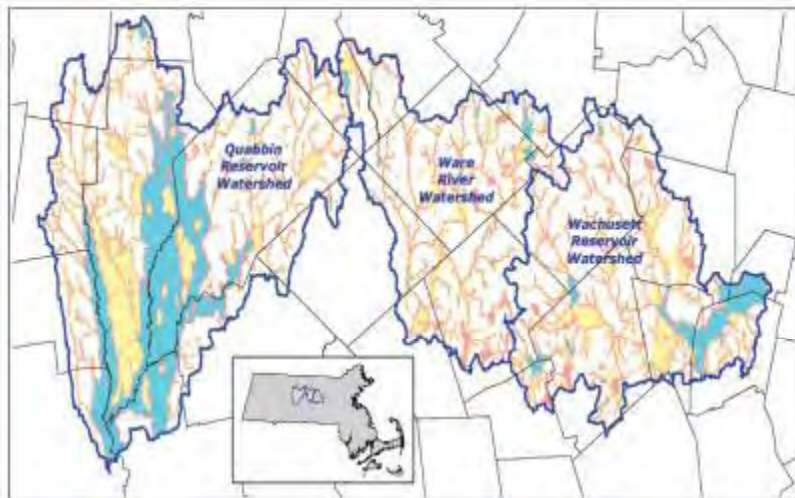


The Watershed Protection Act: Twenty Years of Implementation and DCR Watershed Land Acquisition 2014 Update



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Department of
Conservation and Recreation
Division of Water Supply Protection
Office of Watershed Management

dcr
Massachusetts



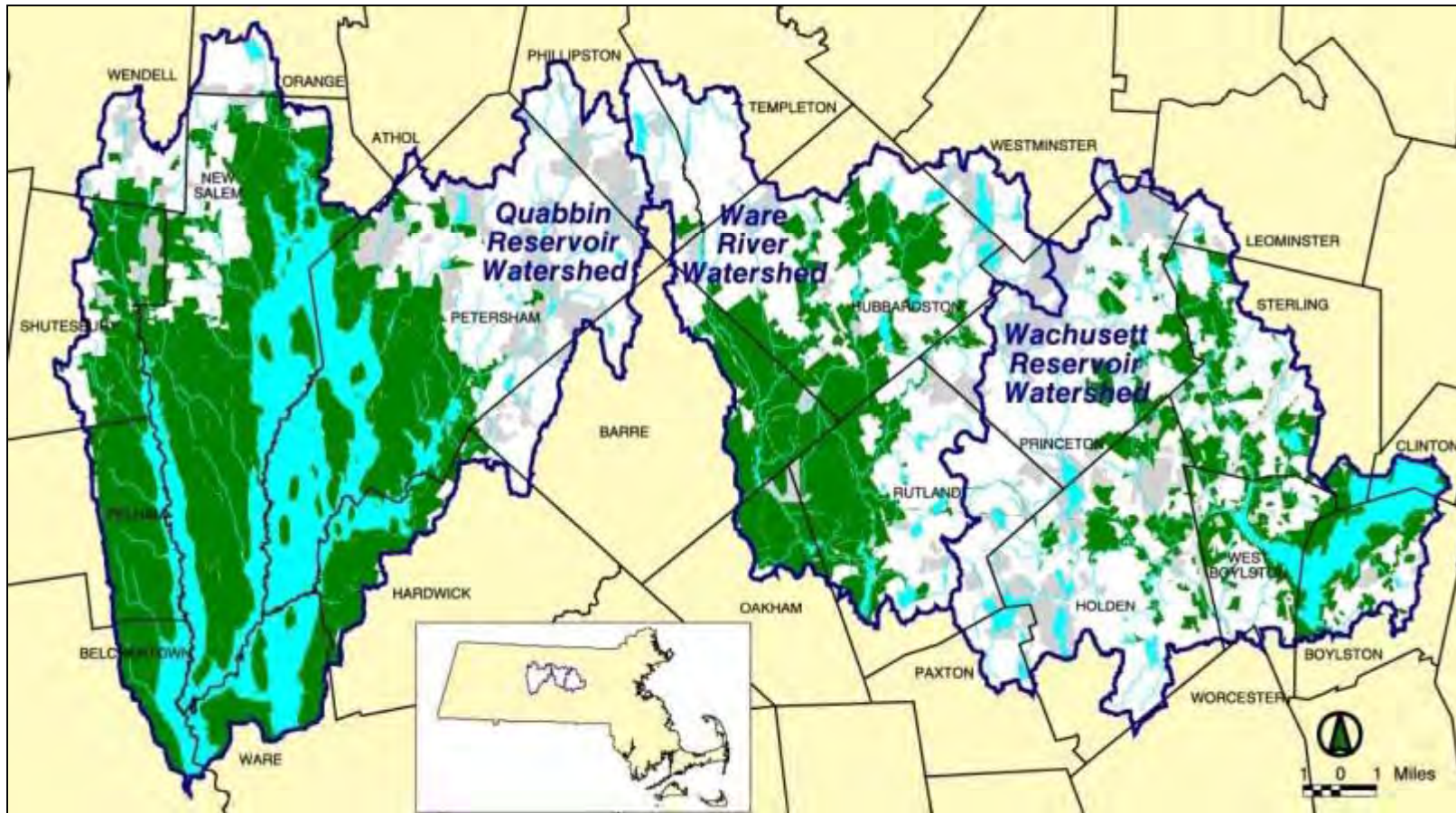
WSCAC

November 6, 2014

Outline

- Watershed Orientation
- The Watershed Protection Act (WsPA)
 - WsPA Nuts and Bolts
 - WsPA Efficacy
 - Tribulations and Trials
 - Technical Assistance
- Land Acquisition
 - Acquisition Numbers
 - Watershed Preservation Restrictions
 - Payments in Lieu of Taxes

DCR/MWRA Watersheds



- History of westward development
- Assorted changes in agencies from 1880s to present
- 1985 creation of MA Water Resources Authority (MWRA)
 - MWRA responsible for treatment and distribution (and funding)
 - State maintained watershed management
- 2004 creation of Department of Conservation and Recreation (DCR)



DCR Source Supply Watersheds

Size

Wachusett Reservoir: 6.5 mi²/65 billion gallons

Quabbin Reservoir: 39.4 mi²/412 billion gallons

Total Watershed Area: 391 mi²

Safe Yield: 300 million gallons/day (mgd)

2014 water system demand average: 206.52 mgd/avg



Protected Lands

DCR owned or controlled through Watershed Preservation Restrictions (acres/% of watershed)

Wachusett:	20,233 acres/28.6%*
Ware:	24,232 acres/39.3%
Quabbin:	55,355 acres/58.0%

Total DCR Protected: 99,452 acres/43.8%

Other Permanently Protected Lands:
32,472 acres/14.2%

*Wachusett % DCR Protected Land in 1992: **7.9%**

Federal Regulations and Response

- 1986 Safe Water Drinking Act brought many issues to forefront
 - Treatment
 - Distribution
 - Source Water Quality
- Filtration or No Filtration
- 1991 Watershed Protection Plans
 - Land Acquisition
 - Septic System/Sewers
 - Land Use Regulations

WSCAC at the Forefront



WSCAC's support was critical for the passage of the Watershed Protection Act.

WsPA Legislation

- Background
 - Originally proposed in 1989 by Rep. David Cohen
 - Passed in May 1992 – Chapter 36 of the Acts of 1992
- Four major elements to the Act
 - A set of land use regulations that limited “Alterations” within 400 feet of the Reservoirs and 200 feet of their tributaries and other land uses between 200 feet and 400 feet of tributaries, over aquifers, and bordering vegetated wetlands.
 - A bond of \$135 million for land acquisition.
 - Promotion of technical assistance to the watershed communities on land use issues.
 - Language that supported additional actions that resulted in the construction of a sewer system in West Boylston and Holden (total cost: \$85-90 million).



WsPA Initial Implementation

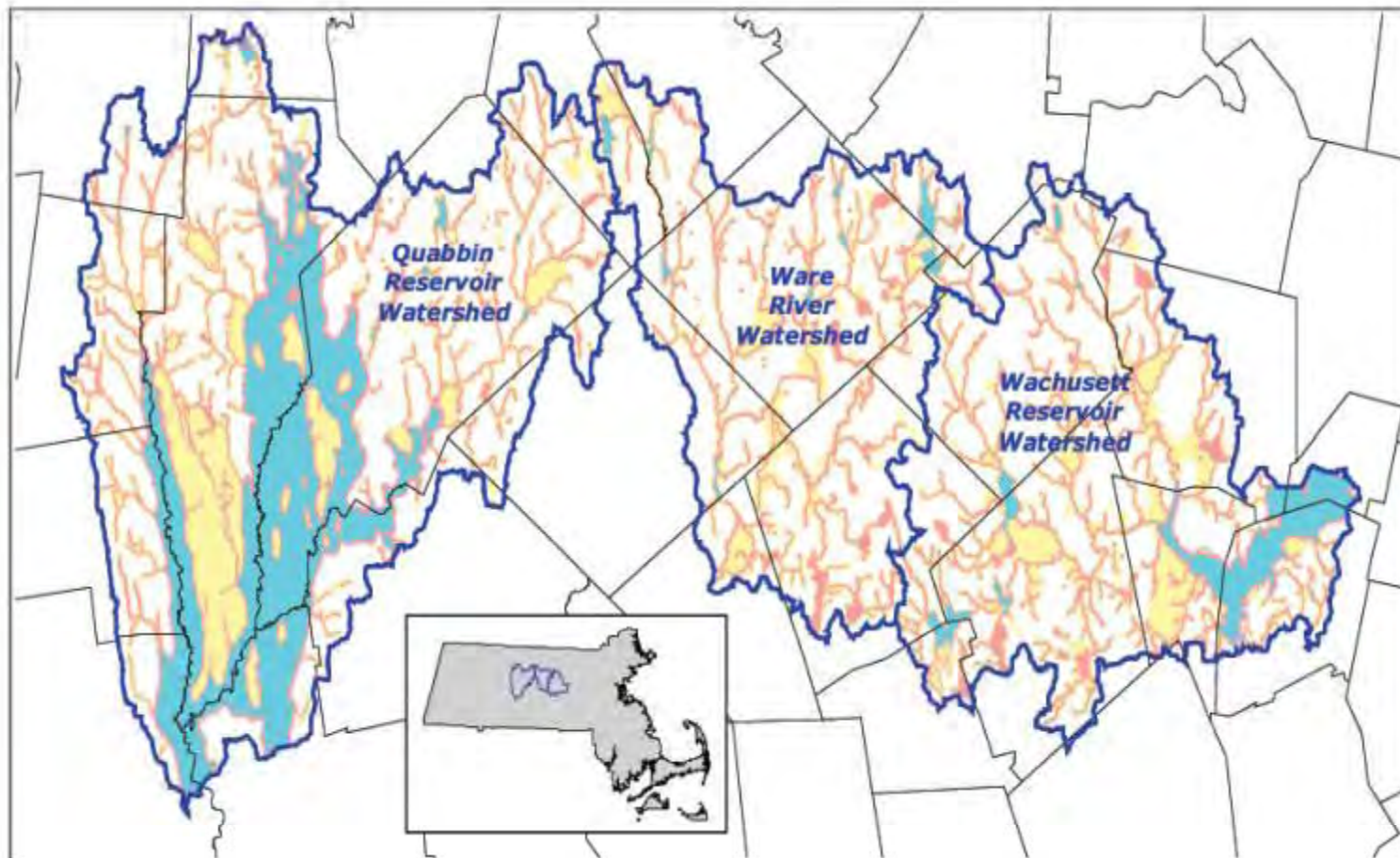
- Staff required to develop maps, regulations, and economic impact analysis
- Informational meetings
- Distribution of Draft Maps and Regulations
- Three Public Hearings

WsPA Regulations

- First land use regulations in country set to digital map information
 - State of the art utilization of GIS
 - Cooperative effort w/MassGIS to digitize data
 - Assessors info (parcel lines and ownership – also needed for economic impact analysis and notification)
 - Hydrology (1:25,000 USGS)
 - Wetlands
 - Aquifers
- Regulations effective Feb 1994 (350 CMR 11)
- Integrated Act and associated Mass General Law (Chapter 92A½) with several other existing watershed regulations



WsPA Regulations

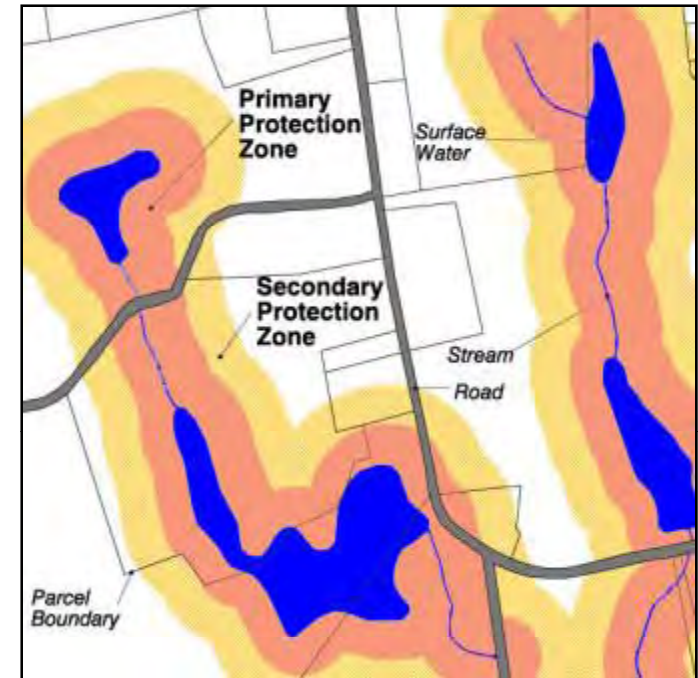


- Towns with affected parcels: 22
- Approximate number of affected parcels: 8,200
- Approximate area regulated: 28,000 acres
(13,000/46% Primary; 15,000/54% Secondary)
- Percent of watersheds regulated: 12%
(8% of Quabbin; 13% of Ware; 17% of Wachusett)

WsPA Protection Zones

Primary Protection Zone

- Land within 400 feet of the Reservoir and 200 feet from the bank of tributaries and surface waters
- ***Alteration is prohibited***
Alteration includes: grading, dumping, filling, changing runoff characteristics, dredging, and any generation, storage, or discharge of pollutants



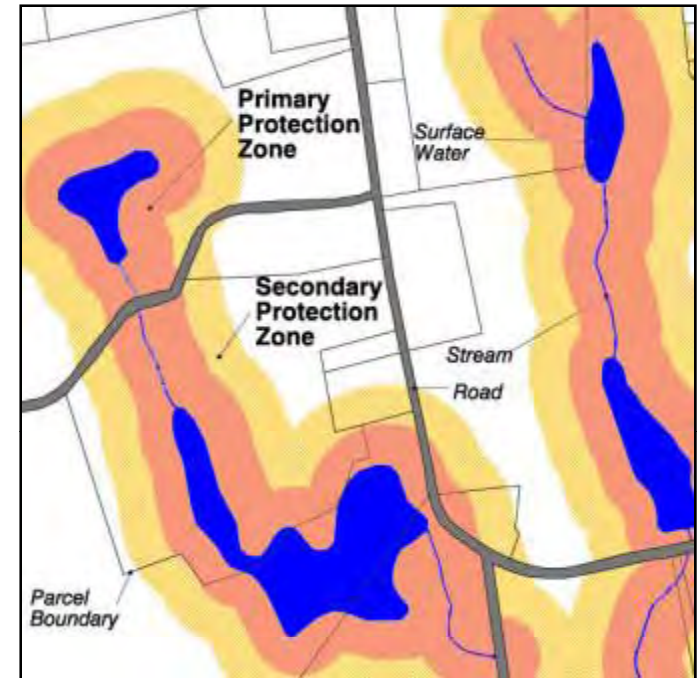
WsPA Protection Zones

Secondary Protection Zone

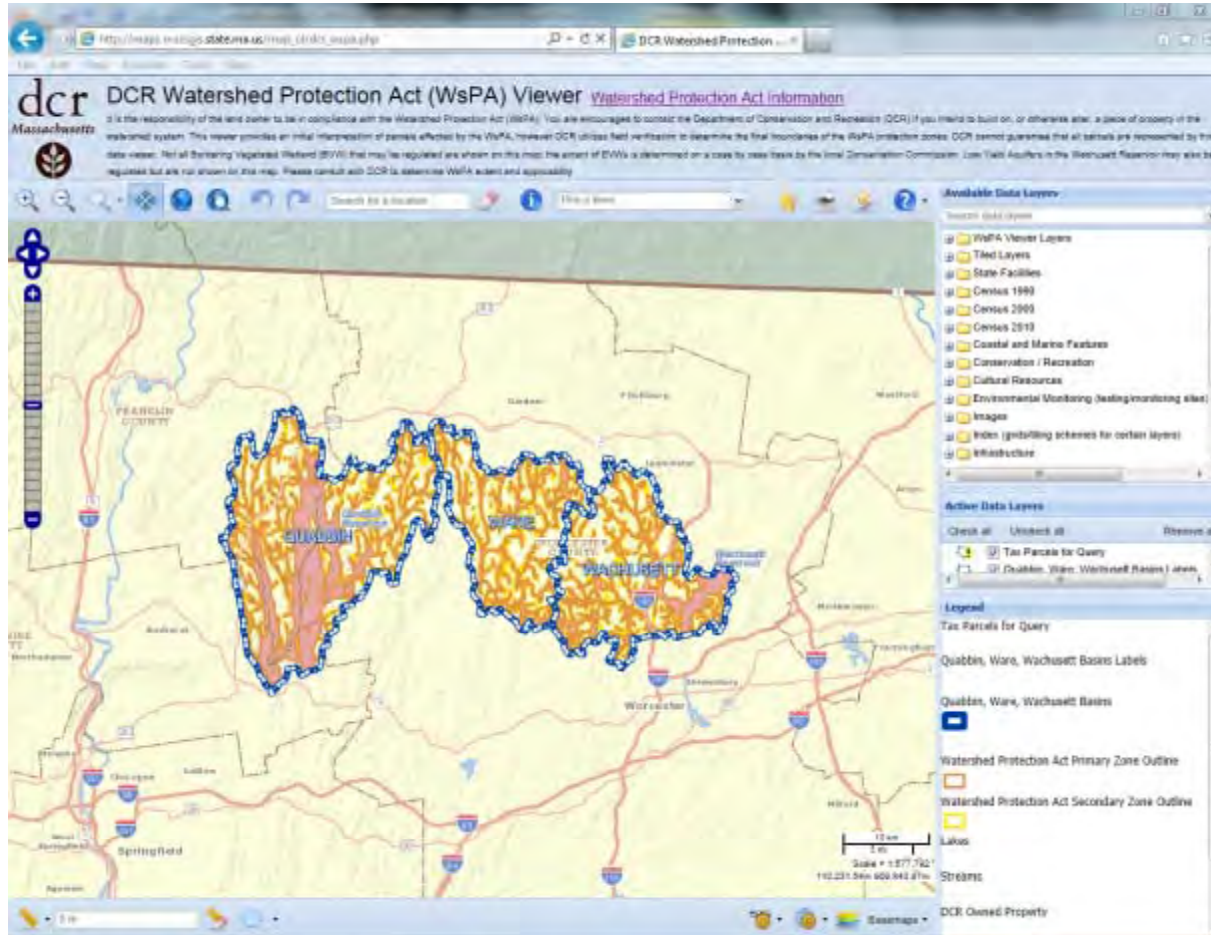
Land between 200 and 400 feet of tributaries and surface waters, land within flood plains, over Wachusett aquifers, and within bordering vegetated wetlands

Certain activities are prohibited or have thresholds:

- Septic Density Limits
- Impervious surface threshold of 10% of regulated area or 2,500 sq. ft.
- Outdoor uncovered storage of manure
- Alteration of Bordering Vegetated Wetlands
- Outdoor storage/use of hazardous materials, petroleum products, hazardous materials except "normal residential use"



MassGIS WsPA Viewer



http://maps.massgis.state.ma.us/map_ol/dcr_wsapa.php



Exemptions and Variances

- Common WsPA Exemptions
 - **Existing Uses:** Uses, structures and facilities lawfully existing as of July 1, 1992
 - **Changes to Structures:** Reconstructions, extensions or physical changes to lawfully existing structures that do not degrade water quality
 - **Home on Existing Lot:** Construction of a single-family dwelling on an existing lot
 - **Single subdivision:** Division of an owner-occupied lot to create one additional lot for a single-family dwelling
- Variances
 - Factors for basing a decision are soil conditions, slope, topography, water quality, and mitigating measures
 - A public hearing is required before a decision is made by the Regional Directors



WsPA Applications

Type of Application <i>[What to Submit]</i>	DCR Response <i>[Form of Response]</i>
Advisory Ruling <i>[Letter from Owner]</i>	Informal indication of whether property is affected, if activity is prohibited, if exemption applies. <i>[Letter from DCR]</i>
Determination of Applicability <i>[WsPA Form 1]</i>	Formal, recordable indication of whether property is affected, if activity is prohibited, if exemption applies (may include water quality finding). <i>[WsPA Form 2]</i>
Variance <i>[WsPA Form 3]</i>	Decision whether physical characteristics allow law to be varied for this project without water quality degradation or harm to public good. <i>[WsPA Form 4]</i>

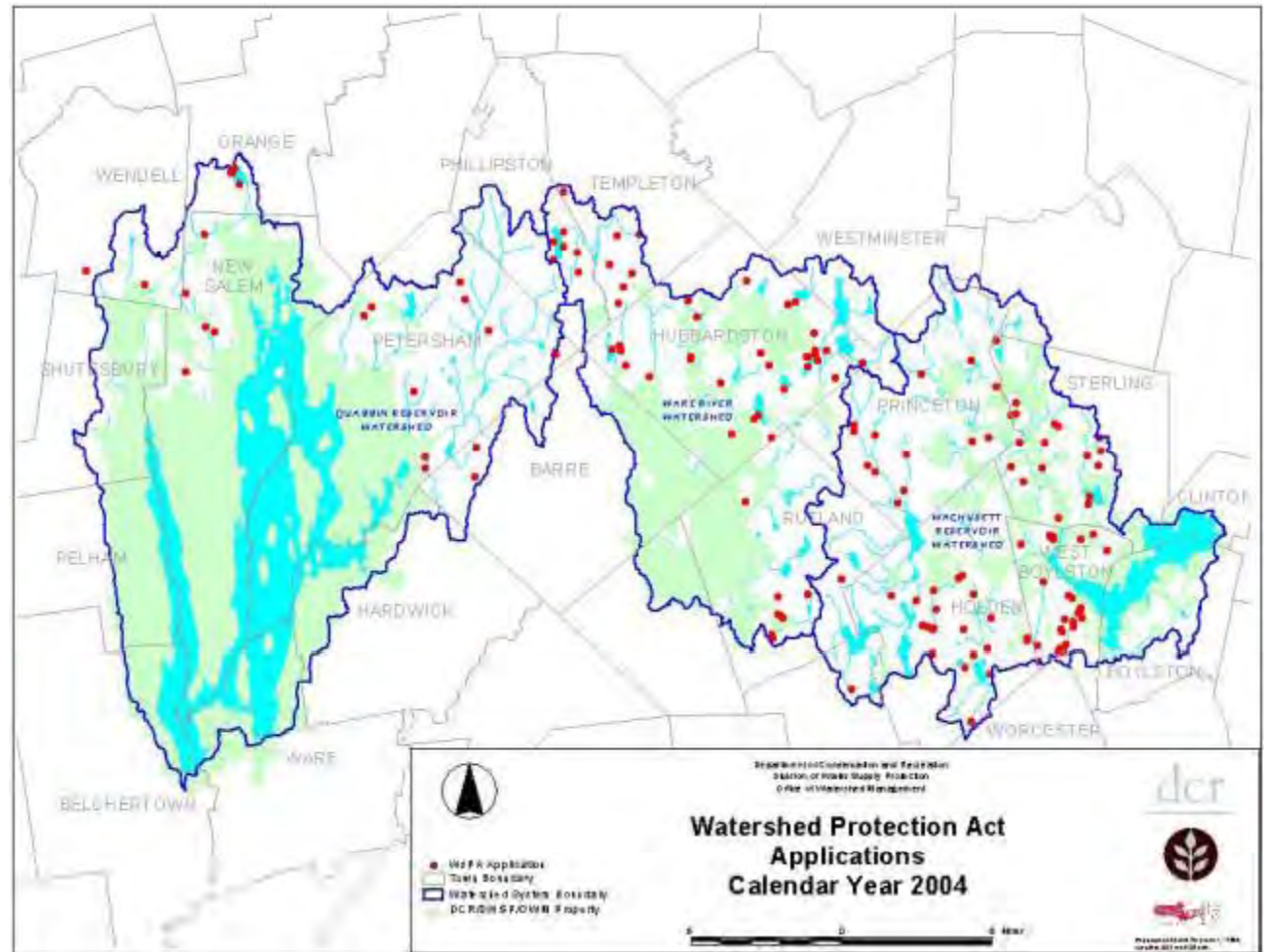
WsPA Applications Over the Years

Wachusett

~ 2,000 applications
62% Advisory Rulings
31% Determinations
7% Variances

Quabbin/Ware

~ 1,500 applications
85% Advisory Rulings
12% Determinations
3% Variances



Peak Year Avgs

Wachusett: 125-150

Quabbin: 100

(mid-late 90s up to real estate bust in early 2000s)

WsPA Working Group

- Implementation relies on staff at Quabbin and Wachusett field offices.
- Staff have been meeting regularly since 1994 as the Watershed Protection Act Working Group (WsPAWG) to provide consistent interpretation and mutual support.
- Over 80% of staff directly working on the WsPA have more than 17 years experience with the regulations.



WsPA In Action

- It has pro-actively limited the water quality impacts of many projects.
- As intended by the legislature, it has not been a barrier to growth in the region.
- The protection status it offers does not reach the scope of DCR fee ownership or a Watershed Preservation Restriction.



WsPA In Action



Examples of single family homes built using the existing lot exemption from the Watershed Protection Act. Area as seen in 1995 (left) and 2005 (right). WsPA Primary Protection Zone shown in red, Secondary Protection Zone in yellow.

WsPA In Action



Example of construction using the WsPA exemption for a new lot created from an owner-occupied piece of property. Area as seen in 2000 (left) and 2005 (right). WsPA Primary Protection Zone shown in red, Secondary Protection Zone in yellow.



WsPA In Action



Location of a WsPA commercial use variance, as seen in 2000. WsPA Primary Protection Zone shown in red, Secondary Protection Zone in yellow.

WsPA In Action



Development in the vicinity of Chaffin Pond in Holden, as seen in 1995, 2000, and 2005 (left to right; WsPA Primary Protection Zone in red and Secondary Protection Zone in yellow).

The Watershed Protection Act required the original plans for the large development that appears in the center of the right photograph to be significantly altered, mitigating the most serious potential water quality impacts. Much of the construction in this area, however, was outside of WsPA jurisdiction. There is a cumulative impact on the water resources from development compared to the more wooded landscape seen in 1995.



WsPA Tics and Quirks

- Regulated areas/buffers tied to digitized hydrology from 1995. Not perfect; requires legislative approval to update.
- Breaks in a wetland (road, culvert, cart path, etc.) end jurisdiction.
- Requires ongoing communication with town officials, especially building inspector, conservation commission, board of health, and planning board.
- Landowner is not required to file an application with DCR – they just have to be in compliance with the law.



WsPA Enforcement

- Attempts made to work with land owner to remediate/solve issue.
- DCR enforcement powers rest with Department of Environmental Protection.
- If there is a significant WsPA violation there are usually other state and federal violations too, particularly Wetlands Protection Act.
- If need be, Attorney General will represent DCR in court.

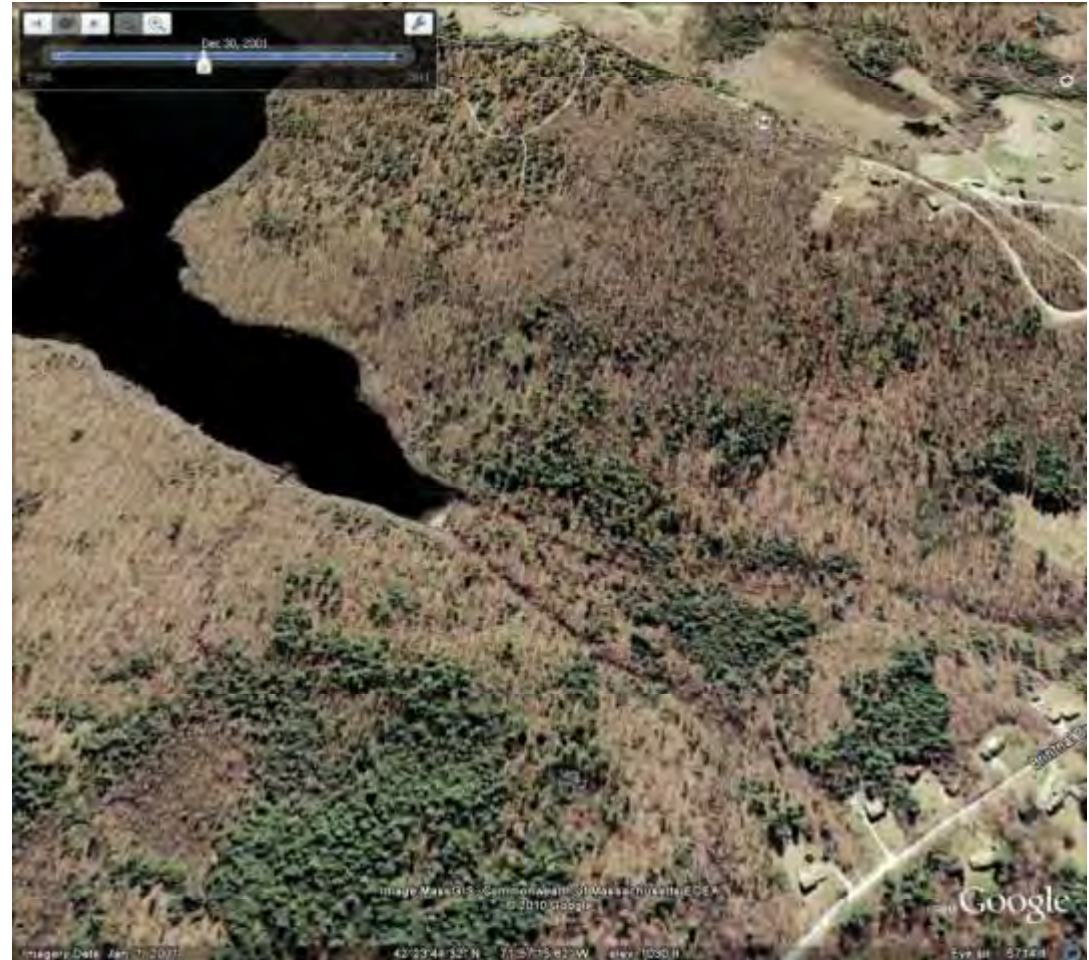


WsPA Enforcement: Bear Hill

DCR has worked with DEP and the Attorney General for close to ten years to control the environmental damages from this construction site in the Ware River watershed.

2004:

Proposed 53 houses on 71 acres on steep hill adjacent to Moulton Pond in Rutland.



2001

WsPA Enforcement: Bear Hill

2005-2006:

Initial application for local (Zoning and Wetlands), state (Watershed Protection Act), and federal (401 Water Quality Certification) permits.



WsPA Protection Zones showing relatively little regulated area.

2005

WsPA Enforcement: Bear Hill

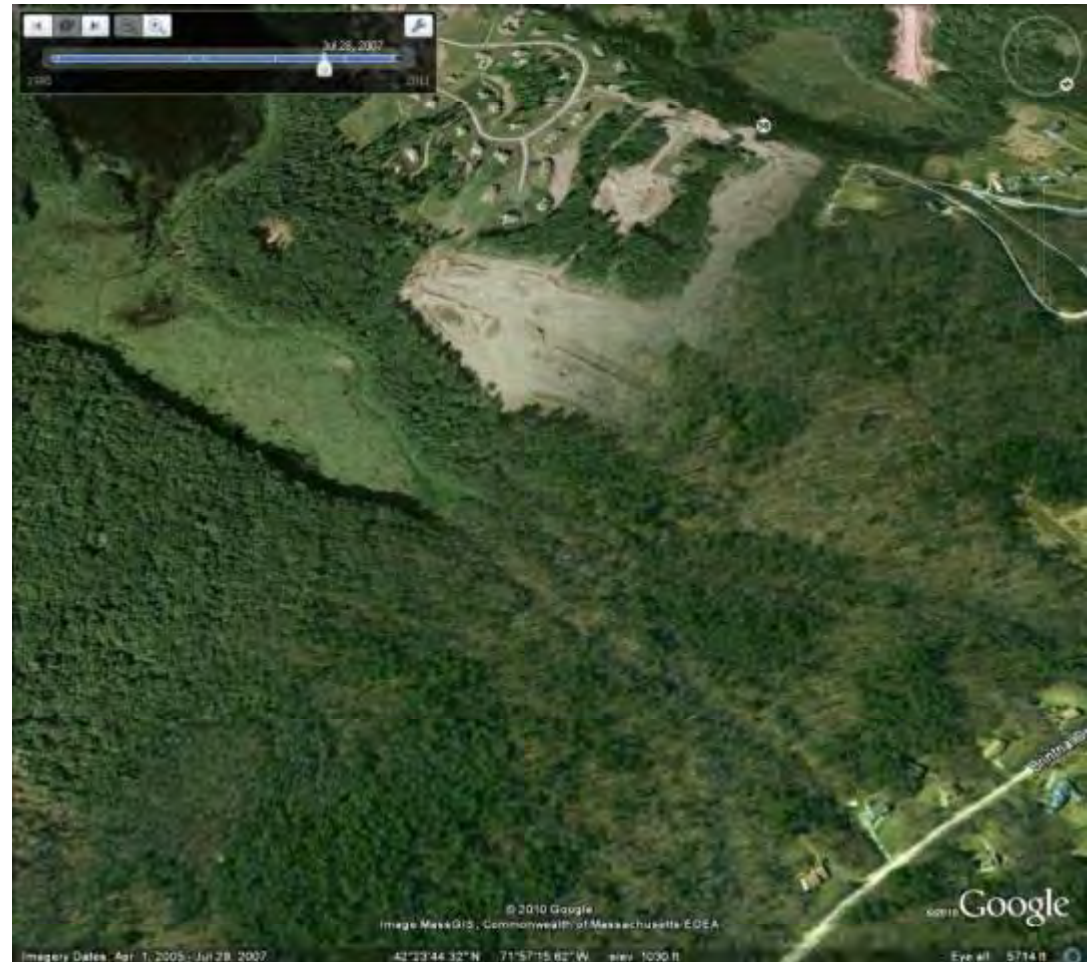
Fall 2006: Construction Begins

- *October – Immediate erosion problems identified by DCR.*
- *November – DEP investigation.*
- *December – Initial state enforcement action.*

2007: Attorney General files complaint after one year of Efforts to stop environmental degradation.



One of the first erosion events, November 2006



2007

WsPA Enforcement: Bear Hill

2008 - 2010: Ongoing Enforcement

- *New permits granted with focus on improved erosion control measures.*
- *WsPA encroachment resolved without court involvement.*
- *Wetland and water quality violations proceed to Superior Court.*



Overwhelmed erosion controls with sediments flowing through wetland to Moulton Pond, November 2008.



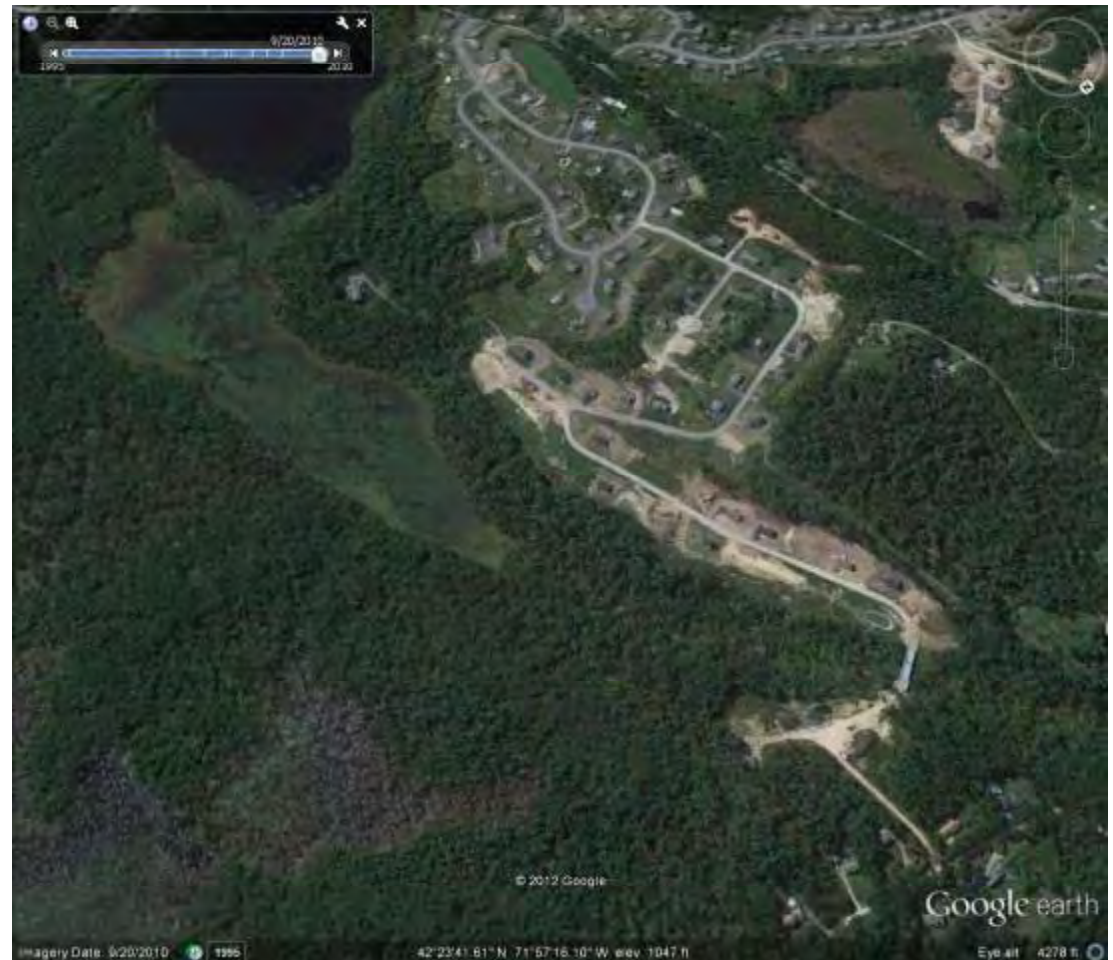
2008

WsPA Enforcement: Bear Hill

2011- 2012:

Builder found guilty of violating both the Watershed Protection Act and the Wetlands Protection Act by MA Superior Court.

- *Monetary penalty of \$193,656, \$125,000 of which was due up front. The remaining amount is suspended pending compliance with the other work.*
- *Court order to repair damages to wetlands and Moulton Pond and implement a soil erosion plan.*
- *Court order for no further violations*
- *Site access for enforcement.*



2010

WsPA Judicial Confirmation

Blair v. MA DCR

2010 Ruling by Supreme Judicial Court (SJC) confirmed lower court rulings that implementation of the Watershed Protection Act does not constitute a taking by either the State or US Constitution.

1977: 2.86 acre property purchased adjacent to Demond Pond with small cabin and 60' beach.

1992: WsPA enacted. This property is affected.

1994: Local approval to build 3BR house.

1997: Extensive alterations in Primary Zone done without WsPA review or approval.



WsPA Judicial Confirmation

1998: Enforcement proceedings initiated for alteration in the Primary Protection Zone

2000: Superior Court ruled in favor of State. Outcome included a court ordered restoration plan.

2004: Appeals Court remanded back to Superior Court as “not ripe” because all procedures had not been pursued.

Variance Application submitted with intent to revert area back to original development landscape.

Variance denied by DCR.



WsPA Judicial Confirmation

2005 - 2009: Court proceedings continue based on plaintiff's arguments that the WsPA is unconstitutional.

2010: Ruling by MA Supreme Judicial Court (SJC) in favor of Watershed Protection Act.

Plaintiff's argument:

- *WsPA is facially invalid under Articles 10 and 49 of the State Constitution.*
The WsPA effectively grants the equivalent of an easement over a portion of the land without compensation.
- *There was a physical or per se taking necessitating compensation under the Fifth Amendment of the United States Constitution.*

SJC Ruling:

- **The Act is not facially invalid.**
- **No easement was created by the Act or by the denial of the variance application, [therefore] no compensation is required under art. 49.**
- **There was no regulatory taking, and no compensation is required.**

Court ruling validated the Watershed Protection Act and also confirmed the basis of many state land use and environmental laws.



Technical Assistance

Section 15 of the Watershed Protection Act:

The division...shall provide a program for technical assistance to communities impacted by this act. Said technical assistance...shall be for planning studies, and zoning bylaw studies, health bylaw studies and subdivision bylaws.

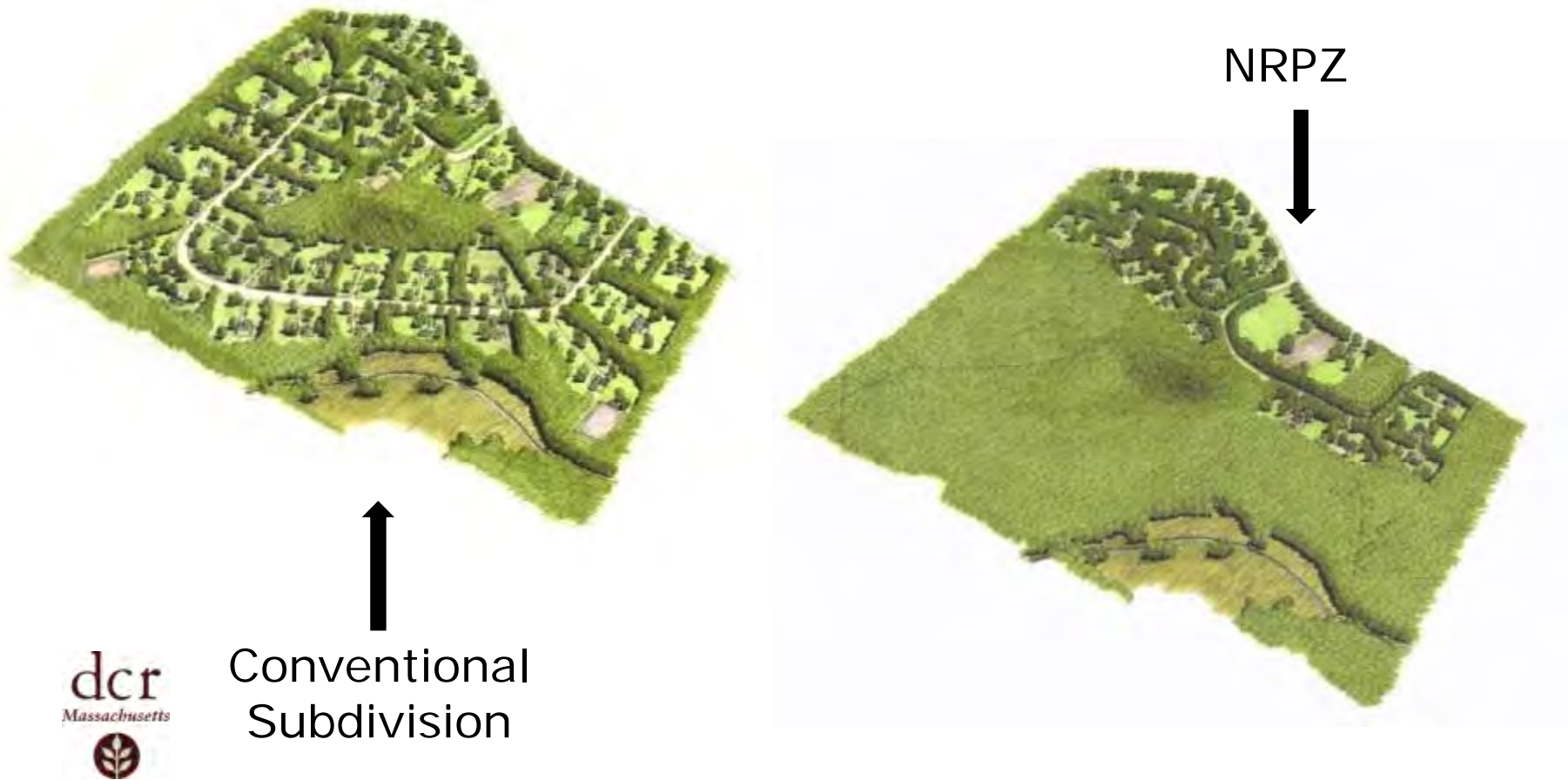
Technical Assistance

- Master Plans
- Recreation Plans
- Open Space Bylaws
- NPDES Stormwater Implementation
- Statewide Zoning Reform
- Staff Support
 - Planning Boards
 - Conservation Commissions
 - Boards of Health
 - Zoning Boards of Appeal

Technical Assistance

Natural Resource Protection Zoning

From DCR Technical Assistance to EEA Statewide Model

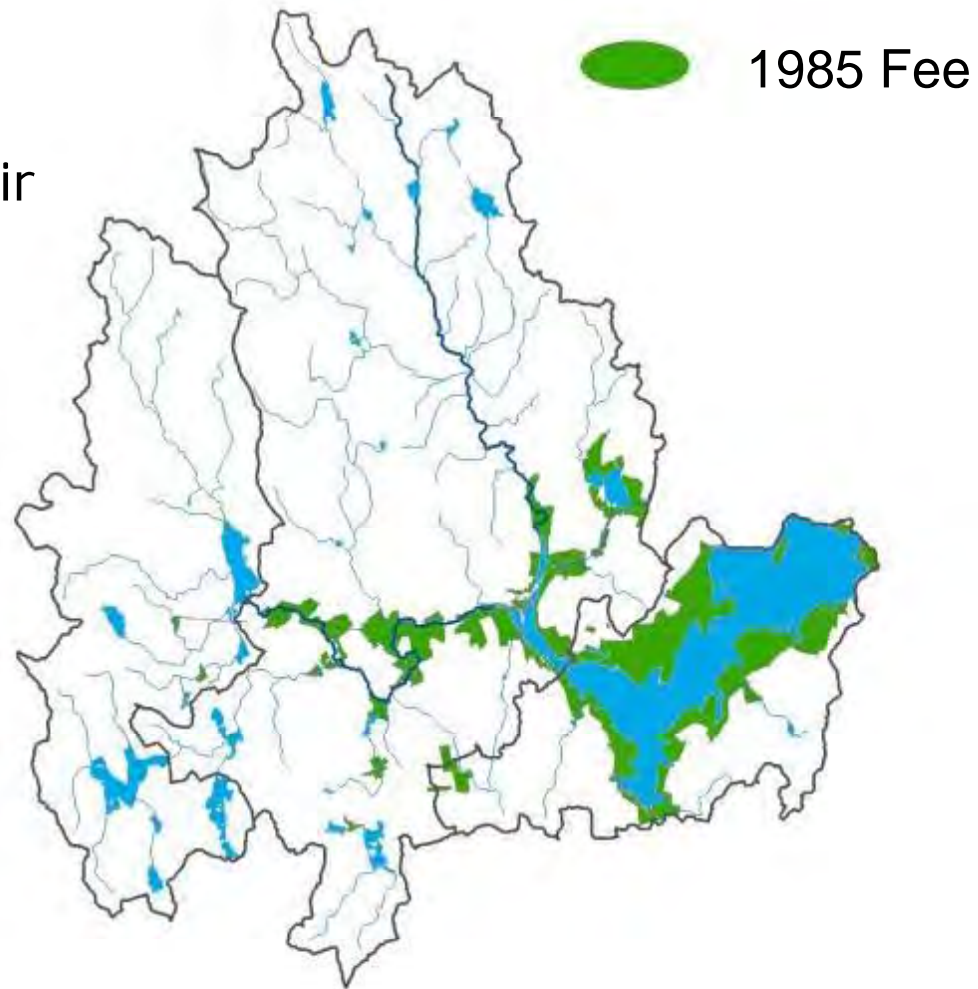


Why Land Acquisition?

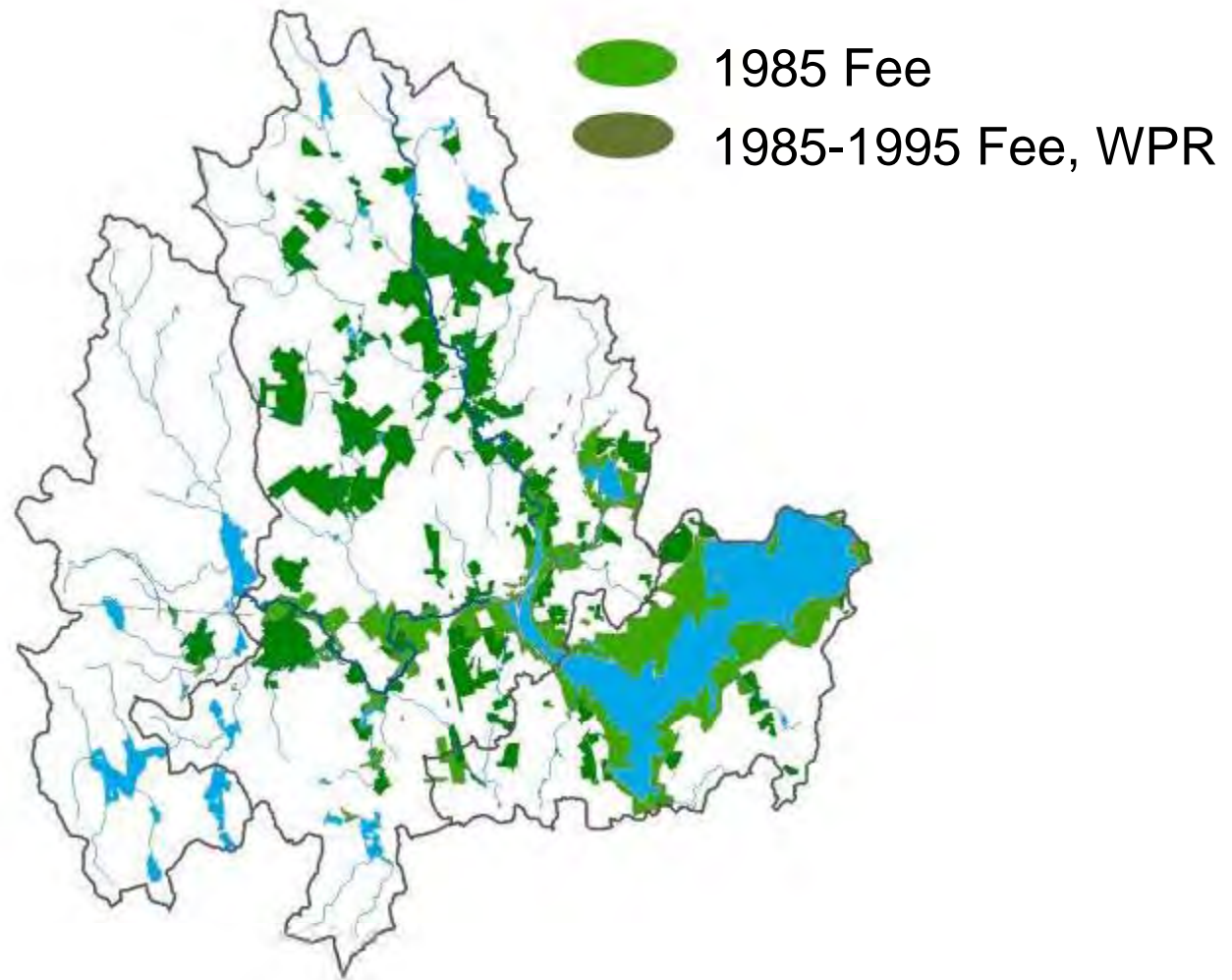
- The management and maintenance of watershed lands in a natural condition is paramount to the continuous supply of pure water.
- The finest drinking waters in the world are a product of the natural filtering processes of a forested landscape.
- The replication of these natural processes using infrastructure-based treatment and filtration is inferior to, and more expensive than, the incomparable benefits derived from watershed land protection.

DWSP Owned Land - 1985

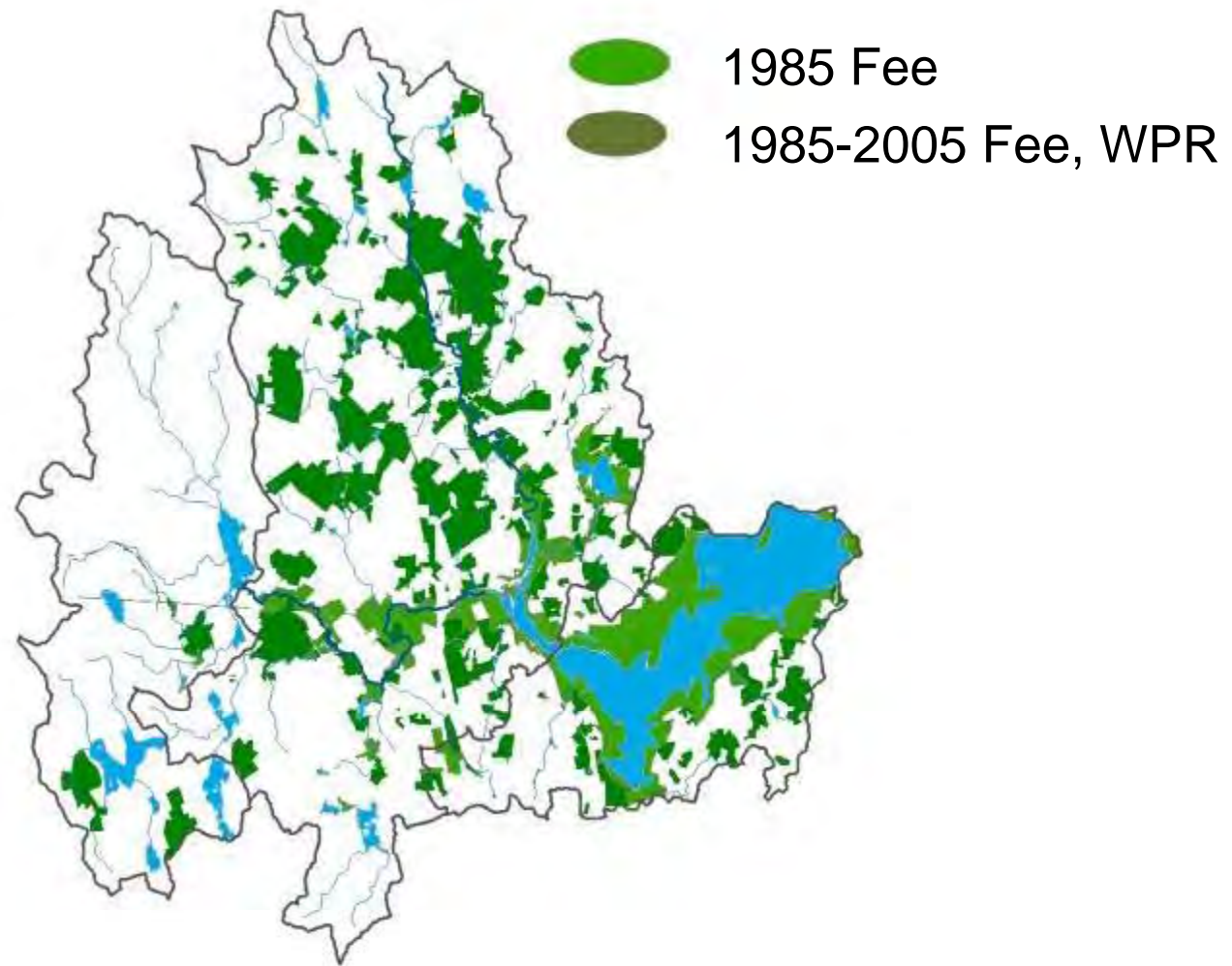
- 7.9% owned
- 5,600 acres almost all around Reservoir + 2 main tribs
- Little buffer



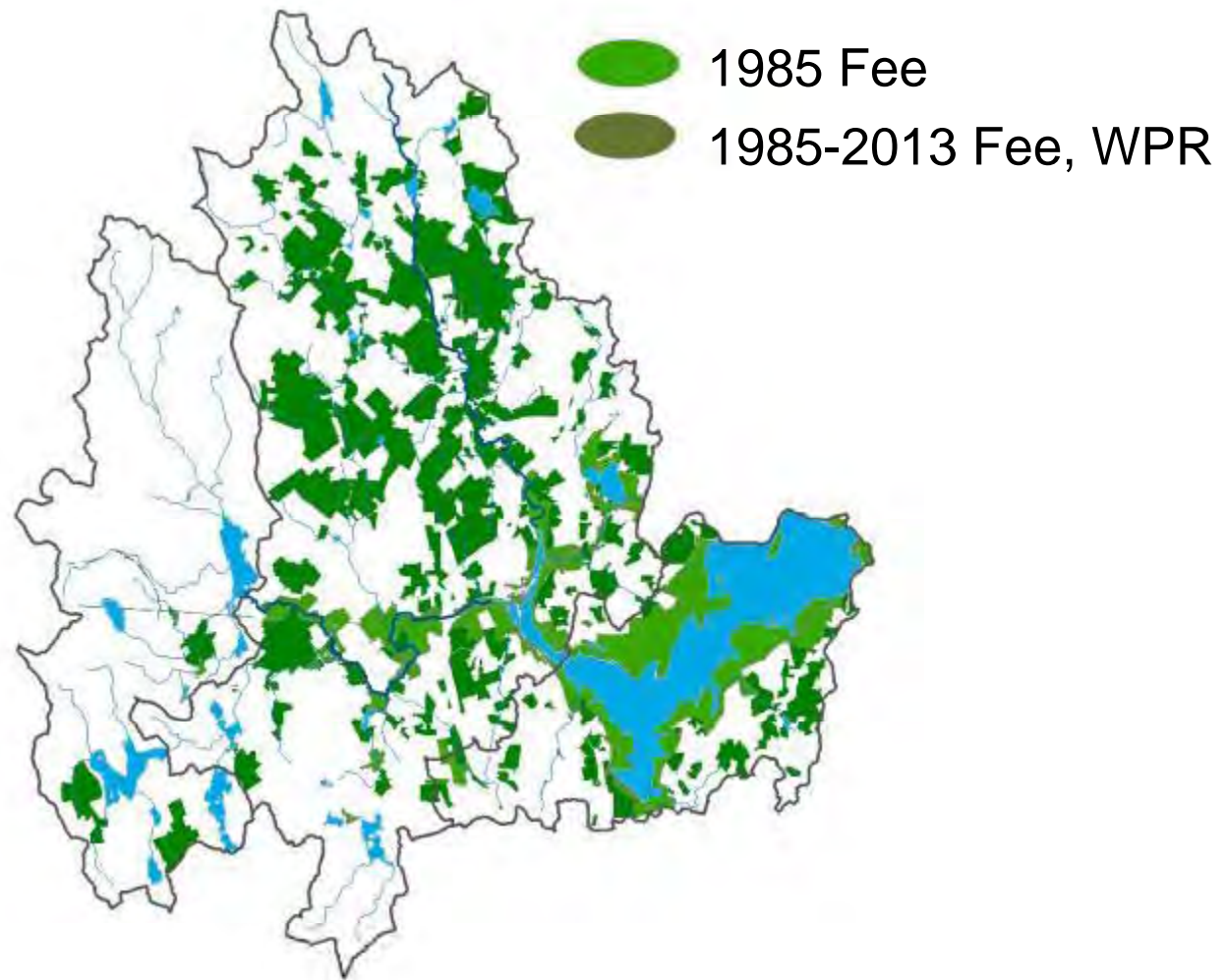
DWSP Protected Land - 1995



DWSP Protected Land - 2005



DWSP Protected Land - 2013



Wachusett Watershed

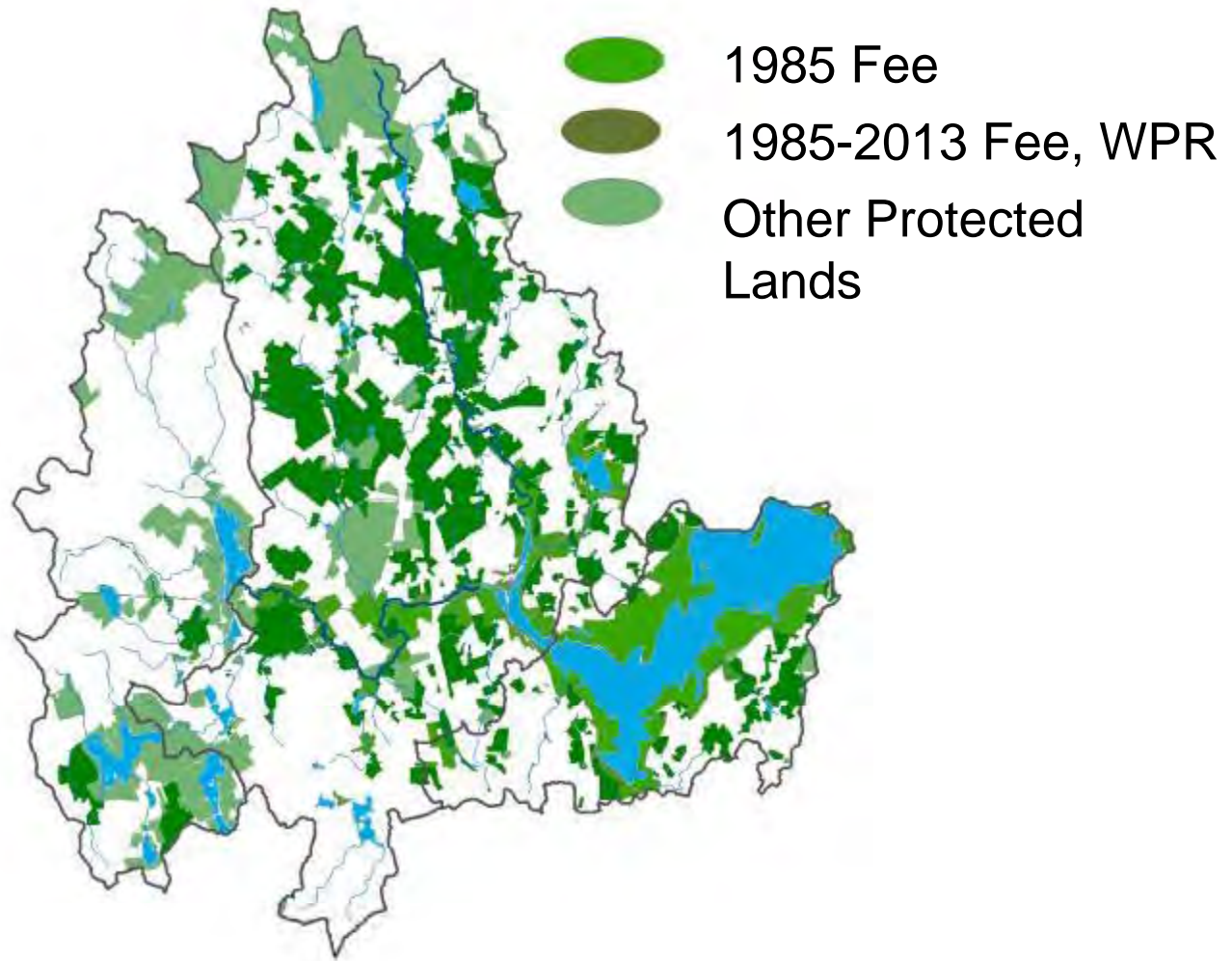
DWSP Watershed Acquisitions 1985 - 2013

Watershed	Acres Fee	Acres WPR	Total Acres	Awards	% of Total Awards	Average Cost/Acre
Wachusett	11,428	2,507	13,935	\$111,062,135	84%	\$7,970
Ware	3,396	981	4,377	\$12,950,150	10%	\$2,959
Quabbin	2,060	2,133	4,193	\$7,430,200	6%	\$1,772
Total	16,884	5,621	22,505	\$131,442,485	100%	\$5,841
% of acreage	75%	25%				

DWSP Land Ownership Over Time 1985 - 2013

Watershed	1985		1998		2007		2013	
	Acres	% of Water-shed	Acres	% of Water-shed	Acres	% of Water-shed	Acres	% of Water-shed
Wachusett Reservoir	5,608	7.9%	15,861	22.4%	18,990	26.8%	20,233	28.6%
Ware River	19,300	31.3%	22,838	37.0%	23,568	38.2%	24,232	39.3%
Quabbin Reservoir	51,792	54.3%	54,203	56.9%	54,517	57.1%	55,355	58.0%

DWSP and Other Protected Land 2013



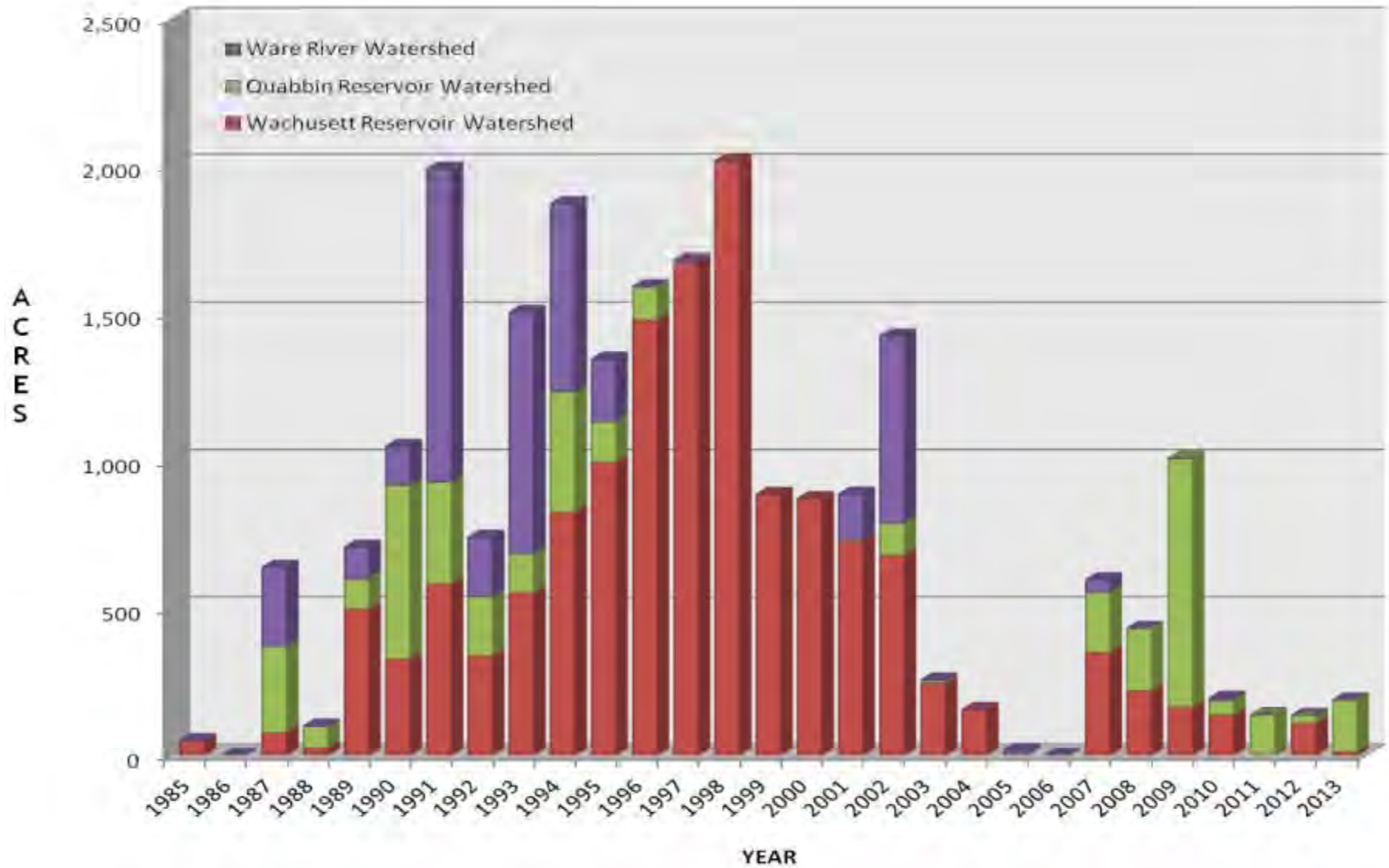
Protected Lands in DCR/MWRA Watershed System 2013

	Wachusett		Ware		Quabbin		Total	
	Acres	% of Watershed	Acres	% of Watershed	Acres	% of Watershed	Acres	% of Watershed
Other Protected Open Space	12,360	17.5%	6,533	10.6%	13,589	14.2%	32,472	14.3%
DCR Watershed	20,233	28.6%	24,232	39.3%	55,355	58.0%	99,820	43.8%
Total	32,583	46.1%	30,211	49.8%	69,574	72.2%	132,292	58.1%

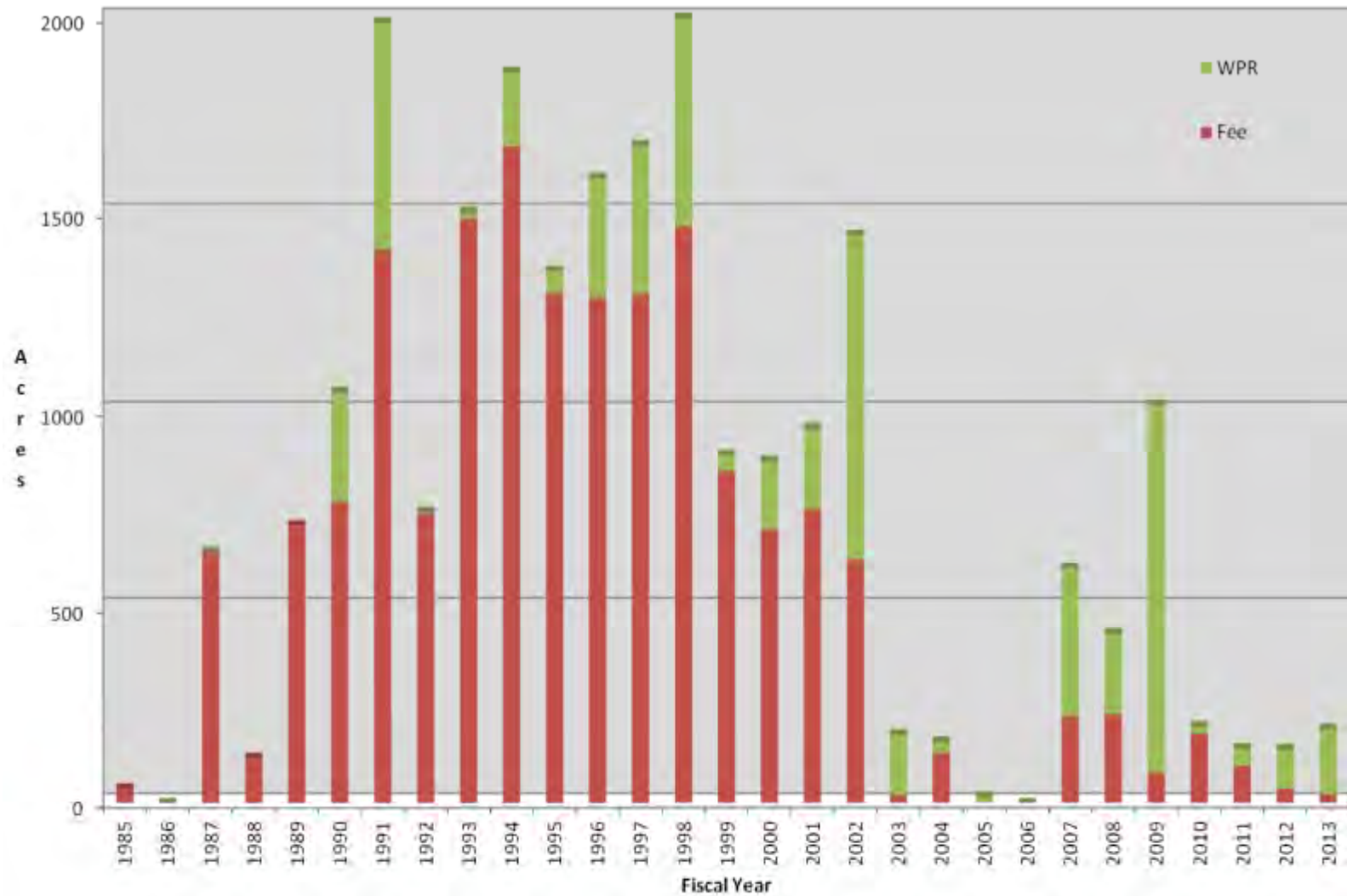
Data from 2013 Watershed Protection Plan Update



Land Acres Acquired Annually by Watershed 1985 - 2013



Land Acres Acquired Annually by Fee and WPR (1985-2013)



Scientific Method for Targeting Acquisitions in Wachusett Watershed

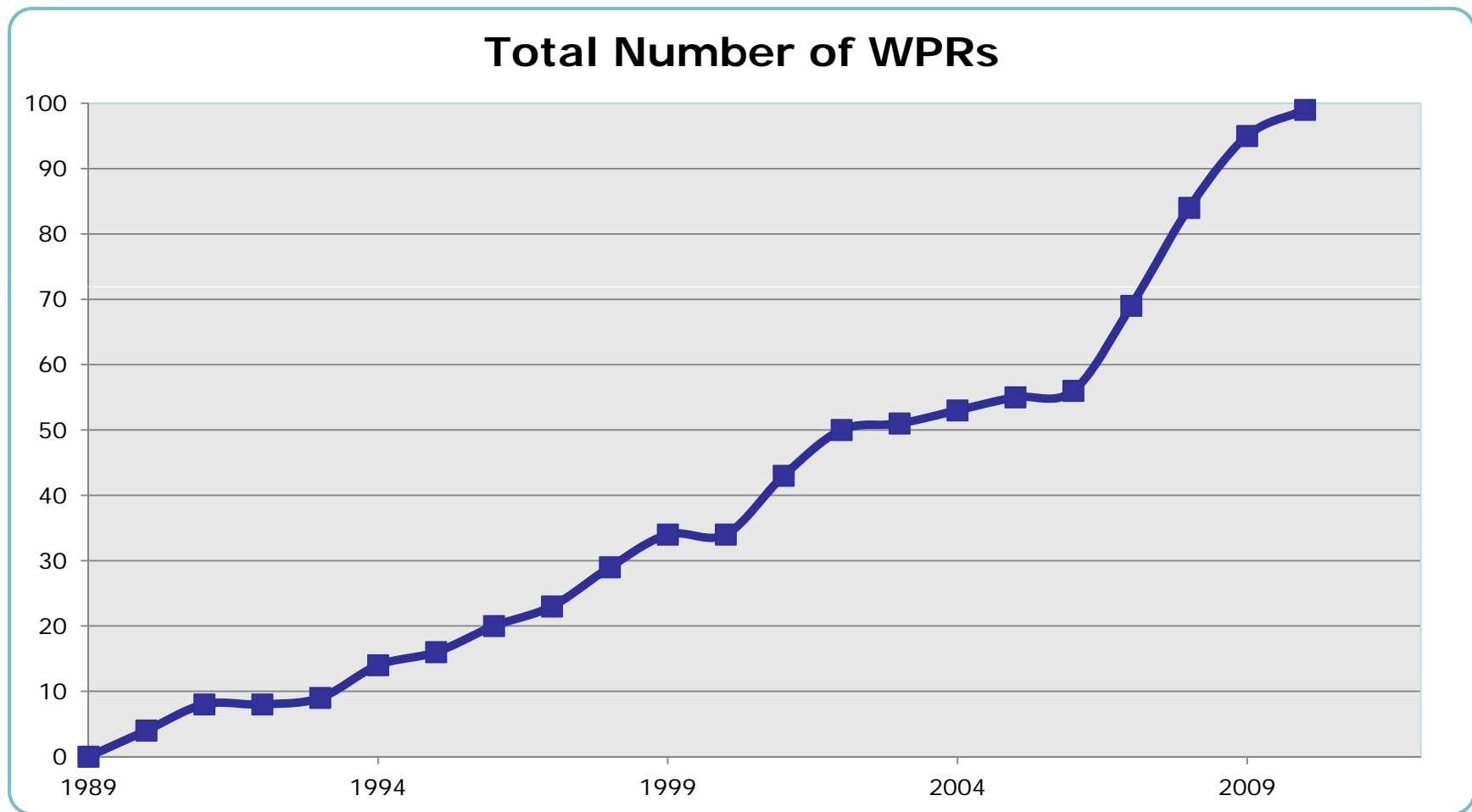
- Land Acquisition Panel formed in 1993
- DCR and MWRA scientists, planners, engineers, and foresters utilized “Expert Choice” analysis of land use factors in Wachusett watershed to determine water quality protection priorities
- GIS used to rate every parcel of land
- Method heralded across water supply and land planning world

DWSP's Watershed Preservation Restriction Program

- Landowner gives up certain rights to his or her land.
- Rights are permanently removed from the property, even when it is subsequently sold.
- Template prohibits activities that can harm water quality (e.g., construction, roads, livestock, motorized vehicles). Allows passive use.
- DCR Monitoring, Landowner relations, enforcement (dedicated staff position)



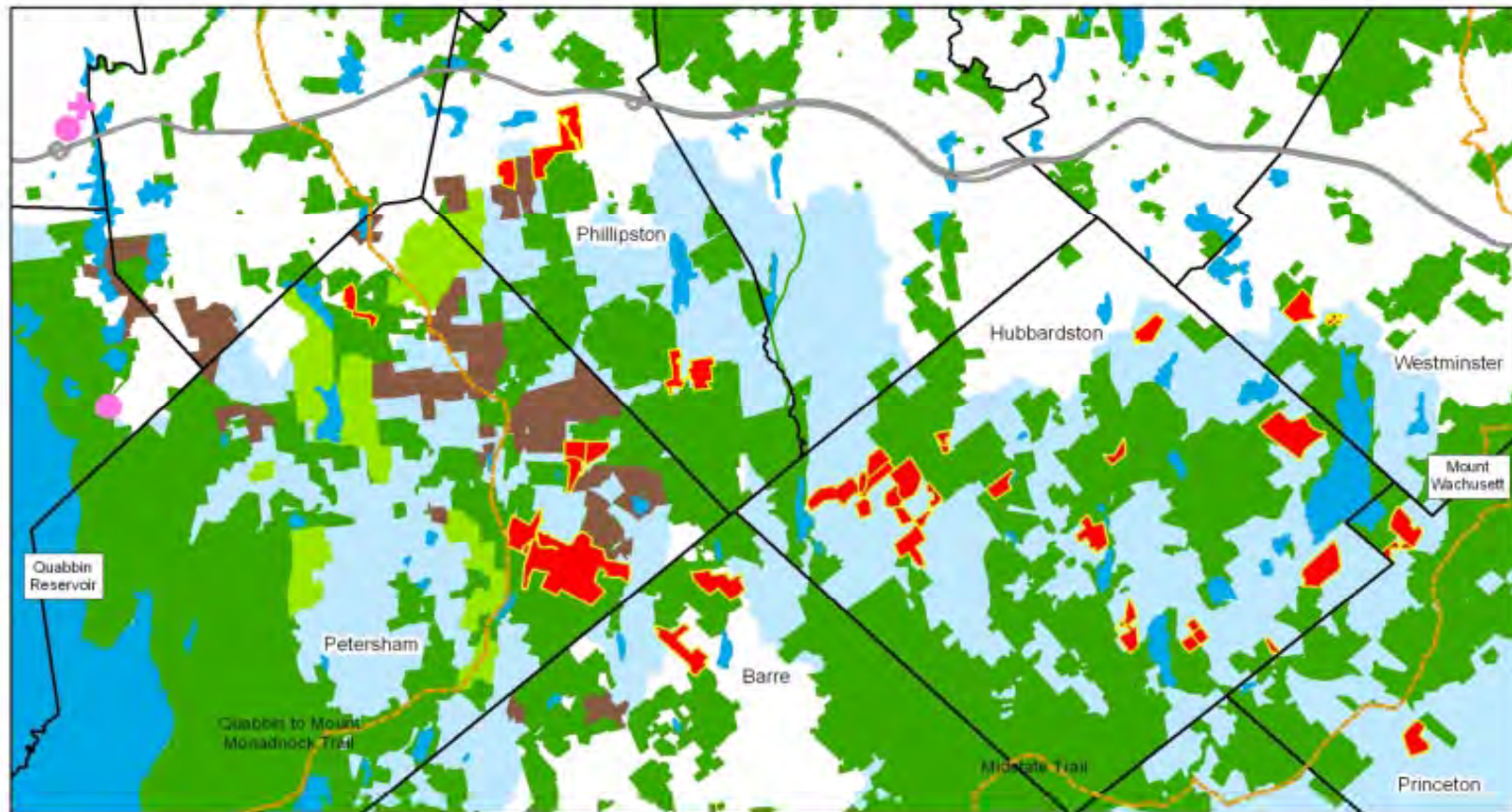
WPR Program



Use of Non-MWRA Funds

- Gifts and Bargain Sales
(Federal Deductions and State Tax Credits)
- Collaboration with Non-Profits,
Municipalities
- USDA's Forest Legacy Program
- Municipal Acquisitions

"Q2W" Forest Legacy Application



Quabbin Reservoir to
Wachusett Mountain
(Q2W)
FY13 Forest Legacy
Grant Application



East Quabbin
LAND TRUST

NOBLE FUND FOR
THE QUABBIN

Source Credit: MassGIS

Map by NCRLP

Milestones

- Over 500 parcels acquired
- Over 22,000 acres protected
- Over 5,500 acres in WPRs acquired
- Over \$130 million spent
- Wachusett watershed acquisitions played large role in successful filtration avoidance decision by federal courts
- Program is a national model in science-based acquisition targeting and use of GIS



Land Acquisition Strategy FY14-18

- Allocate \$1 million annually for the period of FY14-18.
- Bring additional opportunities of critical nature to the MWRA Board's attention.
- Continue focus on acquisition by WPR.
- Utilize the LAP Wachusett Model to identify high rated parcels for acquisition.



Land Acquisition Strategy FY14-18

- Acquire critical lands within the Quabbin Reservoir watershed and limited strategic property in the Ware River watershed.
- Maintain LAP's regular and detailed review of possible projects to focus limited financial resources on the best acquisition opportunities to protect water quality.

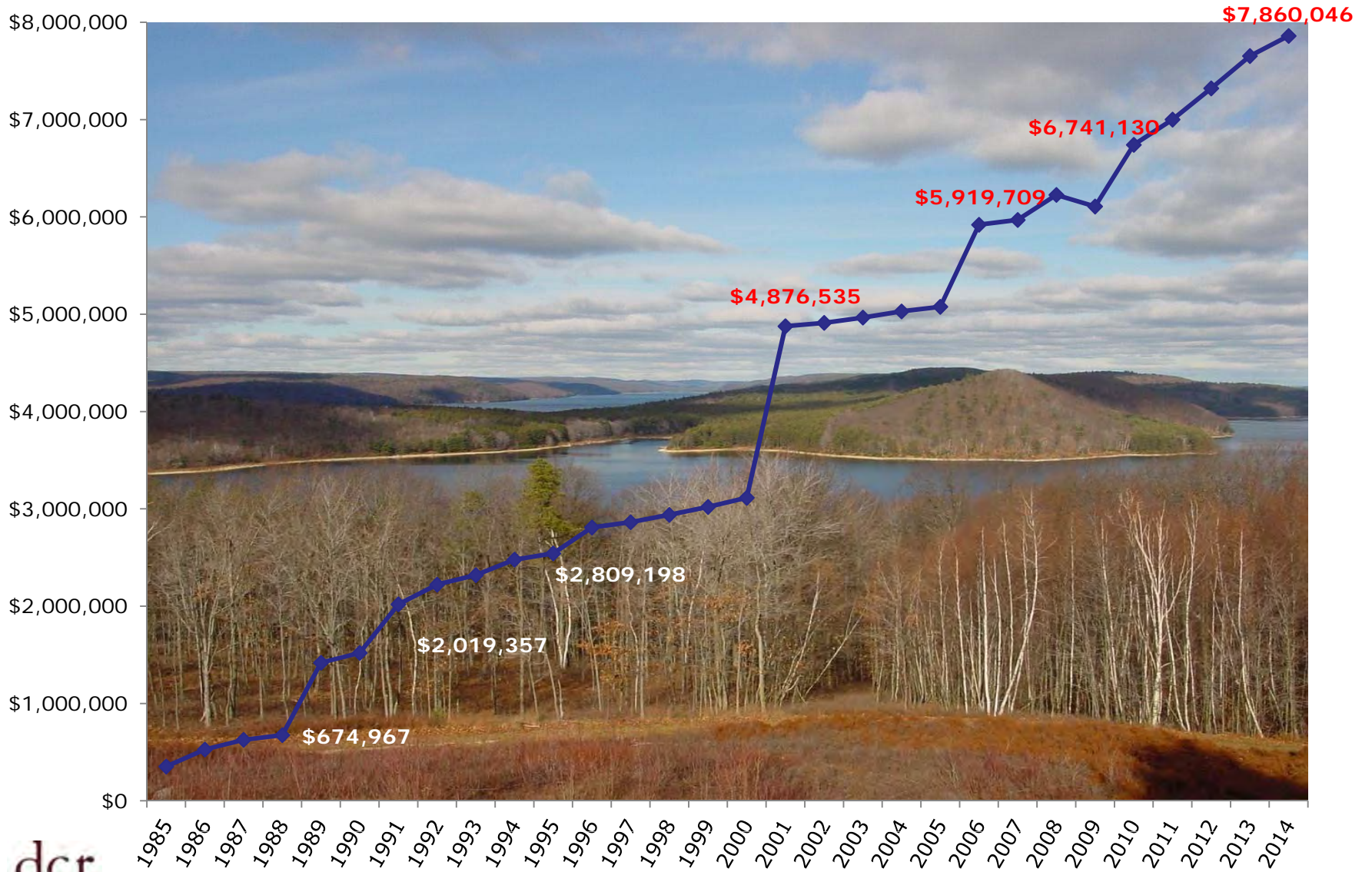
PILOT

Payments in Lieu of Taxes: MGL chapter 59, section 5G
Enacted in 1985 for Quabbin and Ware; Amended in 1987 to
include Wachusett and Sudbury

- How it works
 - Valuation established by Department of Revenue
 - Multiply that amount by each town's commercial tax rate
 - Amount paid can never be less than previous year
 - MWRA provides funds to DCR to make payments
 - Amount paid in full
- Different than other State Owned Land reimbursements
 - Utilize three year statewide average of residential tax rates
 - Money allocated by legislature; never full amount (app. 70%)

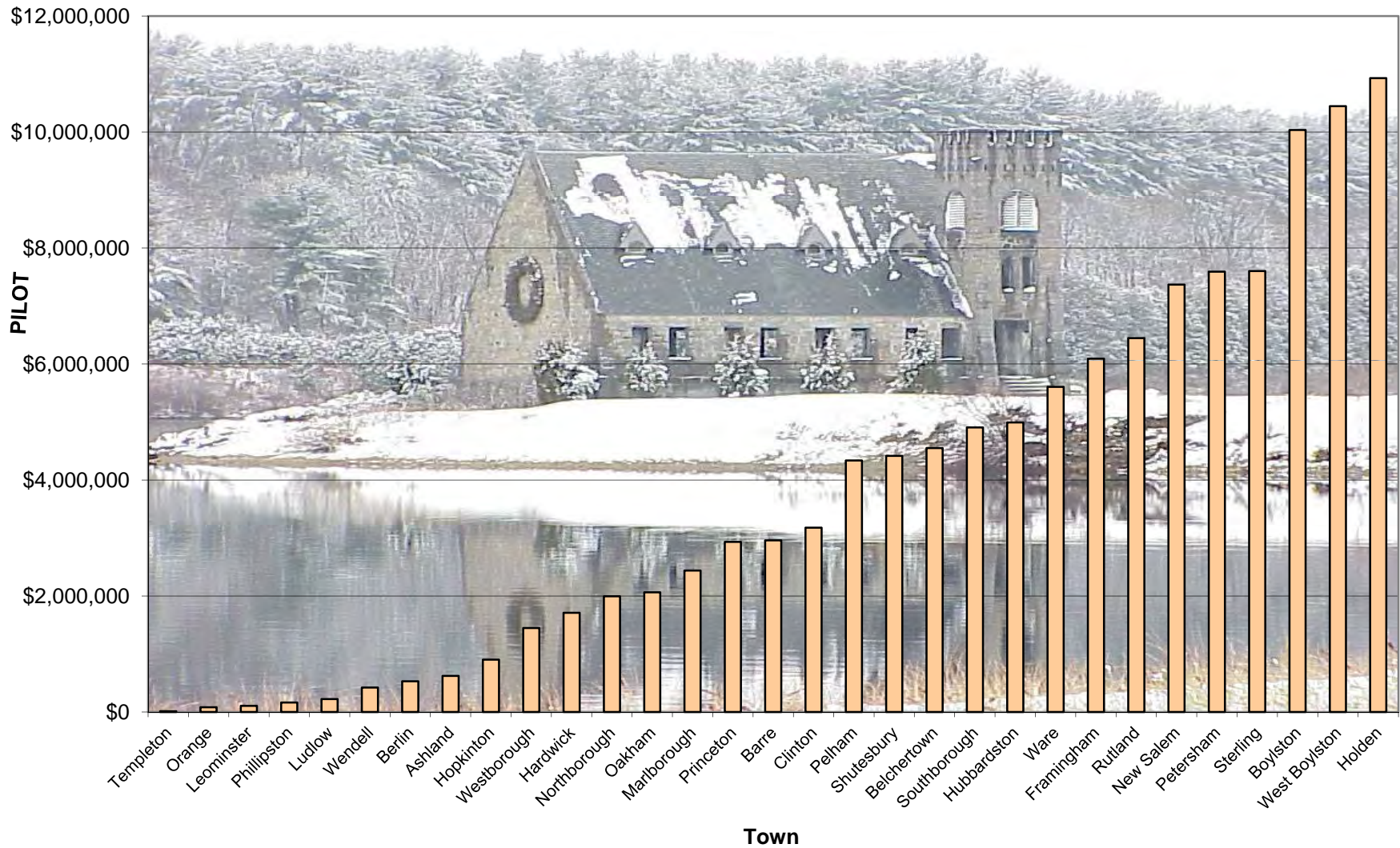


PILOT: 1985-2014



Total paid over 30 years: \$117,103,342

PILOT: 1985-2014



Total paid over 30 years: \$117,103,342

AWWA National Award



For more information:

Web: www.mass.gov/dcr/watershed

Email: joel.zimmerman@state.ma.us/jim.french@state.ma.us