded.

Protecting wetlands includes proper management of public lands and can include acquiring wetlands and adjoining habitat. Conservation commissions should inventory properties they own and periodically review aerial surveys to determine whether their properties have been subject to any incursions from adjacent properties. Conservation commissions should also review all town owned conservation and open space lands to ensure the appropriate deed restrictions were recorded at the county deeds office to implement town meeting and town board votes.

The conservation commission should work with the municipality's open space committees to identify large wetland systems within their town, and make these properties a priority for acquisition (see Action Plan 12 Protecting Open Space) through Community Preservation Act funds, town meeting articles, or initiative like the USDA Wetlands Reserve Program. Municipalities (selectmen, conservation commissions, land trusts, etc.) should also utilize non-regulatory wetlands protection techniques. These techniques include encouraging or purchasing conservation restrictions and use tax assessment strategies that encourage land to be kept in forest, farmland, and recreational/open space lands ([MGL Chapter 61, 61A, and 61B](#)) and differential taxation policies allowing for open space to be taxed at a rate significantly lower than for residential or commercial property ([MGL Chapter 54](#), Special Act 797 of 1979).

Public agencies owning barrier beaches (principally municipalities, but also the Massachusetts Department of Conservation and Recreation) should develop management plans for barrier beaches. Municipalities can address this problem through coastal and beach committees. These beach management plans should identify beach protection and restoration strategies, public acquisition goals, and site-specific issues to address wetland and habitat protection, and to address issues related to sea level rise and minimizing storm damage impacts.

Education is a vital ingredient in the adoption and implementation of wetland protection and restoration

strategies. Non-governmental groups like the Buzzards Bay Coalition should support town meeting articles in support of local wetland bylaws and wetland setback buffers. The Buzzards Bay Coalition should undertake a public awareness campaign to educate residents about the importance of wetlands and the role of conservation commissions in their community.

Other state policies and laws could enhance these local efforts. For example, the Massachusetts Legislature could pass laws that improve protection of Article 97 lands or laws that create state income tax incentives for lands placed in conservation protection.

## Financial Approaches

The costs of adoption of regulations or better enforcement are modest compared to restoration. Many training courses are available at little or no cost. Other needed actions, like the restoration of wetlands, or the permanent protection of wetlands and habitat will only be achieved through additional government funding. For example, a funding level of \$1 million per year could leverage the protection or restoration of many hundreds of acres annually.

## Monitoring Progress

Most of the elements of this action plan can be addressed through tracking programmatic actions, like the adoption or update of bylaw and regulations. Some actions, like numbers of acres lost, restored, or protected are useful metrics, and are already being tracked by DEP or the Buzzards Bay NEP.

## Related Action Plans

Many Buzzards Bay CCMP action plans contain approaches and solutions that compliment this action plan. This is true in part because land under surface waters are in fact wetlands under state and federal regulations, and this wetland habitat is greatly affected by water quality. The following action plans are particularly relevant to this action plan: Action Plan 8 Restoring Migratory Fish Passage, Action Plan 9 Protecting Bio-Diversity and Rare and Endangered Species Habitat, Action Plan 10 Managing Water Withdrawals to Protect Wetlands, Habitat, and Water Supplies, Action Plan 12 Protecting Open Space, and Action Plan 13 Protecting and Restoring Ponds and Streams.

## References

- Christie, J., and S. Hausmann. 2003. Various state reactions to the SWANCC decision. *Wetlands* 23: 653-662.
- Jackson, S. 1995. Delineating bordering vegetated wetlands under the Massachusetts Wetlands Protection Act. A handbook. DEP. March 1995. 92 pp.