Massachusetts State Wetland Program Summary

Photo Caption: Salt Marsh, Massachusetts

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Massachusetts Information about wetland:

Regulation

Monitoring & Assessment

Water Quality Standards

Voluntary Restoration

Education and Outreach

Integration with Other Programs

Section A. Quick View

Description of Massachusetts' Wetlands

Massachusetts has many types of wetlands, including both coastal and inland wetlands. Massachusetts' coastal wetlands include land under the ocean; coastal beaches; salt marshes; land under salt ponds; land containing shellfish; coastal dunes; coastal banks; banks of or land under the ocean, ponds, streams, rivers, lakes, or creeks that underlie anadromous/catadromous fish runs; rocky intertidal shores; and barrier beaches. Inland wetlands are areas where water is at or just below the surface of the ground. Although these wetlands can appear dry during some seasons, they contain enough water to support certain plants and soils. Inland wetlands include bank, bordering vegetated wetlands, land under water bodies and waterways, land subject to flooding, and riverfront area.

State Definition of Wetlands

The Wetlands Protection Act (MGL 131, s. 40), administered by the Massachusetts Department of Environmental Protection (MassDEP) defines coastal and freshwater wetlands separately. Coastal wetlands are "any bank, marsh, swamp, meadow, flat or other lowland subject to tidal action or coastal storm flowage." Freshwater wetlands are "wet meadows, marshes, swamps, bogs, areas where the groundwater, flowing or standing surface water or ice provide a significant part of the supporting substrate for a plant community for at least five months of the year; emergent and submergent plant communities in inland waters; that portion of any bank which touches any inland waters." Wetland Program regulations (310 CMR 10.00) further define Waters of the Commonwealth as "all waters within the jurisdiction of the Commonwealth, including, without limitation, rivers, streams, lakes, ponds, springs, impoundments, estuaries, wetlands, coastal waters, and ground waters.

Historic Wetland Loss/Gain in Massachusetts

Original Wetland Acreage	Remaining Wetland Acreage	Acreage Lost	% Lost
818,000	588,486	229,514	28%

Wetlands loss has slowed dramatically in the Commonwealth. From 2001 to 2005, MassDEP identified a total loss of 610 acres, or an average 152.5 acres of wetland each year. From 2005 through 2009, the Commonwealth lost a total of 135 acres or an average 33.7 acres per year. Over these two time periods, the average annual loss of wetlands declined by mprovement of 77.9 percent. Moreover, the percentage of these losses that were planned and conditioned in permits has increased, while wetlands lost to illegal activity has declined substantially. For those losses that have occurred illegally, MassDEP has taken steps to mitigate the consequences. The state has extensive field-verified maps.

No Net Loss Goal

The state has adopted an overall no net loss goal.

Primary State Wetlands Web Page

http://www.mass.gov/eea/agencies/massdep/water/watersheds/wetlands-protection.html

State Wetland Program Plan

Massachusetts has a *State Wetland Program Plan* (2013-2017), which can be found at:
http://water.epa.gov/type/wetlands/upload/ma_wpp_and_transmittal_letter.pdf

Additionally, Massachusetts has a *Wetlands Summary and Workplan:*
http://www.mass.gov/eea/docs/dep/water/priorities/wet12.pdf

State Resources for Wetland Work

State Wetland Management Program Area	Regulatory	Monitoring and Assessment	Wetland Water Quality Standards	Voluntary Restoration
Agency	MassDEP: Boston Headquarters and four regional offices.	MassDEP	Undifferentiated	Dept. of Fish & Game Division of Ecological Restoration
Source(s)	DEP Wetland Permitting Fees, General Funds	Federal Grants	General Funds	Federal Grants, state grant, general funds, ILF
Amount	Information unavailable	Information unavailable	Information unavailable	Information unavailable
Staffing	39 FTE	"03" Consultant	Information unavailable	7 FTE dedicated to wetland / river restoration
Agency		Coastal Zone Management		

Source(s)		Information unavailable		
Amount		Information unavailable		
Staffing		~1 FTE		
Agency		WPD		
Source(s)		Information unavailable		
Amount		Information unavailable		
Staffing		0.5 FTE FTE		

State Permitting Fees	_X__YES	___ NO
Amount:	$110-$9,830	
Agency:	Massachusetts Department of Environmental Protection	

Innovative Features:

- Mass DEP (with UMass Amherst, and the MA Office of Coastal Zone Management) developed a fully empirically-based method for developing Indices of Biological Integrity (IBI) that does not rely on expert opinion or the arbitrary designation of reference sites and has piloted its application in forested wetlands and coastal salt marshes in the state: *Massachusetts.Empirically Derived Indices of Biotic Integrity for Forested Wetlands, Coastal Salt Marshes and Wadable Freshwater Streams in Massachusetts* (September 2013) - http://www.mass.gov/eea/docs/dep/water/resources/a-thru-m/ibifin.pdf Massachusetts is currently working on a pilot watershed assessment using IBI's and an innovative landscape level model called Comprehensive Assessment and Prioritization System (CAPS) to assess sites in accordance with a continuous Aquatic Life Use Model.

- In the fall of 2002, the MassDEP launched an innovative project to evaluate its wetlands protection efforts over the previous decade utilizing remote sensing. This project, known as the Wetlands Loss Initiative, made use of state wetlands maps produced using aerial photography over the prior eleven years. Using the 2002 DEP Wetlands (1:12,000) datalayer, MassDEP developed a methodology to create a digital database of areas of apparent wetlands alteration occurring between 1990 and 2001. This methodology involved superimposing images from later aerial flyovers over the original wetlands base maps to highlight changes over time. Detected wetland alterations included wetlands subject to clearing, building, or filling. Information is used for assessment, enforcement and deterrent purposes. The project has been successful at deterring illegal wetlands destruction, the project's most important measure of success. http://www.mass.gov/anf/research-and-tech/it-serv-and-support/application-serv/office-of-geographic-information-massgis/datalayers/wetchange.html. The state has been working on building this resource for 25 years.

- Mass DEP and UMass completed a study of wetland restoration success in 2015, which provided insights into some of the challenges in measuring and tracking restoration projects.

Models and Templates:

- High quality, field checked maps
- Wetland Information Resource (WIR) Database and MapView

Section B. Regulatory Approaches

How are Massachusetts' Wetlands Regulated?

The Wetlands Protection Act [Massachusetts General Laws (MGL) Chapter 131, Section 401 protects wetlands and the public interests they serve, including flood control, prevention of pollution and storm damage, and protection of public and private water supplies, groundwater supply, fisheries, land containing shellfish, and wildlife habitat. These public interests are protected by requiring a careful review of proposed work that may alter wetlands or work in 100-foot buffer zones to certain types of wetlands.

The Wetland Protection Act is administered in a decentralized way. While the policies and regulations are promulgated by MassDEP, permits are actually issued by the 351 local conservation commissions. The commissions' volunteer boards comprise three to seven members appointed by the selectmen or city council. In addition to developing regulations and policies, MassDEP provides technical training to commissions. MassDEP also hears appeals of decisions made by commissions.

Additionally, permanent restriction orders have been placed on selected wetlands in over 50 communities under the Inland and Coastal Wetlands Restriction Acts. The restriction orders provide added protection for selected wetlands by prohibiting certain activities in advance of any work being proposed. Finally, over 170 Massachusetts communities have local wetlands protection bylaws in addition to the state and federal laws.

Wetland Delineation

Delineation Guidance	Yes	No	Detail
Use State's own Method	X		"More exacting and stringent than the Corps standard" and includes vegetation, saturation and innundation
Use Corps' 87 Manual and Regional Supplement		X	
Other (Please describe)		X	

Evaluation Methodology

All wetlands are "presumed significant" so there is no need to conduct evaluations or rankings. The state's regulations are structured to take into consideration functions. Additionally, the state's stormwater standards have a built-in evaluation function looking at habitat function.

Exempted Activities

The Wetlands Protection Act exempts those activities undertaken in the course of maintaining, repairing or replacing, but not substantially changing or enlarging, an existing and lawfully located structure or

facility used in the service of the public and used to provide electric, gas, sewer, water, telephone, telegraph and other telecommunication services.

The corresponding Wetland Regulations (310 CMR 10.00) exempt certain minor activities (310 CMR 10.02(2) related to certain residential, utility, and transportation activities, as well as, 310 CMR 10.02(3)(b) related to the maintence of certain stormwater management systems.

Special Provisions for Agriculture and Forestry

Many farming and forestry activities are exempt from regulation under the Wetlands Protection Act. The Wetlands Protection Act exempts "work performed for the normal maintenance or improvement of land in agricultural and aquacultural use" from review. The statute explicitly limits the exemption to normal activities that occur on land currently in agricultural use and does not include activities that would bring new land into agricultural use. In 1991, a Farmland Advisory Committee was established to advise MassDEP on clarifying the limits of the agricultural exemption. A resultant publication: Farming in Wetland Resource Areas - A Guide to Agriculture and the Massachusetts Wetland Protection Act (1996) provides a more detailed discussion on this issue.
http://www.mass.gov/eea/docs/dep/water/laws/a-thru-h/farman.pdf

Penalties and Enforcement

Massachusetts has a two-tiered structure for enforcement of wetlands protections. Local conservation commissions in each city and town are the first line of defense, both for wetlands permitting and for enforcement. MassDEP gets involved in appeals, superseding orders of conditions, complex enforcement cases, and guidance when a local conservation commission seeks enforcement assistance. MassDEP typically handles enforcement cases through the administrative enforcement process and consults with the Attorney General's Office on all cases involving penalties in excess of $40,000. Recent MassDEP Enforcement Initiatives have included:

1.) Use aerial photography to identify areas of historical wetlands change and produce evidence to support enforcement where those alterations were not permitted – the goal being to deter new illegal fill and restore illegally filled wetland resource areas.
2.) Verify success of replication projects is to ensure no net loss of wetlands and to achieve functional wetland mitigation.
3.) Multi-step compliance effort to identify previously permitted projects, determine if the authorized project was ever constructed, evaluate current ownership, and finally determine if the project had expired without receiving a Certificate of Compliance. In those cases where the owner is not responsive, or the site is not in compliance, assessment was made for possible enforcement action.

The Wetland Enforcement Manual: A Guide to Effective Compliance with the Massachusetts Wetlands Protection Act Regulations (2004) – (http://www.mass.gov/eea/docs/dep/water/laws/i-thru-z/wenfman.pdf) explains a range of enforcement options for both local conservation commissions and MassDEP staff.

Permit Tracking

The Wetland Program currently has multiple data systems in place to track permitting, compliance, enforcement, and mitigation efforts. Mass DEP tracks the number of Notice of Intent (NOI) filings reviewed, Superseding Order of Conditions (SOC) issued and 401 certifications issued. Approximately 3-5% of the NOI permits issued by Conservation Commissions are appealed, and MassDEP experts decide on the controversial issues presented in each appeal through the issuance of SOC permit decisions. In addition, 401 Water Quality Certificates are issued for dredge and fill projects.

State General Permit (statewide vs. regional coverage)

Permit Coverage	Yes	No	Detail (Type of Permit)
Regional General Permit		X	
Statewide General Permit	X		The state has a SPGP

Massachusetts has a General Permit (Effective Date: February 4, 2015. The permit can be found at: http://www.mass.gov/eea/docs/dep/water/approvals/year-thru-alpha/m-thru-s/magp-15.pdf

In accordance with the Clean Waters Act, the issuance of the Department of the Army General Permit for Massachusetts, and the associated MassDEP 401 Water Quality Certification, authorizes or requires review and permitting of certain activities with specific limitations and conditions. The Massachusetts 401 Water Quality Certification can be found at: http://www.mass.gov/eea/docs/dep/water/approvals/year-thru-alpha/06-thru-d/401gp-15.pdf

Assumption of 404 Powers

Assumption Status	Yes	No	Detail
Assumed		X	
Applying for Assumption		X	
Explored Assumption		X	

Joint Permitting

Massachusetts has joint wetland permit processing procedures for Category One §401 projects only with the US Army Corps of Engineers.

Special Area Management Plans and Advanced Identification Plans

In 2011, completed a study to identify and map vulnerable wetlands in the Upper Charles River communities of Bellingham, Franklin and Milford. Vulnerable wetlands are defined as headwater streams, vernal pools, vernal pool clusters, and critical areas, as defined by the Massachusetts Wetlands Regulations' Stormwater Standards

The study provided technical and planning assistance to protect vulnerable wetlands from stormwater pollution. Vulnerable-wetlands GIS maps were developed for each community that show the location of vulnerable wetlands, relative to developed sites, to identify best stormwater-control options to protect

resources and reduce phosphorus loading to the Charles River. For more information, see: http://www.mass.gov/eea/agencies/massdep/water/watersheds/mapping-vulnerable-wetlands.html

Buffer Protections

Massachusetts	**Yes**	**No**
Buffer Protections	X	

Buffer Protections Description*:* In the Massachusetts Wetlands Protection Act regulations (310 Code of Massachusetts Regulations 10.04) define Buffer Zone as meaning that area of land extending 100 feet horizontally outward from the boundary of banks, wetlands, beaches, dunes, marshes, or swamps bordering on water bodies. Such Bordering Vegetated Wetlands are areas where the soils are saturated or inundated such that they support plants that are adapted to periodically wet conditions(http://www.mass.gov/eea/docs/dep/water/laws/a-thru-h/bvwmanua.pdf). There are a lot of minor activities allowed within the buffer zone.

Recent amendments to wetland regulations pertaining to Buffer Zones provide allowances for certain minor activities related to transportation and utility maintenance project to occur within wetland Buffer Zones. The current Massachusetts Wetland Program Plan also anticipates future improvements to wetland condition by strengthening buffer zone protection policy based on CAPS assessment of ecological integrity. Massachusetts also has a manual, *Delineating Bordering Vegetated Wetlands under the Massachusetts Wetland Protection Act* (http://www.mass.gov/eea/docs/dep/water/laws/a-thru-h/bvwmanua.pdf). Finally the state has a manual to assist landowners with the creation, restoration and maintenance of vegetated buffers (http://www.mass.gov/eea/docs/dep/water/bufman.pdf).

Mitigation Policy

Massachusetts wetland regulations set forth state mitigation requirements. For projects that are less than 5,000 square feet, compensation must be at the ratio of 1:1. Description of Massachusetts' wetland replication requirements are outlined in the following document: http://www.mass.gov/eea/docs/dep/water/laws/i-thru-z/replicat.pdf

Massachusetts is currently completing a multi-year intensive study of wetland mitigation success which is expected to be available by the summer od 2015. Revisions are expected to be made to state mitigation requirements over the next several years.

Links to Regulatory Documents:

- 301 CMR 10.00: Densely Developed Areas
  http://www.mass.gov/eea/agencies/massdep/water/regulations/301-cmr-10-00-densely-developed-areas.html
  Defines a "densely developed area" under the Rivers Protection Act to protect wetlands in Massachusetts.

- 310 CMR 10.00: Wetlands Protection Act Regulations
  http://www.mass.gov/eea/agencies/massdep/water/regulations/310-cmr-10-00-wetlands-protection-act-regulations.html
  Procedures for issuing licenses and permits under the Wetlands Protection Act.

- 310 CMR 12.00: Adopting Coastal Wetlands Orders
  http://www.mass.gov/eea/agencies/massdep/water/regulations/310-cmr-12-00-adopting-coastal-wetlands-orders.html
  Procedures for issuing activity-restriction orders in coastal wetlands areas.

- 310 CMR 13.00: Adopting Inland Wetlands Orders
  http://www.mass.gov/eea/agencies/massdep/water/regulations/310-cmr-13-00-adopting-inland-wetlands-orders.html
  Procedures for issuing activity-restriction orders in inland wetlands areas.

- 310 CMR 23.00: Renovation of Abandoned Cranberry Bogs
  http://www.mass.gov/eea/agencies/massdep/water/regulations/310-cmr-23-00-renovation-of-abandoned-cranberry-bogs.html
  Establishes a permit process and performance standards for the renovation of eligible abandoned cranberry bogs.

- 310 CMR 1.00: Adjudicatory Proceedings
  http://www.mass.gov/eea/agencies/massdep/water/regulations/310-cmr-1-00-adjudicatory-proceedings.html
  310 CMR 1.00 governs the conduct of adjudicatory appeals and adjudicatory hearings of the Department of Environmental Protection under M.G.L. c. 30A.

- 310 CMR 4.00: Timely Action Schedule and Fee Provisions
  http://www.mass.gov/eea/agencies/massdep/service/regulations/310-cmr-4-00-timely-action-schedule-and-fee-provisions.html. 310 CMR 4.00 governs the fees set for MassDEP-issued permits and approvals, and the timelines for review of submitted permit applications. Effective 8/2013.

Section C. Monitoring and Assessment

Agency Responsible for Wetland Monitoring and Assessment

Mass DEP has a *Comprehensive State Monitoring and Assessment Program for Wetlands in Massachusetts*. Massachusetts follows EPA's suggested three-tiered monitoring program that incorporates landscape assessments through GIS images and photography for Level 1, a Rapid Assessment Methodology (RAM) with limited fieldwork for Level 2, and Intensive Site Assessments for Level 3.

Wetland Monitoring and Assessment Characteristics

Level	None	Level 1	Level 2	Level 3
Massachusetts		X	X	X

Type	None	IBI	Conditional	Functional
Massachusetts		X (Under development)	X (Assess condition)	X Pollution prevention, flood control, water supply protection, protection of fisheries and wildlife, storm damage prevention.

*Don't have a functional assessment but regulations are structured to provide protections for these functions. There are currently no tools separate from state regulations yet.

Frequency	None	Project Specific	Ongoing
Massachusetts		X	X

Description: In March 2006, MassDEP issued the Massachusetts Wildlife Habitat Protection Guidelines for Inland Resource Areas. During the development of the guidance, MassDEP adopted the *Conservation Assessment and Prioritization System* (CAPS) developed by the University of Massachusetts in Amherst (UMass) as the approach to mapping wildlife habitat of potential regional or statewide importance. The CAPS is an objective, dynamic, and flexible computer model designed to evaluate the baseline ecological integrity of lands and waters and to identify and prioritize land for habitat conservation. The results of CAPS are essentially predictions about the ecological condition of an area over time. MassDEP is using CAPS in a number of ways. Through funding from the EPA, the MassDEP Wetlands Program worked with UMass to create maps that identify potentially important wildlife habitat using the CAPS model to determine which areas need more detailed evaluation. CAPS is also the basis for MassDEP's wetland monitoring and assessment strategy.

MassDEP and UMass have been developing a monitoring and assessment strategy for several years now that will provide information about ecological condition for a large number and wide range of wetlands. The strategies will allow us to identify wetlands that do not meet quality standards and that therefore should be the focus of additional protection, remediation or restoration efforts through policy, regulation or outreach. Other goals of the monitoring and assessment program including assessment of wetland condition changes over time, wetland mitigation success, and stream fragmentation and improvement in continuity.

Mapping/Inventory

The Massachusetts Department of Environmental Protection's Wetlands Conservancy Program is mapping the state's wetlands using aerial photography and photointerpretation to delineate wetland boundaries. The Program produces maps identifying wetlands that are one quarter acre or larger in size. 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. 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. This valuable resource information is being shared with communities and other state agencies.

State Wetland Mapping Information Portal

The Massachusetts Department of Environmental Protection's Wetlands Conservancy Program supplies this vital resource information to communities. When the maps for a city or town have been completed, MassDEP makes the maps available for download or on-line viewing via the Massachusetts Office of Geographic Information and also makes the maps available for on-line viewing via the MassDEP website. Commissions have found the maps useful in creating local wetland inventories, cross-checking permit application plans, and assisting in enforcement. The wetland maps also are a valuable planning tool for other municipal boards, planning agencies, landowners, and consultants. (Note: wetland delineations developed in this inventory are photointerpreted and do not substitute for the delineation information required under the wetland regulations.)

Wetland Classification and Assessment

Massachusetts has it own wetland classification system. Additionally, the MassDEP Wetland Mapping Program maps both coastal and inland wetlands. The seven categories of freshwater wetlands include: marsh, deep marsh, open water, shrub swamp, wooded swamp, bog, and cranberry bog. The eight categories of coastal wetlands include: tide flat, beaches, dunes, salt marsh, barrier beach, rocky shore, coastal bank, and open water.

Statewide Monitoring Plan

Massachussetts has been working to develop a comprehensive state wetland monitoring and assessment program. http://www.mass.gov/eea/docs/dep/water/resources/a-thru-m/cap2011.pdf. Although the Massachusetts monitoring and assessment strategy is still under development, pilot monitoring has generally been following the agency's water monitoring 5-year rotating plan. Mass DEP outlines specific monitoring and assessment goals in the state wetland program plan (http://water.epa.gov/type/wetlands/upload/ma_wpp_and_transmittal_letter.pdf).

Overall Wetland Gain and Loss Tracking System

The MassDEP Wetland Information Resources database (WIRe) system electronically tracks resource alteration and replacement areas that are proposed during the permitting process, or that occurs illegally. The disposition of alterations and restoration handled through enforcement actions are tracked in the system. Electronic data is also supplemented by MassDEP staff by entered resource alteration and replacement data for the majority of the Notices of Intent (NOI's) submitted via hard copy.

Mass DEP also tracks wetland change through GIS imagery that is used for analysis and improved enforcement. The agency's Wetlands Loss Mapping Project maps are used to identify those wetlands that have been filled in the state. Mass DEP collects data on the following indicators: Percent of state with wetlands loss data from aerial photogrammetry, acres of wetlands loss per flight, number of Wetlands Loss Polygons, acres of wetlands loss per year, number of wetlands loss enforcement cases, causes of wetlands loss, and disposition of wetlands.

Massachusetts' wetland monitoring and assessment program has the following characteristics:

Level	None	Level 1	Level 2	Level 3
Massachusetts		X	X	X

Type	None	IBI	Condition	Functional
Massachusetts		X	X	Information needed

Frequency	None	Project Specific	Ongoing
Massachusetts			X

National Wetland Condition Assessment (NWCA) Participation

NWCA Study Type	**Yes**	**No**
National Study	X	
State Intensification Study		X

Detail: The state did not do the sampling for NWCA, but participated in other ways.

Section D. Wetland Water Quality Standards

Type	**None**	**Use Existing WQ Standards**	**In Process**	**Adopted**	**Future Direction**
Wetland-specific Designated Uses		**X**			
Narrative criteria in the standards to protect designated wetland uses		**X**			
Numeric criteria in the standards based on wetland type and location to protect the designated uses		**X**			
Anti-degradation		**X**			

policy includes wetlands					

Description:

The Clean Water Act requires states to develop Water Quality Standards for Waters of the United States. In Massachusetts, the primary classification system for water bodies and wetlands centers on the role of those Waters for providing drinking water. In general, water bodies that serve as drinking water supplies, as well as tributaries to those water bodies and associated wetlands, are included in Class A. Other wetlands and water bodies are included in Class B or coastal Classes SA and SB.

Currently the Massachusetts Water Quality Standards include narrative criteria for aquatic life. Although "fish, other aquatic life and wildlife" is included as a designated use in all Classes of wetlands and water bodies the biological condition or quality of those Waters is not currently a consideration in the designation of Class A, B and C Waters. However, a variety of Qualifiers are used to further refine the classification system, some of which ("cold water," "warm water," "aquatic life," and "shellfishing") are relevant for aquatic life use. The state is in the process of thinking about the potential future development of water quality standards.

Section E: Voluntary Restoration and Protection

Types of Wetland Restoration Work Funded by the State:

Type of Work	YES	NO	Description
Fund Wetland Restoration (may include easement agreements)	X		
Private Land Restoration	X		DER partners with private landowners to remove aging dams and restore wetlands such as abandoned cranberry bogs
Public Land Restoration	X		DER restores wetland and riverine habitat on public lands owned by municipalities, the federal government, and the Commonwealth
Technical Assistance	X		DER provides technical assistance to identify projects, determine their feasibility, and guide engineering, design, permitting, and construction
Tax Incentives	X		The state provides a program where towns cam provide an incentive to charge up to 3% on real estate sales, including protecting natural habitat (not weland-specific)
Other		X	

Description: The Massachusetts Department of Fish and Game's Division of Ecological Restoration (DER) leads voluntary wetland restoration efforts for the state of Massachusetts. DER works proactively with landowners, municipalities, federal and state agencies, NGOs, and other partners to restore aquatic ecosystems. DER focuses its work on salt marsh restoration, freshwater wetland restoration, and river restoration. DER and DEP work cooperatively to facilitate these projects, with pre-application coordination providing a vehicle to discuss and resolve technical and regulatory issues. Through these

efforts MassDEP has been active in promoting wetland restoration both in the pre-application and implementation stages of voluntary restoration projects. DER's key accomplishments include:

- Restoration of more than 1,500 acres of wetland, both tidal and non-tidal;
- Opening up more than 150 river miles to migratory and resident fish;
- Raising more than $45 million in non-state funds for river and wetland restoration since its inception in 2009.

Voluntary Wetland Restoration Program Components

Wetland Restoration Efforts	Nothing in the Works	Planning	In Progress	Complete
Program has a set of restoration goals				X
Coordinate with relevant agencies that outline restoration/protection goals and strategies and timeframes			X	
Developed multi-agency body to coordinate restoration/ protection efforts				X
Set restoration goals based on agency objectives and available information			X	

Goals for Restoration Projects

Goal	Yes	No	Description
No Net Loss		X	
Reverse Loss/Net Gain	X		Over 1500 acres of wetlands have been restored
NPS	X		Restored wetlands serve as buffers for NPS pollution
TMDLs	X		Wetland restoration and dam removal projects may address water quality issues on streams with TMDLs
Habitat	X		Wetland and river restoration projects restore habitat for wildlife and aquatic organisms
Coastal Protection	X		Salt marsh restoration projects protect the coastline
Floodwater Protection	X		Dam removal projects increase flood storage in floodplains formerly submerged by the dam
Groundwater	X		Restoration of former cranberry bogs provide for increased filtration of surface water to groundwater
Other (please describe)			

Massachusetts landowner guides/handbooks to assist with voluntary restoration efforts:

MassDEP, DER, and the Massachusetts Executive Office of Energy and Environmental Affairs developed these guidance documents:

- Dam Removal and the Wetland Regulations (2007). This guidance document assists volunteer Conservation Commissions with the process of reviewing dam removal applications under the MA Wetlands Protection Act. http://www.mass.gov/eea/docs/dep/water/resources/a-thru-m/dmpol.pdf
- Dam Removal in Massachusetts: a Basic Guide for Project Proponents (2007). This document provides dam removal project managers with guidance on the technical, funding, and regulatory aspects of dam removal for river restoration. http://www.mass.gov/eea/docs/eea/water/damremoval-guidance.pdf
- Massachusetts DER provides a list of potential restoration sites for voluntary wetland restoration projects.

Section F. Innovative Education and Outreach Efforts

- The MassDEP **Circuit Rider Program** provides quality outreach, training and technical assistance to conservation commissions, other local officials, wetland permit applicants and their consultants, environmental groups, watershed associations and state and federal agency staff. There are three regional circuit riders and a coordinator based in Boston.
- Volunteers collect water quality information as part of the Massachusetts Estuaries Project and learn about problems facing water quality through the project.

Section G. Climate Change and Wetlands

The Massachusetts Wetland Program works on climate change-related issues and projects. The state has been awarded EPA Wetland Program Development Grants for climate change work and updated its regulations to address climate change for coastal floodplains ("land subject to coastal storm flowage"). In 2004 Massachusetts released its Climate Action Plan and in 2008 the State passed the Global Warming Solutions Act (http://www.mass.gov/eea/air-water-climate-change/climate-change/massachusetts-global-warming-solutions-act/), which formalized the plan in regulation. Massachusetts is part of the ten-state Regional Greenhouse Gas Initiative "Reggie." The state has a Climate Change Adaptation Advisory Committee which was formed in 2009 and continues to work on these issues. The committee created a report, published in 2011, which includes a focus on wetland ecosystems, addresses their specific vulnerabilities by wetland type, and identifies strategies to reduce the impacts of climate change on wetlands (http://www.mass.gov/eea/docs/eea/energy/cca/eea-climate-adaptation-chapter4.pdf).

In 2013, the Massachusetts Legislature established a Coastal Erosion Commission (CEC) to investigate and document the levels and impacts of coastal erosion in the Commonwealth. The CEC was charged with developing strategies and recommendations to reduce, minimize, or eliminate the magnitude and frequency of coastal erosion and its adverse impacts on property, infrastructure, public safety, and beaches and dunes. The CEC was also charged with: (1) making a reasonable assessment of coastal

erosion and corresponding appraisal of the financial damage to property, infrastructure and beach and dune resources incurred from 1978 to the present; (2) making a reasonable estimate of the damages likely to occur in the next 10 years under current conditions, regulations and laws; (3) evaluating current rules, regulations and laws governing shoreline management practices; and (4) examining possible changes and cost-effective measures to improve the ability of municipalities and private property owners to reduce or eliminate the impacts of coastal erosion without undue adverse environmental impacts.

A January 2015 draft report presents the work, findings, and recommendations of the CEC. The draft report is currently undergoing public review and comment. The recommendations included: 1. Continue to develop information on coastal processes; 2 improve decision-making to incorporate the costs of coastal erosion on public infrastructure, private property, and natural resources; 3. develop performance standards to direct new development and substantial redevelopment away from high hazard areas; 4. improve the use of sediment resources for beach and dune nourishment and restoration; and 5. Provide shoreline management assistance and outreach.

Because of their particular relevance and applicability, the Commission closely reviewed the reports and recommendations of two Massachusetts-specific initiatives—the 2007 Coastal Hazards Commission (http://www.mass.gov/eea/agencies/czm/program-areas/stormsmart-coasts/coastal-hazards-commission/) and the 2011 Massachusetts Climate Change Adaptation Committee (http://www.mass.gov/eea/waste-mgnt-recycling/air-quality/green-house-gas-and-climate-change/climate-change-adaptation/climate-change-adaptation-report.html).

Section H. Integration Efforts

Entity/Program Area	Yes/No	Description of the Connection
NPDES/Stormwater	YES	Stormwater manual includes information about wetland regulation and protections; wetland regulations include stormwater regulation information
303(d)	YES	But still in development
305(b) Reporting	YES	Reporting on development strategies at this point
TMDL	NO	However, there is ongoing research around wetlands for nitrogen attenuation
Climate Change/Resiliency	YES	Coastal floodplains, adaptation, precipitation frequency and intensity
Land Use Planning/ watershed planning		Watershed-based Massachusetts Water management Act. Collaborate with Watershed Planning Group.
Flood/Hazard Mitigation		
Coastal Work	YES	Wetland preservation is divided between freshwater and coastal wetland management. The two parts coordinate.
Other (Specify)	YES	Natural Heritage Program – rare species and habitat integrated into permitting process; adopted floristic assessment

Section I. ASWM's State Wetland Program Continuum

This graphic represents Massachusetts' state wetland program status for each of EPA's four Core Elements

Continuum Stage		Core Element 1: Regulation	Core Element 2: Monitoring & Assessment	Core Element 3: Wetland Water Quality Standards	Core Element 4: Voluntary Restoration
Mature Stage + Ongoing Improvements	**High**	**X**			**X**
Working on Implementation					
Working on Developing Element			**X**		
Early Stage	**Low**			**X (Have standards that include wetlands, but are not WL-specific)**	

Mass DEP staff indicate that Massachusetts' water quality standards are "protective of wetlands"

Section J. State Wetland Program Contact Information

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Section K. Useful Website Links for Massachusetts

State Government Programs

1. Department of Environmental Protection: Executive Office of Energy and Environmental Affairs
    a) Environmental Protection: Water Resources: Wetlands & Watersheds
    http://www.mass.gov/eea/agencies/massdep/water/watersheds/
        i. The Massachusetts Wetland Program
        http://water.epa.gov/type/wetlands/upload/ma_wpp_and_transmittal_letter.pdf
        ii. Massachusetts Watershed-Based Plan
        http://public.dep.state.ma.us/watershed/
        iii. Wetlands Protection
        http://www.mass.gov/eea/agencies/massdep/water/watersheds/wetlands-protection.html
        iv. Waterways
        http://www.mass.gov/eea/agencies/massdep/water/watersheds/waterways.html
        v. Coastal Resources and Estuaries
        http://www.mass.gov/eea/agencies/massdep/water/watersheds/coastal-resources-and-estuaries.html
        vi. Nonpoint Source Pollution
        http://www.mass.gov/eea/agencies/massdep/water/watersheds/nonpoint-source-pollution.html
        vii. Stormwater
        http://www.mass.gov/eea/agencies/massdep/water/wastewater/stormwater.html
        viii. Water Quality Assessments
        http://www.mass.gov/eea/agencies/massdep/water/watersheds/water-quality-assessments.html
        ix. Wetland Monitoring and Assessment

        http://www.mass.gov/eea/agencies/massdep/water/watersheds/wetlands-protection.html#2

        x. Water Quality Management Program
        http://www.mass.gov/eea/agencies/massdep/water/watersheds/water-quality-monitoring-program.html

xi. Water Resources Policies & Guidance Documents
http://www.mass.gov/eea/agencies/massdep/water/regulations/water-resources-policies-and-guidance-documents.html

xii. Water Resources Regulations & Standards
http://www.mass.gov/eea/agencies/massdep/water/regulations/regulations-and-standards.html

b) Land Use, Habitats and Wildlife
http://www.mass.gov/eea/land-use-habitats/

i. Land Use & Conservation
http://www.mass.gov/eea/land-use-habitats/land-conservation/

ii. Habitats
http://www.mass.gov/eea/land-use-habitats/habitats/

iii. Natural Resource Damages, Assessment, and Restoration
http://www.mass.gov/eea/land-use-habitats/antural-resource-damages/

iv. Wildlife Information
http://www.mass.gov/eea/land-use-habitats/wildlife-info/

v. Invasive Species
http://www.mass.gov/eea/land-use-habitats/invasive-species/

c) Water & Climate Change
http://www.mass.gov/eea/air-water-climate-change/

i. Preserving Water Resources
http://www.mass.gov/eea/air-water-climate-change/preserving-water-resources/

ii. Managing Wastewater & Stormwater
http://www.mass.gov/eea/air-water-climate-change/managing-wastewater/

d) Massachusetts Office of Coastal Zone Management

i. Buzzards Bay National Estuary Program
http://buzzardsbay.org/

ii. StormSmart Coasts: Shoreline Change
http://www.mass.gov/eea/agencies/czm/program-areas/stormsmart-coasts/shoreline-change/

e) Department of Agricultural Resources

i. State Reclamation and Mosquito Control Board
CMMCP Wetland Restoration Program
http://www.cmmcp.org/restoration2.htm

2. Department of Fish and Game: Division of Ecological Restoration

a) Aquatic Habitat Restoration
http://www.mass.gov/eea/agencies/dfg/der/aquatic-habitat-restoration/

i. Wetlands Restoration
http://www.mass.gov/eea/agencies/dfg/der/aquatic-habitat-restoration/wetlands-restoration/

Federal Government Programs

1. USDA Natural Resource Conservation Service
   Wetlands Reserve Program
   http://www.nrcs.usda.gov/wps/portal/nrcs/main/ma/programs/easements/wetlands/

Other Organization Wetland Programs

1. Massachusetts Association of Conservation Commissions

   https://www.maccweb.org/index.html

2. Massachusetts Corporate Wetlands Restoration Partnership
   http://www.cwrp.org/massachusetts.html

UMASS Amherst Wetlands Assessment and Monitoring Program

   http://www.masscaps.org/applications/wetlands-assessment.html

1. Buzzards Bay Coalition
   http://www.savebuzzardsbay.org/
   i. Acushnet Sawmill Restoration Project
      http://www.savebuzzardsbay.org/ProtectBay/WatershedLands/Restore/AcushnetRiver
   ii. Marsh Island Restoration Project
      http://www.savebuzzardsbay.org/ProtectBay/WatershedLands/Restore/MarshIsland
2. Buzzards Bay Action Committee
   http://buzzardsbay.org/bbacinfo.htm