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Abstract

The protection and management of pioneer cemetery prairies is a daunting challenge. As the public has become accustomed to highly manicured grass in their backyard lawns, neighborhood parks and cemeteries, prairie cemeteries, with grasses three- to six-feet tall, are often thought to be abandoned or unkept even though the cemeteries retain their original vegetation. Caring for prairie plants, protecting cemetery stones, and providing public access need not be goals that stand in conflict. Working in conjunction, cemetery advocates, archaeologists, and plant biologists can reach satisfactory accommodations. This paper gives an overview of the protection status of pioneer cemetery prairies and savannas in Illinois and the issues faced by those managing for the natural vegetation within these cemeteries along with providing an approach on how to deal with potential conflicts arising between the need to preserve the cultural heritage of the cemetery and conduct management necessary to maintain the historic prairie and savanna communities.

Keywords: cemetery prairies, cultural values, cemetery management, cemetery preservation

Introduction

Cemeteries are fascinating places where it is possible to easily explore the past. Some of the early pioneer cemeteries within Illinois also offer an opportunity to experience natural resources not otherwise available. The juxtaposition of valuable historic and natural resources found in these cemeteries presents challenges. As interest in genealogical research and cemetery visitation increases those managing natural vegetation are no longer able to do so without consideration for the preservation of cultural resource values. Hence, those managing the natural biological resources must address concerns expressed by those from the cultural history community or be forced to abandon crucial management techniques, such as prescribed burning and exotic species control, in favor of the lawnmower. This paper explores the natural and cultural values of rural pioneer cemeteries and provides guidelines for the challenging management decisions faced by biologists and cultural historians.

Illinois legislation recognizes two types of cemeteries—registered and unregistered cemeteries. Registered cemeteries are regulated through the Comptroller's Office. Unregistered cemeteries are often small, inactive, usually abandoned and are under the jurisdiction of the Illinois Historic Preservation Agency (Human Skeletal Remains Protection Act 20 ILCS 3435, IAC 4170). The primary distinction is that unregistered cemeteries are legally regarded as historic resources. Pioneer cemeteries managed for natural vegetation generally fall into one of two categories: active cemeteries (registered and unregistered) where the prairie/savanna community exists outside of the burial area, and unregistered cemeteries that are closed to future burials where the grave markers are found within the natural prairie community.

Natural Heritage Resources

There are 39 cemeteries located on property owned by the Illinois Department of Natural Resources Illinois (IDNR) (Illinois Department of Natural Resources, Division of Land Management). In 1990, IDNR initiated a Cultural Resource Management Program, which includes historic cemetery studies (Hassen, unpublished report). As part of this program, IDNR is documenting the historic resources on all cemeteries owned by IDNR.

Illinois Department of Natural Resources also provides assistance on cemeteries not owned by the state, but having significant natural communities. The Illinois Natural Areas Inventory (INAI) lists 29 pioneer cemetery prairies within the state that have high-quality, natural prairie and savanna vegetation (IDNR, Division of Restoration Ecology and Stewardship). Of these 24 (83%) are currently protected under the Illinois Nature Preserves System (Table 1, Illinois Nature Preserves Commission). This includes a total of 51.6 acres (20.9 ha or more than 74% of the total 69.7 acres (28.2 ha) of high-quality prairie and savanna found in pioneer cemeteries within Illinois.

The natural communities within these cemeteries range in size from 0.5 to 9.9 acres (0.2 to 4 ha), with an average of

2.2 acres (0.9 ha). Considering the small size of cemetery prairies, most have an extremely high diversity of native prairie and savanna plants—average 114 species (Illinois Nature Preserves Commission). Betz and Lamp (1990) noted that the diversity of native prairie plants was directly related to the type of management with non-prairie species much less prevalent in prairie that had little if any mowing history and had been burned regularly. They also noted a negative effect on prairie plant diversity as the result of the introduction of decorative grave plants.

Many of these pioneer cemeteries enrolled in natural resource protection programs are owned by municipalities, including local townships (10) and county forest preserve (2) and conservation districts (1). Seven are owned by local cemetery associations, two by non-profit conservation groups, one by a county soil and water conservation district, and one has a joint ownership between a township and a non-profit conservation group (Illinois Nature Preserves Commission). Local volunteer groups provide the majority of the stewardship and management for these pioneer cemeteries. Of the 27 prairies listed on the INAI, most were established as burial sites at the beginning of historic settlement between the 1830s and 1880s. The exception is Roberts Cemetery Prairie, Montgomery County, where the first burial was in 1807, 11 years before Illinois became a state. Only five of these cemeteries remain open to future burials, while many of the remaining 24 were closed for burials between 1900 and 1950 (Illinois Nature Preserves Commission).

Illinois Conservation Law (525 ILCS 30/10) states that "any part or all of a cemetery that is suitable for [nature preserve] dedication may be dedicated by the owner or other cemetery authority." However, dedication of a cemetery does not affect its original status as a cemetery. These cemeteries all contain high quality natural prairie or savanna vegetation and are managed for the preservation of the historic vegetative communities as well as their cultural values.

Natural Vegetation Management

The control of exotic herbaceous plants and aggressive native shrubs is one of the greatest threats to the integrity of these cemetery natural areas. Troublesome plants can be broken down into two main categories: disturbance-adapted species and grave plantings. The top disturbance species include white sweet clover (*Melilotus alba*), wild parsnip (*Pastinaca sativa*), wild asparagus (*Asparagus officinalis*), Kentucky blue-

Table 1. Protection status of pioneer cemetery prairies and savannas in Illinois (Illinois Nature Preserves Commission).

Site Name	County	Protection Program
Byler Cemetery Savanna	Adams	Nature Preserve
Hetzler Cemetery Prairie	Bureau	Nature Preserve
Brookville Lutheran Cemetery Prairie*	Carroll	Nature Preserve
Chandlerville Cemetery Hill Prairie	Cass	Land and Water Reserve
Tomlinson Pioneer Cemetery Prairie	Champaign	Nature Preserve
Afton Cemetery Prairie	DeKalb	none
Prospect Cemetery Prairie	Ford	Nature Preserve
Short Pioneer Cemetery Prairie	Grundy	Nature Preserve
Greenlee Cemetery Prairie	Henry	Nature Preserve
Munson Township Cemetery Prairie	Henry	Nature Preserve
Loda Cemetery Prairie	Iroquois	Nature Preserve
Scotch Cemetery Prairie	Knox	Natural Heritage Landmark
Voight Pauper Cemetery Prairie	LaSalle	Land and Water Reserve
Temperance Hill Cemetery Prairie	Lee	Nature Preserve
Weston Cemetery Prairie	McLean	Nature Preserve
Brownlee Cemetery Prairie	Mercer	Nature Preserve
Roberts Cemetery Prairie	Montgomery	Nature Preserve
Beach Cemetery Prairie	Ogle	Nature Preserve
Root Cemetery Savanna	Peoria	Nature Preserve
Springdale Cemetery Savanna*	Peoria	Natural Heritage Landmark
St. Mary Cemetery Hill Prairie*	Peoria	Natural Heritage Landmark
Mt. Palatine Cemetery Prairie	Putnam	Nature Preserve
Kincaid Cemetery Prairie	Scott	none
Fairchild Cemetery Savanna	Vermilion	Nature Preserve
Pellville Cemetery Prairie	Vermilion	none
Spring Grove Cemetery Prairie	Warren	Nature Preserve
Clyde Cemetery Prairie*	Whiteside	none
Sandy Town Cemetery Prairie*	Whiteside	none
Vermont Cemetery Prairie	Will	Nature Preserve

* cemetery remains open to new burials

grass (*Poa pratensis*), and smooth brome (*Bromus inermis*). The principle grave plantings that present the biggest concern, because they spread from the initial planting location adjacent to a tombstone to cover a large areas of the cemetery, include orange day-lily (*Hemerocallis fulva*), garden iris (*Iris germanica*), cypress spurge (*Euphorbia cyparissias*), star-of-Bethlehem (*Ornithogalum umbellatum*), lily-of-the-valley (*Convallaria majalis*), common periwinkle (*Vinca minor*), live-forever (*Sedum purpureum*), yucca (*Yucca flaccida*), and common liliac (*Syringa vulgaris*).

While non-native plantings of flowers, shrubs, and trees placed next to the grave following burial are recognized as part of the cultural heritage, occasionally the vegetation spreads to the extent that it directly affects other grave markers and traps moisture, which can lead to faster stone deterioration. The uncontrolled spread of non-native plants is a concern to the natural vegetation management. Typically if the planting remains in its original location and does not affect other graves, it is not removed. If it does spread to other graves and threatens their preservation the plants should be controlled. Herbicides may be used when hand-pulling is not possible to control the spread of aggressive non-native plants within the cemetery. However, since these chemical are harsh, grave stones should be covered to protect them from spray drift.

Natural vegetation management of pioneer cemeteries is typically done by people with a great deal of experience in prairie and savanna restoration but with little knowledge of caring for material culture. Since grave markers must be protected we advise care in vegetation management techniques. The use of mowers and trimmers (push and powered) with metal blades is not recommended as contact can cause serious damage to the fragile stones (Strangstand 1995). While hand pulling or the use of small hand tools is preferred when weeding directly next to the stone, plastic filament trimmer can be safely used when maintaining an access pathway into the cemetery. When constructing paths, the drainage within the cemetery must be considered as to avoid the pooling of excess water or increasing moisture content in relation to the location of grave stones. Soil erosion is also a great concern on sloping ground.

Many cemeteries are enclosed within a fence. While fences attract birds that drop unwanted seed along the fence leading to a tangle of vines and woody shrub growth along the fence line, their benefits outweigh the negatives. Fences mark the boundary and prevent incidental encroachment from neighbors with different land uses. Historic fences also represent an important cultural element that has historical significance.

The use of prescribed fire in pioneer cemeteries has resulted in a great deal of controversy in recent years. Unfortunately, there is no long-term evidence that fire is either detrimental or beneficial to the preservation of stone markers. While occasionally markers may incur scorching from fire, persistent scorching is typically rare in cases where the vegetation is regularly burned and excessive fuels are not allowed to accumulate. Preliminary evidence on fire conducted within cemetery prairies in Illinois during the past decade has shown mixed results. Within some of the cemeteries that were burned on a nearly annual basis with fires that consumed nearly all of the vegetative debris, the stones were remarkably legible and intact. Stones within prairie cemeteries with frequent burns and higher fuel consumption rates (e.g., Brownlee Cemetery Prairie Nature Preserve, Spring Grove Cemetery Nature Preserve) did have more black soot deposited on the stone following the burn as compared with savanna cemeteries that burn less completely and less frequently (e.g., Root Cemetery Savanna Nature Preserve, Byler Cemetery Savanna Nature Preserve). But, the black soot on stones within Brownlee Cemetery was easily washed off using a water mist bottle. There have been a few personal observations in which raised letters on stones have come off due to intense heat from the fire. Research of the use of heat shield coverings could be useful to determine if there is a practical method to help protect stones susceptible to this type of heat damage.

Prescribed fire in a small (less than 5-acre or 2-ha) cemetery has a much lower intensity than the prairie fires that ravaged the area during early settlement. The heat generation from these fires is much less today than it was 150 years ago. The burning of fuel within a cemetery reduces the amount of moisture—one of the chief factors contributing to stone deterioration (National Trust for Historic Preservation 1993). Observations of stone markers within woodland cemeteries on IDNR land (e.g., Atkinson and McCord Cemetery, Argyle Lake State Park) that have not been managed with fire had excessive moisture buildup leading to a much greater degree of deterioration than those stones in Brownlee Cemetery, which had been burned annually. We recommend additional research on this subject. The continued documentation of the condition of the stones will provide us with a means to monitor changes over time.

While burning is very important to maintaining the historic vegetation, managers need to consider the protection of the stone markers. Excessive fuel (especially brush piles and downed trees) should be removed from the site and away from any markers to prevent heat damage. Fire-retardant chemicals or wetting agents should never be used on grave stones. Lining the surrounding ground around a marker with foreign stones is also not recommended as the introduction of a stone with different chemical properties could affect the marker's properties leading to further deterioration. Removal of fuel from around the stones is the best way to reduce the heat intensity.

Cultural Values

Because of the messages contained within them, cemeteries are more about the living than the dead. These messages reflect choices. The shape of the headstone, the use of symbols and the text all convey information that, although not necessarily overtly recognized by the participants, nonetheless provides us with a unique opportunity to explore their world. Books and oral accounts are important when understanding the past. However, the study of material cultural, especially when left in its original context is a critical component in

piecing together the past. Cemeteries contain very specific and limited types of material culture. And, unless neglected or vandalized, the material culture is in its original context in contrast to more traditional archeological sites.

Because cemeteries involve both the living and the dead, they contain valuable information about societies and peoples that may no longer be present. Cemeteries are dynamic, reflecting changing cultural institutions, social values, and religious and ethnic composition. History focuses on important people and events. Cemeteries provide anthropologists and historians an important opportunity to study the common individual within a very important social institution, death and religion. The symbols and texts inscribed on gravestones, the type and shape of headstones as well as the spatial structure and location of the cemetery are important pieces of information for understanding the past. When cemeteries are ignored and allowed to deteriorate and gravestones area destroyed, societies lose an important part of their identity.

The process of understanding and preserving cemeteries begins with documentation. Collecting a variety of information helps identify the differences and similarities that may reflect ethnic and socioeconomic patterns. This first step is generally done in winter or early spring or after a prescribed fire. This process involves the use of compass and measuring tape to create a cemetery map by which the spacial arrangement of markers and the cemetery boundary area established. The condition of the markers is recorded by digital photo. Information derived from the markers, including shape, written information and symbols and orientation of markers is also recorded. The shape of the grave marker, whether it is an individual grave marker, obelisk or cenotaph monument is also important. Symbols carved into the markers will have religious or secular significance; i.e. a willow tree represents weeping or sorrow, a lamb represents the loss of a young child. Other symbols may reflect participation in fraternal organizations, the military, or an individual's craft.

Information on the physical condition of the marker is important baseline data to document future deterioration of markers. Stone deterioration is a natural process and is a combination of chemical, physical, and biological processes. Whether the marker has fractures, breaks, wear, has sunk into the ground, fallen, or replaced in-pile is recorded by photos and written documentation. Timely revisits help evaluate potential threats to the cemetery.

Materials used as grave markers by the early pioneer settlers to the Midwestern prairies varied with marble being the most common followed by limestone and sandstone (Taylor 1988). For others, flat stones were collected from nearby creeks and were hand-hewn with the names or initials of the deceased. During the 1880s, concrete was also used for markers; granite became the preferred material during the late 1800s (Taylor 1988). The use of metal, particularly to denote war veterans, was used starting in the mid–1800s.

In the Midwest, most graves were placed facing east towards the rising sun. Occasionally stones faced a stream. The majority of cemeteries were laid out in a grid of straight rows. During the 1830s and 1840s winding roads and irregular terrain resulted in some cemeteries monuments being laid out in a curved pattern.

Cultural Maintenance

The preservation of markers is a delicate and sometimes controversial issue. We recommend the use of caution so as to prevent the acceleration of the natural deterioration process. A complete and thorough documentation of the condition and location of all markers should be completed prior to taking on the task of cleaning or moving any of the stones. When cleaning stones, water or a 1:4 ammonia-water solution is preferred (National Trust for Historic Preservation 1993). Cloth rags, soft bristle brushes, and some plastic and wooden spatulas can be used to remove dirt and moss. Do not use harsh chemicals or metal tools in the cleaning process (National Trust for Historic Preservation 1993, Strangstad 1995).

Extreme care should be used in moving any marker. Probing of the soil with a thin metal rod to locate buried markers should be conducted by a trained individual. Once a buried stone is located it should most often be left in this condition as digging up a stone could result in breakage if done improperly. If necessary move only one marker at a time to avoid confusion as to its original location. Once again, extreme caution should be used in the digging and resetting of stones. This should only be done by a well-trained individual experienced in this process. Unfortunately there is no certification process and many people claiming to be experts do not use proper methods in the treatment of fragile marble and sandstone markers. These markers should not be set in concrete or another material that will have different properties than the original stone. Concrete is permanent and cannot be reset (Taylor 1988). The propping of tablets against other stones may be precarious as left unsecured the tablet could fall and break even further. The more times a marker falls the more likely the loss of information from the stone.

The use of rubbings to record the information on grave markers is discouraged for older fragile stones. For cemeteries owned by IDNR, a permit is recommended to take rubbings of grave markers (Hassen, unpublished report). This permit system includes specific guidelines to be followed to prevent damage to stone markers. The widespread use of digital photograph is a far better method for recording grave marker information. Photographs do not involve direct contact with the fragile stones therefore eliminating the potential for harm. Furthermore, well-worn marble and sandstone markers do not generate good rubbings. For markers in which the writing is difficult to read due to excessive wear, wetting the stone with water may make the writing more legible and better for photo documentation.

Conclusion

There is a delicate balance between protecting the natural resource and the cultural resource when the management options may be in conflict. Providing information on both the natural and cultural resources found at a specific cemetery will enable visitors to gain an appreciation for all the resources. In most instances, resources protection requires compromise involving the participation of various constituents. Unilateral decisions are often difficult to justify. Bringing groups from both natural areas management and those interested in historical preservation into the decision making process is more likely to yield successful solutions.

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