



# TERRAFIRMA

PUTTING HISTORIC LANDSCAPE PRESERVATION ON SOLID GROUND

*"Rather let some quiet gray stone indicate our  
resting-place, and evergreen ivy drape it with its  
somber leaflets, while over all may arch the boughs  
of ancient trees that shall bestrew it in spring with  
blossoms, and in autumn with the soft covering of its  
falling leaves."*

CHARLES SPRAGUE SARGENT, 1892

A Publication of the Massachusetts Department of Conservation  
and Recreation's Historic Landscape Preservation Initiative

MOURNING GLORY: PRESERVING  
HISTORIC CEMETERIES

10

A DECADE OF CEMETERY PRESERVATION  
MANAGEMENT FRAMEWORK

ESTABLISHING A PRESERVATION STRATEGY  
BEST PRACTICES

THE LAST WORD





*Mission: To protect, promote, and enhance our common wealth of natural, cultural and recreational resources.*

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**T**he Massachusetts Department of Conservation (DCR) proudly issues this *Terra Firma* in celebration of the 10th anniversary of the **Preservation Guidelines for Municipally Owned Historic Burial Grounds and Cemeteries**, the award-winning guidebook for preserving historic cemetery landscapes.



DCR's predecessor, the Department of Environmental Management (DEM) first published the *Guidelines* in 1999 (expanded and revised in 2002) as a summary of the Massachusetts Historic Cemeteries Preservation Initiative, a unique technical assistance project under the DEM Historic Landscape Preservation Grant Program. The Initiative was a response to the steady stream of funding requests from cities and towns for the preservation of historic cemeteries, largely focused on stone repair within landscapes that were undocumented or lacked comprehensive plans. Based on 32 case studies, the *Guidelines* address the complex challenges facing burial grounds, including deteriorating headstones and monuments, failing walls and walkways, aging and hazardous trees, and concerns with access and security. Over 1000 copies of the first and second editions have been distributed nationally and are now available on the DCR website and on CD-ROM, included at the back of this bulletin.

On this anniversary of DCR's groundbreaking work we can reflect on the developments of the past years and report on the current national context, issues related to administration and ownership, making choices about preservation treatment, and the best practices for maintaining historic burial grounds.

DCR is grateful to the National Park Service's National Center for Preservation Technology and Training (NCPTT) for their financial and technical support in making this bulletin possible. NCPTT is a leader in training for cemetery preservation and other landscape preservation programs (see [www.ncptt.nps.gov](http://www.ncptt.nps.gov) for more information).

*The Town of Hawley received Round I funding through the former Historic Landscape Preservation Grant Program for survey work at Town Cemetery.*



## HISTORIC CEMETERY PRESERVATION IN MASSACHUSETTS

DCR Historic Landscape Preservation Grant Program  
(1998-2002)

- 33 cemetery projects in 24 communities
- \$1.29 million invested in publicly owned historic cemeteries

125 cemeteries added to the National Register of  
Historic Places (2000-2011)

Massachusetts Historic Commission's MA  
Preservation Projects Fund (1985- 2011)

- 33 cemetery projects in 18 communities
- \$938,814 in grants awarded for cemetery preservation

*"Show me your cemeteries and I will  
tell you what kind of people you have."*

BENJAMIN FRANKLIN

## A DECADE OF CEMETERY PRESERVATION

When DCR first published the *Guidelines*, Massachusetts was at the forefront of the preservation of cemetery landscapes at a time when few programs for historic public cemeteries existed. The Boston area was already widely known as the location of the nation's first Rural Cemetery (Mount Auburn, Cambridge and Watertown) and for the first city-wide programs for the preservation of historic burying grounds. The City of Boston's Historic Burying Ground Initiative began in 1985 with a Master Plan for the city's 16 historic burying grounds. Other organizations addressed specific needs such as gravestone preservation - The Association for Gravestone Studies in Greenfield, Massachusetts (1977) - or provided public access to records for genealogical research - findagrave.com (1995). Iconic cemeteries like Mount Auburn had well developed programs for landscape preservation, monument care, and public education, but such programs were uncommon in smaller public cemeteries. Massachusetts was perhaps one of the first states with a program to address the preservation of historic cemetery landscapes as a whole.

In revisiting cemetery preservation ten years after the *Guidelines*, there is a marked increase in the number of programs for cemetery preservation at the state, county and national levels across the country. This marks an enhanced awareness of cemetery preservation issues and improved planning. Recognition of the national significance of historic cemeteries as cultural landscapes is apparent in the designation of cemeteries such as Laurel Hill in Philadelphia, PA and Woodlawn Cemetery in Bronx, NY as National Historic Landmarks. State programs have grown as well. In 1999 Oregon created a program in coordination with its Commission on Historic Cemeteries, addressing identification, public education, and offering financial and technical assistance. Texas and Indiana established designation and marker programs in 1999 and 2003, respectively. Michigan's State Historic Preservation Office issued its *Historic Cemetery Preservation Manual* in 2004, with excerpts from the Massachusetts *Guidelines*. Rhode Island's Advisory Committee on Historical Cemeteries is a permanent group that studies the location, condition and inventory of the state's cemeteries and makes recommendations to the General Assembly for their preservation, in accordance with the Rhode Island Historical Cemeteries Act (2006). It is clear from these programs that historic cemeteries remain a valuable cultural resource and important public landscapes.





Despite broadened awareness, many communities in Massachusetts still struggle to manage their cemeteries as the valued public landscapes that they are. Threats identified in the *Guidelines* remain today - vandalism, damage to stonework, poor drainage, erosion, and loss of vegetation. While some of the case study cemeteries have made progress toward more robust landscape preservation practices, most still need attention. Especially for inactive cemeteries, regular maintenance and public awareness remain vital to successful preservation. With competition for scarce municipal funds, cemetery preservation may become a low priority, and administration of cemeteries varies from one community to the next, further complicating management.



*Threats such as overgrown vegetation and vandalism still impact historic cemetery landscapes (Lawrence, top). When DCR discovered illegal digging at this cemetery in Douglas State Forest, staff notified local and state police, and the agency's Office of Cultural Resources coordinated with the State Archaeologist to stabilize the site.*

## CASE STUDY SUCCESS

The 1840 Walnut Street Cemetery (including the 1717 Old Burying Ground) in the Town of Brookline was one of the 32 case studies in the DCR Preservation Guidelines. Since that time, the town's Parks and Open Space Division and Friends of Old Burying Ground have created a Cemetery Master Plan (2003), undertaken a major stone conservation project (2006), restored the receiving tomb doors, and carried out tree work through the town's Forestry Division. In 2009 the cemetery was the host site for NCPTT's Cemetery Landscape Preservation Workshop. The town is currently working on resetting stairs, assessing and repairing tombs, and raising funds in conjunction with the Friends for the restoration of historic ornamental fencing.



*"...research by psychologists conducted during the past twenty years has established beyond a doubt that experiences of landscapes similar to those of early rural cemeteries relieve stress, dissipate grief, and strengthen the immune system."*

REUBEN RAINEY, THERAPEUTIC LANDSCAPES: AMERICA'S NINETEENTH-CENTURY RURAL CEMETERIES (2010)

## MANAGEMENT FRAMEWORK

### CEMETERY ADMINISTRATION

Massachusetts' municipal cemeteries fall under the jurisdiction of one or more local departments or volunteer commissions who control management, policy, maintenance and regulatory compliance. Some have seats on the local Community Preservation Commission and make recommendations about funding. While each municipality has its own government structure, the following represent the most common jurisdictions responsible for managing historic cemeteries in Massachusetts.

**Department of Public Works** *The municipal department in charge of roads and infrastructure, sometimes including tree care and other maintenance at historic cemeteries.*

**Parks Department** *Even when separate Cemetery Commissions exist, local parks departments are often charged with cemetery maintenance.*

**Cemetery Department** *Administered by public employees, this department is directly responsible for maintenance, capital improvements, and day-to-day cemetery operations including burials.*

**Cemetery Commission** *This municipally-appointed volunteer board of residents oversees the management of municipal cemeteries, often appointing the Cemetery Superintendent.*

**Local Historic District Commission/Historical Commission** *This volunteer commission may have legal jurisdiction to review physical changes to the historic cemetery if it is located within a local historic district, national register district, or a designated historic property.*

**State Archaeologist/Massachusetts Historical Commission** *Involved in the enforcement of state laws protecting historic burial grounds and evaluating permits for gravestone repair in accordance with 950 CMR 41. Laws include the MA Unmarked Burial Law (MGL Ch. 659 of the Acts of 1983 and Ch. 386 of the Acts of 1989) and the Gravestone Repair and Reproduction statute (St.1973 Ch.448).*

Regardless of who is the lead, collaboration among the above groups can be helpful by establishing common management goals and reducing costs through shared resources (i.e. equipment, personnel). Proper cemetery management also benefits from consultation with experts from a number of different disciplines like landscape architects, historians, civil and structural engineers, arborists, horticulturalists, masons archaeologists, and conservators, to name a few.

### PARTNERSHIPS

Historic cemeteries serve an important civic function even long after the last plot is sold. Active and inactive cemeteries are valuable public open spaces, scenic locales, genealogical resources, and important historic landscapes, with many vested in their preservation. Cemetery managers can collaborate with non-profits or friends groups who can enhance public programming, provide volunteer labor, and promote fundraising. Friends groups are often cited as the driving forces behind the successful preservation of historic public cemeteries.



### CASE STUDY SUCCESS:

#### VINE LAKE PRESERVATION TRUST

As one of the 32 case studies in the Guidelines, Vine Lake Cemetery in Medfield received a preservation treatment plan, recommendations, and a priority action list. When local residents created the Vine Lake Preservation Trust in 2009, the Trust's Board used the Guidelines to develop their short and long term preservation plans, with a focus on tree management and gravestone preservation. The Trust is a private corporation that seeks to partner with the Cemetery Commission, which is the policy-making body for the town. Funded through private donations, pro-bono services, and public grants, the Trust has four key program areas – Preserve, Enhance, Interpret, and Celebrate – with projects such as headstone repair and volunteer training, to replanting, art programs, and walking tours on history, art and nature.

*Photo by Vine Lake Preservation Trust*

For more on partnerships see DCR's Terra Firma #4 - New Models of Stewardship: Public/Private Partnerships.





*Strong regulations can help to control or prevent incompatible recreational uses in historic cemeteries. Photo by Vic Walker.*

*"Dust in the wind"*

*All we are is dust in the wind"*

KANSAS, 1977

## CURRENT ISSUES

While cemetery stewards face the same basic challenges as a decade ago, a number of relevant issues have been added since that time. Each has its own unique potential impacts on historic burial grounds and cemeteries.

### DOGS

As one of few open spaces in many urban settings, municipal cemeteries are often used for passive recreation, including dog walking. With intense use by dog owners, cemeteries can suffer the same fate as many dog parks: erosion and compaction, loss of groundcover, and effects from dog waste on plantings and structures. Porous stone like marble and weakened iron features are particularly vulnerable as are low growing shrubs such as boxwood and yew. Developing clear rules for use and enforcing those rules can prevent damage from overuse by both humans and dogs. At Congressional Cemetery in Washington D.C., dogs are allowed, even welcomed, but owners are charged a user fee that provides funds needed for maintenance and preservation. More commonly dog owners are prohibited from cemeteries or must adhere to strict regulations regarding leash use and waste.

### NATURAL DISASTERS

We have little, if any, control over natural disasters such as hurricanes and earthquakes, and these unplanned events can cause significant damage to historic cemeteries. Strong winds, snow and ice loads can cause tree limbs to drop onto monuments, markers, fences, gates and other structures. Heavy rains can cause flooding and washouts, especially at hillside cemeteries, eroding graves, displacing markers, and altering roads and paths. For these reasons, preservation planning for historic cemeteries should include disaster preparedness and recovery.

Older trees are particularly vulnerable. The Asian long-horned beetle has claimed thousands of trees including large maples in Massachusetts. Cemetery plantings that were originally hedges, of arborvitae or white pine, are now overly dense plantations. Without adequate maintenance, these plants become tall, top heavy evergreens, easily toppled by snow and wind. Regular pruning and replacement can avoid catastrophic damage to historic plantings, the restoration of which may not be eligible for emergency funding.

*On June 1, 2011 a tornado ripped through this cemetery in Springfield, Massachusetts, uprooting trees and damaging iron fencing and stone monuments. Photo by Joseph Grunske.*



## UNMARKED BURIALS

As cemeteries and burying grounds age, temporary or fragile grave markers may change or disappear altogether. In some cases such as hospital cemeteries and potters' fields, burials were never marked or were marked by wooden or other temporary markers. The extent of burials may not be readily apparent as perimeter fences, walls or defining vegetation degrade over time; and, as adjacent development increasingly creeps toward cemetery boundaries, unmarked burials may be threatened. Conducting a land-use history of a parcel, including site-specific cartographic and documentary research, may assist in locating these burials. Once identified, Ground Penetrating Radar (GPR) and other geophysical techniques have been very successful in locating grave shafts and determining the limits of historic burial sites. Further archaeological investigation may be needed if areas are targeted for cemetery expansion or other development. Pre-Contact Native American burials are never marked, but exist across the entire Massachusetts landscape. These previously identified sites are confidential and inventoried by the State and Tribal Historic Preservation Officers.

## ENVIRONMENTAL CHANGE

Over the past decade cemeteries have been subjected to environmental pressures that threaten the integrity of the historic landscapes. Acid rain, sleet, snow or dew (pH <7)

carries relatively high concentrations of acid-forming chemicals, usually released from coal burning, chemical manufacturing, and smelting. Although federal regulations on emissions have decreased pollutants in the atmosphere in the past decade, acid rain continues to plague stone and metal work in historic cemeteries. At low levels acid rain can bleach stones, and at higher concentrations it can eat away at engravings creating a "sugaring" effect, eventually destabilizing the stone. Marble, limestone and soft metals such as



*Soiling and wear on marble stones, Egremont.*

bronze are most at risk, especially if exposed to acid snow collecting over many winter months.

Vegetation in cemeteries is also affected by acid rain and climate change. Highly acidic soils can restrict nutrient uptake, weakening trees and other plants. Exposure to acid precipitation can also cause defoliation, making plants vulnerable to disease and other threats. Older vegetation may struggle to adapt to changes in temperature and rainfall which have been observed over the past 50 years.

Part of the public's response to environmental change has been a trend toward burial practices that use less space and leave more naturalistic settings. Cremation or "scattering" gardens and community mausolea present a low impact, economical option. Green burials may also require specialized zoning. The preservation plan for a historic cemetery landscape could identify areas where these uses might be integrated, especially if there is interest in keeping the cemetery active.



*Not all cemeteries have clear boundaries, and graves may not be permanently marked, as at this Potter's Field in Haverhill.*

For more information see MA Historical Commission's Know How #4 *What to Do When Human Burials are Accidentally Uncovered*

## A NEW TOOL FOR CEMETERY PRESERVATION

Between 2000 and 2011, 42% of Massachusetts cities and towns have adopted the Community Preservation Act (CPA) to leverage local and state funding for open space, affordable housing, and historic preservation. Historic cemetery projects are frequently funded through the CPA and include:

- Fence and wall restoration and/or replacement
- Signs and lighting
- Conservation of gravestones and Civil War monuments
- Tree care, landscaping and irrigation
- Survey and design work
- National Register nominations
- Interpretation and public education

For more information see [www.communitypreservation.org](http://www.communitypreservation.org).



## ESTABLISHING A PRESERVATION STRATEGY



*The removal or screening of incongruous elements can clarify imagery. At Milk Row Cemetery in Somerville perimeter plantings will be introduced to ameliorate the effects of removing trees that were damaging the grave markers and a significant Civil War monument.*

Cemetery stewards need to establish a preservation strategy or treatment that considers the historic character of the landscape, the significance of the features, and management goals. Developing a sensitive preservation plan that considers all of the needs and components of a property is an essential first step in this process. Preservation planning should include research into the historic character of the cemetery, documentation of existing conditions, and recommendations for a preservation treatment. The treatment can range from preservation or stabilization to restoration, and can help communicate the history of a place or convey a sense of authenticity (for definitions see sidebar opposite page). The preservation plan will determine the preservation priorities and the extent of intervention. For example, a cemetery that contains ancient stones with carvings by a known artist might require a strategy that sacrifices later vegetation (like shrubs and trees) if their growth is impacting markers. Conversely, a rural cemetery attributed to a noted landscape architect might warrant a robust program for the maintenance and replacement in kind of ornamental shrubs and trees.

### WHAT STYLE IS IT?

Each era of cemetery development had its own distinctive style influenced by prevailing societal views about death. The stark barrenness of early Puritan graveyards contrasts strongly with those created during the rural cemetery movement with its lushness of vegetation, directly influenced by the Romantic Period in art and literature. Many cemeteries evolved over time and exhibit features from several eras. Before any preservation treatment is selected, especially restoration to a specific period, conduct research to understand and document what was there.

	17 <sup>th</sup> century	18 <sup>th</sup> century	1831-1900	1855-1940	1917-present
	Puritan Burial Ground	Unitarian Burial Ground	Rural Cemetery	Lawn Cemetery	Memorial Park
Societal view toward death	Fear	Hope	Romanticism	Commemoration	Communal expression
Landscape character	Barren	Larger, more orderly	Picturesque	Pastoral	Rolling lawn with central gathering places
Setting	Leftover land	Churchyards	Natural, rural sites	Park-like settings	Park-like settings
Markers	Temporary, some slate	Mostly slate	Varied, more sculptural	Shared family and civic monuments	No vertical markers
Vegetation	Untended grass	Unadorned	Heavily planted	Lawn, plantings to define family lots or frame views	Rolling lawn
Circulation	None	Little	Designed, scenic	Designed, curvilinear	Functional

*Historic cemeteries can exhibit characteristics from one of more eras – 1) Puritan (Gloucester), 2) Unitarian (Ware), 3) Rural (Quincy) and 4) Memorial Park (Nahant).*







*The trees in this burying ground in Stoneham are likely volunteers, not historic plants, yet they may be valued by residents for their shade or as habitat for songbirds. The community must decide whether the benefit of vegetation outweighs the potential damage to historic stones, walls and fencing.*

## EDUCATING THE PUBLIC ABOUT CHARACTER

Once the preservation treatment is finalized, cemetery managers need to consider the impact of any changes to the public's perception or use of the landscape. In Massachusetts cemeteries and burying grounds have been a part of the public landscape for centuries, and many people have come to appreciate the current character of those places. Mature trees, overgrown vegetation, and memorial plantings may define people's visual experiences and memories. Prior to making any change in landscape character, it is important to educate constituents about the reasons for and benefits of change. Removing trees in 17<sup>th</sup> century burial grounds may be an appropriate preservation treatment, but visitors and neighbors should understand the reason for such radical change.

Cemetery managers may have to develop a public outreach program before moving forward with certain projects. Historic cemeteries span decades, even centuries, of burial practice representing the ebb and flow of the local population. Over that time, families have relocated or simply passed on, leaving the family lots with absent owners or essentially abandoned. Cemetery managers are then faced with the challenge of preserving the headstones, curbing, fencing and other landscape features on private lots, without any way to contact the owners for consent. This should not deter managers from pursuing preservation projects involving private lots. Outreach through local media, community stakeholders and other outlets can help to create a transparent public process for undertaking cemetery projects and may reconnect families with their heritage. Even without direct contact with lot owners, the preservation of public cemeteries has a clear public benefit, and public investment is well-supported.

**Conservation** is usually used to describe treatment of objects such as gravestones or other artworks. Preservation, rehabilitation and restoration are levels of preservation "treatment" as defined in the Secretary of the Interior's Standards. **Preservation** protects a landscape as it is, with minimal alterations, while **Restoration** is a return to a specific period based on detailed research. **Rehabilitation** is the most flexible treatment, allowing for adaptive reuse of a landscape. For more on basic landscape preservation principles see Terra Firma #1.

## NATIONAL REGISTER VS. LOCAL HISTORIC DISTRICT

While listing a cemetery on the National Register is an excellent way to recognize its significance and document its history, NR listed cemeteries are not automatically protected by local authority. Creating a Local Historic District through ordinance or bylaw is one of the strongest forms of protection for historic resources in Massachusetts. For more see the Massachusetts Historical Commission website [www.sec.state.ma.us/mhc](http://www.sec.state.ma.us/mhc).





## BEST PRACTICES

The following are some of the best practices for cemetery landscape preservation, with more comprehensive recommendations found in the *Guidelines* contained in the CD-ROM at the back of this bulletin.



### PATHWAYS AND DRIVES

While there were few of these in our early graveyards, they were an integral part of the larger landscape of the rural cemetery and later movements. The original grass or gravel surfaces were later paved with harder, impervious materials. Today it is often impractical to return to the earlier, softer, erosion-prone paving materials because of reduced staffing and budgets. It is important to maintain pavement profiles such that these routes do not collect or deter surface storm water which can lead to erosion.

Older cemeteries often do not have the generous turning radii at intersections that our contemporary vehicles require. Planned rerouting of traffic and/or provision of unobtrusive protective devices like bollards, wheel stops or wood guardrails may be required.



Photo by NCPTT

### EROSION AND COMPACTION

Erosion is unsightly and presents a direct threat to the cemetery because it rapidly hastens degradation of monument foundations, paths, walls and landforms. Controlling erosion by maintaining vegetative cover and properly managing overland storm water flow is essential. In areas without storm drainage systems, like our earliest burial grounds, it is imperative to prevent concentration of overland flow to avoid potential erosion. This entails providing smooth gradients that will spread the surface water evenly over the landscape.

Compaction, or the consolidation of earth, retards vegetative growth by reducing the soil's water holding capacity and air spaces. This, in turn, leads to erosion. Compaction is typically caused by overuse, either vehicular or pedestrian. To relieve these effects, managers should try to redirect vehicular and pedestrian movement so as to minimize compaction. Then, periodic aeration in the late summer or early fall with a core aerator may often be desirable. Aeration should be limited to a depth of 6 inches to protect against potential damage to buried resources, and aeration equipment should remain at least 12 inches away from grave markers.



### VEGETATION

Trees, shrubs and hedges often contribute significantly to the character of the cemetery landscape. Over time, woody plants mature and decline due to age and disease. Dead branches in specimen trees can pose threats to visitors, monuments and structures. Proper maintenance, including pruning, integrated pest management, and periodic replacement ensures that character-defining vegetation remains a part of the cemetery. The periodic pruning of trees in historic burial places is essential to plant health and can allow light and air to reach the ground, instead of creating shaded, wet microclimates that might kill turf or foster biological growth on stones. Potentially hazardous dead wood should be removed every year, with safety pruning occurring every five years. Early removal of volunteer growth and invasive plants can prevent roots from damaging built features or crowding out historic plantings.





Plant replacements should be based on historic research, where possible, and be appropriate in terms of location, species, mature size and maintenance requirements. The use of invasive, non-native and/or exotic plants should be avoided. Winged Euonymous (Burning Bush), a popular plant because of its striking fall color, fits into this category as it was imported from Asia in the mid 1800s and can be invasive. Substitutions or replacements should be similar in scale and character. In this case, Highbush Blueberry could be appropriate in that it also has brilliant fall color. Managers should be aware of the potential for unmarked burials when undertaking tree removals or planting projects, and an archaeological assessment may be needed.

## TURF

Grass is the primary ground cover on most historic cemeteries and should generally be maintained as lawn for cemeteries built after 1831. A relatively high frequency of mowing is often better to prevent grass from growing too thick, making it more difficult to remove and thus creating a potential for harm to grave markers. It is also best not to mow grass too short as that creates conditions amenable to weed infestation.

Overdressing turf in the fall with compost is a natural solution for maintaining health. If fertilizer is needed, use only natural organic fertilizers to prevent long term damage to grave markers, particularly those made of marble and sandstone. Natural organic fertilizers have



a much lower salt index than synthetic organic or synthetic inorganic fertilizers. After application be sure to remove fertilizer residue from grave markers with a low pressure hose or spray bottles. Maintaining a proper soil pH is important not only for plant growth but also to help protect grave markers. A pH of 6 to 7 is recommended for turf in Massachusetts and can usually be achieved by adding limestone to acidic soils.

To control weeds, diseases and insects, utilize alternatives to chemicals and establish a monitoring system for early detection in accordance with Integrated Pest Management (IPM) practices. Exercise caution when using herbicides and pesticides as many of them also have a high salt content that can damage stone markers and create unsightly “dead zones” in a historic landscape.

Mulching practices can be adapted to decrease the maintenance burden of leaf removal as well as promote composting. At Mount Auburn Cemetery mowers are equipped with mulching blades with exhaust chutes padded with fire hose to prevent marring stones. Mulching mowers collect leaf debris that has been cleared from sensitive stonework and drainage areas with blowers. Special blades on the mower cut and mulch in one pass, leaving mulch to decompose over winter, enriching soil with nitrogen.

*Use of line trimmers and mowers without protective bumpers and application of fertilizers can damage markers.*



*Plywood or other temporary protective devices must be provided for grave markers and other small features during pruning operations. Photo by NCPTT.*

**For more see Terra Firma #2 - Caring for Mature Trees in Historic Landscapes.**



*Contemporary memorial plantings, or private plantings on individual plots, can negatively affect the historic character of some cemeteries. Left untended, shrubs and vines can also become invasive, affecting nearby vegetation or other gravesites. If memorial plantings are allowed, managers should be very clear about the (mature) size, locations and species of private plantings. It should also be clear that the managers reserve the right to remove the plantings if they become overgrown or begin to impact other plots.*







Brookfield Cemetery



Masonry in historic cemeteries range from single fieldstone walls (Petersham) to complex tombs and vaults (Quincy).

## MASONRY

Historic cemeteries can contain a variety of historic masonry features: monuments, sculptures, tombs, vaults, mausoleums, walls and buildings. Historic buildings are often still in active use for administration or maintenance purposes, and their care should follow the *Secretary of the Interior's Guidelines for the Treatment of Historic Properties*. Stone walls so common in Massachusetts' historic cemeteries should be preserved intact, repaired quickly after damage, and kept clear of non-historic and invasive vegetation. Stones should not be harvested for any other use in the cemetery or anywhere else.

Tombs, vaults and mausoleums can be difficult to maintain, and the conservation of stone structures should be undertaken in consultation with professionals. Table tombs can be unstable, creating a safety concern, or they can collapse and become embedded in turf. Mausoleums and vaults should be monitored for signs of frost heaves and moisture such as displaced stones, sinkholes on earthen roofs, icicles forming at mortar joints, or water seepage through walls. Only a structural engineer, architect or architectural conservator experienced with historic masonry structures should assess these burial structures, with work carried out according to preservation standards by skilled masons and conservators.

Monuments, tombs and grave markers are the single feature that visually identifies a historic landscape as a cemetery. They can also be the most prominent character-defining features that, in turn, are the most challenging to maintain. Markers vary significantly in design, size, age, and stone type, and can exhibit a range of deterioration from staining, cracks and spalls to delamination and total collapse. A preservation plan should determine the significance of the markers within the context of the larger landscape, noting their design and attribution, including exceptional carvings, significant people, or commemorative statuary. Stone conservation projects should be undertaken in accordance with the preservation plan and in order of priority.





## CLEANING GRAVESTONES AND MONUMENTS

Soiling and staining of cemetery grave-stones, monuments, markers, and statuary can result from soil splashing, pollution, rusting bolts or other metal features, bird deposits, and berries or sap dropping onto the stone. Biological growth, such as algae, lichen, or moss, can cover the surface, cause the stone to decay, and make reading the stone difficult.

The decision to clean a marker should be carefully considered, as each cleaning can remove a minute amount

*The marble grave stones in North Adams reflect the regional industry and are an important character-defining feature of the landscape.*

of original stone. One reason to consider cleaning a headstone is to remove soiling and pollutants which can accelerate the deterioration of the stone. Other reasons might include cleaning locally significant stones, or stones located at the cemetery entrance to help gain public support for additional cemetery improvements. Cleaning stones covered in heavy biological growth will reveal text important to local historians and genealogists. One or more of these reasons may lead to a decision to clean the stone.

Prior to undertaking a project, determine if a stone is stable enough for cleaning. Consult a professional conservator if you have leaning or falling stones, or if surfaces are flaking or sugaring (loose, grainy surface), as cleaning these stones could result in bodily injury or irreparable damage to the stone.

Cleaning stones should be done with the gentlest means possible. It should never be the intent to make a grave marker look “new.” Even with the most careful technique, cleaning may accelerate deterioration or cause loss of original material. Only use soft brushes and gentle cleaners, such as water or a non-ionic cleaner (neutral pH of 7). Never use wire brushes, power washers, or harsh cleaners, such as bleach.

For more information, view an instructional video at <http://ncptt.nps.gov/2007/cleaning-a-stone-grave-marker-2007-01/>



## READING INSCRIPTIONS

Some popular methods for reading epitaphs involve application of harsh chemicals such as shaving cream or stone-rubbing using wax crayons and paper, both of which can leave harmful residues on stones. Such practices should be prohibited. Instead, use a mirror or flashlight to direct a raking light across surfaces to read inscriptions.

*Photo by NCPTT*



*Photo by NCPTT*







## PROTECTING IRON FENCES

Iron fences are an important contributing feature to the historic character and fabric of the landscape, yet their care is often overlooked during cemetery restoration because they rarely mark a burial and almost never contain an epitaph or burial information. Iron fencing may surround individual or family plots, mark the boundary of a cemetery, or flank formal entrances. In cemeteries where metalwork is a distinctive feature – in the form of fencing, grave markers, signs, gates or statuary – the landscape preservation plan should layout recommendations for treatment.

Repairing fences with loose or fallen pieces should be a high priority, as separated features can easily be lost. Small repairs, such as tightening bolts or replacing missing bolts, can easily be performed by cemetery staff. Consult a professional conservator for more complicated repairs, such as repairing or reattaching bent or damaged ornamentation, and for repairs of breaks in decorative cast iron fencing.

Painting inhibits rust formation, one of the leading causes of iron fence deterioration. The best practice is to remove all loose rust by hand with a wire brush, apply a coat of rust converter (available at hardware stores), followed by a coat of primer and several coats of paint. All primer and paint should be designed for outdoor metal surfaces.

For more information, view an instructional video at <http://ncpptt.nps.gov/2007/iron-fence-repair-video-2007-03/>.

## PUBLIC PROGRAMMING

A major goal in preserving historic cemetery landscapes is to benefit the public. These important open spaces have a stories to tell and can be adapted into vibrant community resources through interpretation and public programming. Simple interpretive panels at cemetery entrances can give visitors a brief history and point out areas of interest. Self-guided tours can be illustrated through a brochure or a web-based map. Local Historical Commissions, Friends groups and other organizations can help promote stewardship through group tours, annual events, and art programs. Especially when cemeteries are inactive, public programming is essential to maintaining a high level of public awareness, one of the keys to successful stewardship.



*Iron fencing around family plots was a distinctive feature of the Rural Cemetery movement, and was popularized through retail catalogs. In some areas fencing was added to plots at older burial grounds, blurring the lines between the two landscape eras.*

*Programs on historical figures, landscape design, horticulture, and funerary art can promote a sense of community pride and enhanced stewardship of historic cemeteries. Photo by Vine Lake Preservation Trust.*





# THE MASSACHUSETTS HISTORIC CEMETERIES PRESERVATION INITIATIVE

In 1999 the Massachusetts Department of Environmental Management (predecessor to the Department of Conservation and Recreation) implemented a program to provide technical assistance to communities for the preservation of public cemeteries. A unique historic landscape type, historic cemeteries and burial grounds were a threatened resource, as evidenced by the large number of applications to the Historic Landscape Preservation Grant Program. However, applications focused only on stone conservation and did not reflect a broader landscape preservation plan. Recognizing that historic burial grounds not only connect communities to their past, but also serve as critical open space, the Massachusetts Historic Cemeteries Preservation Initiative was designed to provide cities and towns with the tools to preserve these valuable resources.

One of the major components of the Initiative was a statewide study of a group of municipal cemeteries and burial grounds and the development of preservation guidelines to address common preservation problems. The resulting *Preservation Guidelines for Municipally Owned Historic Burial Grounds and Cemeteries* has been a welcome addition to the community toolkit for landscape preservation. As part of this bulletin recognizing the 10<sup>th</sup> anniversary of the *Guidelines*, the Department of Conservation and Recreation is pleased to offer the publication on CD-ROM.

## THE INITIATIVE AT-A-GLANCE

**32** case studies

**29** communities

**12** case study cemeteries listed on National Register since 2000

American Society of Landscape Architects Honor Award, 2000

**1000+** copies of the Guidelines distributed

**150** public cemetery managers and preservation advocates trained at a statewide educational workshop in 2000

**Ongoing** requests for technical assistance and funding

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## THE LAST WORD: TREATING A SYMPTOM OR FINDING A CURE

The first impulse in cemetery preservation efforts is usually to protect or treat the grave markers. After all, they are the obvious historic resource. But the condition of the stones is often indicative of a neglected landscape that is contributing to the deterioration of those historic resources. An untended landscape with overgrown vegetation and volunteer growth can create excessive shade and detrimental microclimates, fostering biological growth and choking out grasses or ornamental plantings. Inappropriately located paths, or paths that have inadequate widths can force pedestrians onto turf near graves, causing compaction and erosion. Formerly gravel paths and roads, now largely paved, create new drainage patterns with higher velocity run off into undersized storm water systems. Left unpruned, trees can grow into hazards with the potential to cause catastrophic damage to headstones and buildings during storm events. So, while the preservation of markers should be a high priority for many cemetery managers, deteriorating stones should always be considered a symptom, not a singular disease, within the living organism that is the historic landscape.

## RESOURCES

### STATE AGENCIES

The Executive Office of Energy and Environmental Affairs (EOEEA)  
617-626-1000 - [www.mass.gov/eoea](http://www.mass.gov/eoea)

Massachusetts Department of Conservation and Recreation  
617-626-1250 - [www.state.ma.us/dcr](http://www.state.ma.us/dcr)

DCR Historic Landscape Preservation Initiative  
<http://www.mass.gov/dcr/stewardship/histland/histland.htm>

Urban and Community Forestry Challenge Grant  
[www.mass.gov/dcr/stewardship/forestry/urban/urbanGrants.htm](http://www.mass.gov/dcr/stewardship/forestry/urban/urbanGrants.htm)

Massachusetts Historical Commission (MHC)  
617-727-8470 - [www.sec.state.ma.us/mhc](http://www.sec.state.ma.us/mhc)

MA Commission on Indian Affairs  
617-573-1291 - [www.mass.gov](http://www.mass.gov)

### NON-PROFITS

Alliance for Historic Landscape Preservation  
[www.ahlp.org](http://www.ahlp.org)

American Institute for Conservation of Historic and Artistic Works  
202-452-9545 - [www.conservation-us.org/](http://www.conservation-us.org/)

American Society of Landscape Architects  
202-898-2444 - [www.asla.org](http://www.asla.org)

The Association for Gravestone Studies  
413-772-0836 - [www.gravestonestudies.org](http://www.gravestonestudies.org)

Association for Preservation Technology International  
703-373-1621 - [www.apti.org](http://www.apti.org)

Community Preservation Coalition  
617-367-8998 - [www.communitypreservation.org](http://www.communitypreservation.org)

The Cultural Landscape Foundation  
202-483-0553 - [www.tclf.org/landscapes](http://www.tclf.org/landscapes)

National Center for Preservation Technology and Training  
318-356-7444 - [www.ncptt.nps.gov](http://www.ncptt.nps.gov)

National Trust for Historic Preservation - Northeast Office  
[www.nthp.org](http://www.nthp.org)

Partners for Sacred Places  
215-567-3234

Preservation Massachusetts  
617-723-3383 - [www.preservationmass.org](http://www.preservationmass.org)

Heritage Preservation Save Outdoor Sculpture!  
888-767-7285 - [www.heritagepreservation.org](http://www.heritagepreservation.org)

Vine Lake Preservation Trust  
[www.vinelakepreservationtrust.org](http://www.vinelakepreservationtrust.org)

### CEMETERY PRESERVATION PROGRAMS

The following is a sampling of statewide cemetery preservation programs and is not meant to be comprehensive.

Arkansas Historic Preservation Program  
501-324-9880 [www.arkansaspreservation.com/preservation-services/cemetery-preservation/](http://www.arkansaspreservation.com/preservation-services/cemetery-preservation/)

City of Boston Historic Burying Grounds Initiative  
617-635-4505 - [www.cityofboston.gov/parks/hbgi/](http://www.cityofboston.gov/parks/hbgi/)

Maryland Historical Trust  
410-514-7648 - [www.mht.maryland.gov/cedeteries.html](http://www.mht.maryland.gov/cedeteries.html)

Illinois Historic Cemetery Preservation Handbook (2008)  
[www.dnr.state.il.us/publications/pdf/00000581.pdf](http://www.dnr.state.il.us/publications/pdf/00000581.pdf)

Indiana Cemetery Heritage Marker Initiative  
[www.in.gov/dnr/historic/3746.htm](http://www.in.gov/dnr/historic/3746.htm)

Michigan Historic Cemetery Preservation Manual (2004)  
[www.michigan.gov/documents/hal\\_mhc\\_shpo\\_Cemetery\\_Guide\\_105082\\_7.pdf](http://www.michigan.gov/documents/hal_mhc_shpo_Cemetery_Guide_105082_7.pdf)

Oregon Commission on Historic Cemeteries  
[www.oregon.gov/OPRD/HCD/OCHC/](http://www.oregon.gov/OPRD/HCD/OCHC/)

Rhode Island Advisory Committee on Historical Cemeteries  
[www.historicalcemeteries.ri.gov/](http://www.historicalcemeteries.ri.gov/)

South Carolina State Historic Preservation Office  
[www.shpo.sc.gov/cempres](http://www.shpo.sc.gov/cempres)

Texas Historic Commission – Historic Texas Cemetery Program.  
[www.thc.state.tx.us/cemeteries/cemhtc.shtml](http://www.thc.state.tx.us/cemeteries/cemhtc.shtml)

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Birnbaum, Charles A. with Christine Capella Peters, *The Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for the Treatment of Cultural Landscapes*, Washington, D.C., National Park Service, 1996. [www.nps.gov/history/hps/hli/landscape\\_guidelines/index.htm](http://www.nps.gov/history/hps/hli/landscape_guidelines/index.htm)

Boston Parks & Recreation Department, *The Boston Experience: A Manual for Historic Burying Ground Preservation*, 2<sup>nd</sup> Ed., 1989.

Christy, Stephen F., Jr., "The Final Stop for Land Trusts," Land Trust Alliance newsletter, Spring 2007.

Keister, Douglas, *Stories in Stone: A Field Guide to Cemetery Symbolism and Iconography*, Layton, UT, Gibbs Smith, 2004.

Linden, Blanche, *Silent City on a Hill*, Boston, MA, University of Massachusetts Press, 2001.

Massachusetts Department of Conservation and Recreation, *Preservation Guidelines for Municipally Owned Historic Burial Grounds and Cemeteries*, 2000.

Massachusetts Historical Commission, *Know How #4 What to Do When Human Burials are Accidentally Uncovered*  
[www.sec.state.ma.us/mhc/mhpdf/knowhow4.pdf](http://www.sec.state.ma.us/mhc/mhpdf/knowhow4.pdf)

Mattison, Hugh, "Best Practices for Mulching Leaves: Notes on a Site Visit to Mount Auburn Cemetery," Muddy River Restoration Project Maintenance and Management Oversight Committee, October 2008.

National Park Service, *National Register Bulletin 41: Guidelines for Evaluating and Registering Cemeteries and Burial Places*  
[www.nps.gov/history/NR/publications/bulletins/nrb41/](http://www.nps.gov/history/NR/publications/bulletins/nrb41/)

Rainey, Reuben M., "Therapeutic Landscapes: America's Nineteenth-Century Rural Cemeteries," *View: The Magazine of the Library of American Landscape History*, Summer 2010.

Sloane, David Charles, *The Last Great Necessity: Cemeteries in American History*, The Johns Hopkins University Press, Baltimore, 1991.

Strangstad, Lynette, *Preservation of Historic Burial Grounds*, National Trust for Historic Preservation, 2003.

University of Massachusetts Amherst, Department of Plant and Soil Sciences: Soil Tests for Turfgrass  
[www.umass.edu/plsoils/soiltest/turfinter1.htm](http://www.umass.edu/plsoils/soiltest/turfinter1.htm)