

Landscapes of the Dead: An Argument for Conservation Burial

By Alexandra Harker

Abstract

The American funeral industry has long influenced how and where we bury the dead. Current industry-standard burial practices harm the environment through the use of embalming and hardwood caskets. This article argues for a different model for burials, one which will preserve open space, incorporate cultural landscapes into cities and regions, and increase the ecological sensitivity of burial practices and social acceptance of death as a natural process. Conservation burials support ecological restoration and can help finance public open space and preserve ecological lands. City planners are in a unique position to promote this new model of burial practice by framing cemeteries as green infrastructure.

Keywords: burial, conservation, infrastructure, cemeteries

Introduction

Disposing of the dead has been a necessary public service for as long as humans have lived in communities (Mumford 1961). Burial is intertwined with the spaces that humans occupy, and cemeteries have through history provided open space to urban residents. Mount Auburn Cemetery, which opened in Cambridge, Massachusetts in 1831, is one of the first large-scale urban public parks in the United States. The current American funeral industry, however, no longer plays an integral role in community or ecological preservation.

This paper argues for conservation burials, those that both forgo chemical embalming and hardwood caskets and provide revenue for land preservation. Conservation burials can result in the creation of urban open space and the preservation of rural land. They can also integrate cultural landscapes into cities and regions while increasing the ecological sensitivity of burial practices and the social acceptance of death as a natural process. City planners, in particular, can play a key role in promoting conservation burials by incorporating burial practice into the larger context of public infrastructure planning. Taking a role in the development of the next generation of cemeteries, planners can use policy and incentives to set

the framework for financially self-sufficient open spaces, both public and private, which are ecologically and culturally rich.

This paper starts by looking at contemporary burial practices, arguing that their ecological and public health consequences are significant enough to reevaluate the current model. Natural burial eliminates many of these consequences, but stops short of providing a sustainable economic foundation for open space, which conservation burial provides. Case studies demonstrate the feasibility of conservation burial and provide a concrete framework for implementation. The final section of this paper looks at some of the ways that urban planners can promote conservation burial.

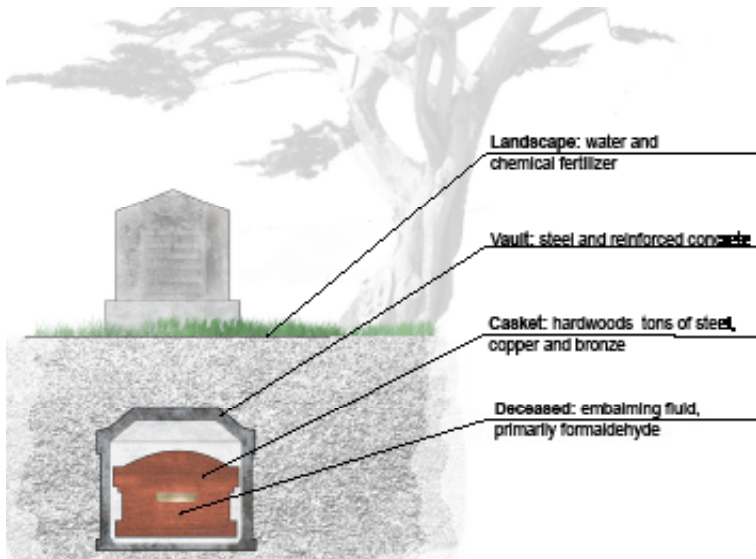


Figure 1: Conventional burial in the United States is resource intensive.

Contemporary Burial Practice

Contemporary funeral practices and cemeteries are ecologically problematic. Digging in a modern cemetery in the United States is much like digging through a toxic waste site. Every year in the United States, the chemicals and materials buried along with bodies in a conventional burial include approximately 30 million board feet of hardwoods, 2,700 tons of copper and bronze, 104,272 tons of steel, and 1,636,000 tons of reinforced concrete (Greensprings Natural Cemetery Preserve 2011). Also buried are approximately 827,060 gallons of embalming fluid, primarily formaldehyde. Exposure to formaldehyde affects funeral workers' health, demonstrated by a high incidence of leukemia and brain and colon cancer among embalmers (Holness 1989). The pollutants are not limited to the area

in which they are buried. In one study, soil samples taken at coffin depth revealed elevated concentrations of metals used in casket construction, including copper, lead, zinc, and iron (Sponberg and Becks 2000).

Formaldehyde and other preservatives are pumped into bodies as part of the embalming process that, although not required by law in the United States, is characteristic of contemporary burial. Although a key justification for embalming is that it slows decay, it does not prevent it. The next step in this complex ritual to deter decay is placing the body in an oftentimes hermetically sealed hardwood or metal casket. To prevent uneven settling of the soil at the surface, the casket is placed in a thin concrete vault. (Figure 1). There is no legal requirement to use vaults, but most private cemeteries in the United States require them. These vaults are then placed in modern “memorial parks,” extensive water-consuming lawns that are doused with chemical fertilizers to keep them a vibrant green. As seen in Figure 2, memorial parks are the culmination of American burial practices that began with frontier graves.

	Period	Design	Location	Management Structure
Frontier Graves	17th-20th c.	None	Site of death	Isolated; no design
Domestic	17th-20th c.	Geometric	Farm field	Small; family owned; functional design
Churchyard	17th-20th c.	Geometric or formal garden	Next to church	Religious ownership; functional design
Potter's Field	17th-20th c.	Geometric	City borders	Public ownership; functional design
Town/City Cemetery	17th-20th c.	Formal garden	City borders	Family or government owned; formal design
Rural Cemetery	1831-1870's	Picturesque, natural garden	Suburb	Private ownership; garden aesthetic; mausoleums
Lawn-park Cemetery	1855-1920's	Pastoral, parklike	Suburb	Entrepreneurial; suburban aesthetic; mausoleums
Memorial Park	1917-present	Pastoral, suburban	Suburb	Entrepreneurial; suburban aesthetic; mausoleums

Figure 2: Characteristics of American Cemeteries. Adapted from Sloane DC: *The Last Great Necessity: Cemeteries in American History*. Baltimore, MD. The John Hopkins Press, 1991, pp 4-5.

In addition to conventional burial, cremation is a popular contemporary practice. Over 50 percent of Californians already choose cremation, and these numbers are anticipated to rise (Platoni 2008). In Marin County, over eighty percent of people choose to be cremated, according to Ron Hast, publisher of *Mortuary Management Magazine and Funeral Monitor* (Fimrite 2004). While cremation has fewer harmful environmental effects than traditional burial, the cremation process releases carbon monoxide,

fine soot, sulfur dioxide, and heavy metals into the atmosphere. Mercury emissions from dental fillings are of particular concern. Additionally, cremated remains are sterile, and so do not contribute nutrients to ecological cycles (Platoni 2008). Thirteen percent of people who choose cremation cite land conservation as a reason (CANA 2011). This suggests a potential market for conservation burial, which is even less energy intensive and more environmentally friendly than cremation.

In addition to environmental and public health concerns, conventional burials are quite expensive. The average adult's funeral, including undertaker's bill, cemetery fees, a burial vault, flowers, clothing, transportation, and other related charges costs about \$10,000 (Platoni 2008). With 1.8 million people buried every year, the funeral industry is a \$15-billion-a-year business. Conservation burial can lower costs, and redirect funds towards land conservation. Cremation, at around \$1,400, is significantly less expensive than burial. More than environmental attitudes, this cost difference is driving the strong and growing interest in cremation.

A New Model of Conservation Burial

Natural burial is hardly a new or innovative concept. Embalming has been practiced in the United States for a relatively short period of time. Natural burials were long the default, and many Americans continue to rely on natural burial practices. Both cremation and embalming are against Jewish religious practice. Conservation burial offers a new opportunity to use an old practice to promote rural conservation and urban open space. More than returning nutrients to the land, the great potential for conservation burial is to conserve land, create open space, and restore natural habitats.

In dense urban areas, cemeteries provide places for nature and recreation. Cemeteries also provide habitat for wildlife, and have been identified as areas with "potentially high levels of biotic diversity," especially in urban areas (Gilbert 1991, Laske 1994, Barrett, 2001). Gary and Terry Berrett (2001) argue that even small burial grounds contribute to biotic diversity. Cemeteries serve as ecological patches and corridors that, regardless of their size, collectively support habitat. Cremation does not serve this function.

At a larger scale, conservation burials have the potential of financing land preserves. Ramsey Creek Preserve in South Carolina is regarded as the first cemetery started with the explicit intention of providing a space for natural burial in the United States (Campbell 2010). The preserve opened in 1998 and an easement was transferred to a conservation group in 2006. Conservation easements—mechanisms for ensuring environmental

stewardship of the land in perpetuity—are legal agreements to turn land over to a nonprofit organization or a government agency.

At Ramsey Creek Preserve, a percentage of every plot sale goes into a permanent endowment to ensure continued care and conservation of the land. The founder of Ramsey Creek Preserve, Dr. George William Campbell, MD, defines natural burial as using a biodegradable casket without a vault for burial and no embalming fluids in the body. Biodegradable casket options include bamboo, paper, cardboard, wool, banana leaf, and willow. In natural burials, grave digging and other cemetery functions are performed in a way to minimize impact on the surrounding land. Dr. Campbell distinguishes conservation burial from natural burial by describing it as “natural burial that serves a higher, significant conservation purpose.”

Since the establishment of Ramsey Creek Preserve, a number of additional conservation burial sites have opened across the United States. The location of these sites is mapped in Figure 3, while Figure 4 compares these sites in terms of acreage, ownership structure, and burials per acre. Most are adjacent to larger conservation areas, thus supporting existing efforts to create wildlife corridors and preserve larger ecosystems. For example, the White Eagle Memorial Preserve in Washington is set within 1,300 acres of permanently protected forest and meadow and Honey Creek Woodlands in Georgia is part of an 8,000-acre conservation effort known as the Arbaia Mountain Heritage Area.

Conservation burial prices vary by location and by plot but in general are cheaper than their conventional counterparts. Biodegradable caskets are less expensive than hermetically sealed hardwood ones, and there is no additional charge for a concrete burial vault. At the high end, Fernwood Forever charges \$6,600 for each plot. It is unclear if that amount includes the grave opening and closing fee. At the low end, Greensprings Natural Cemetery Preserve charges \$1,450 per plot, which includes the fee for opening and closing the grave. Most conservation burial plots are in the \$3,000 dollar range. As with conventional burial, preferred plots command a premium. At Honey Creek Woodlands it is possible to get a plot in the meadow area for \$2,500, in the mature woodlands for \$3,500, and on the hilltop for \$4,500.



Figure 3.

	Date Established	Location	Acreage	Ownership Structure	Burials per acre	Policy on Grave Markers
Steelmantown Cemetery	Natural burial by default from 1700	Marshallville, New Jersey	10	Proprietor, with deed restrictions in place that do not allow embalming or vaults	Approximately 870	Natural stone
Ramsey Creek Preserve	1998	Westminster, South Carolina	71	Conservation group	30	Indigenous stone
Glendale Memorial Nature Preserve	2002	DeFurmak Springs, Florida	70	Non-profit organization	Between 30 and 100	Engaved, flat, natural stone or native tree or plant
Fernwood Forever	2004	Marin, California	32 (of which half is natural burial)	Proprietor	Up to 700	Natural stone, native plants and trees
Greensprings Natural Cemetery Preserve	2005	Newfield, New York	100	Land trust	Up to 200	Indigenous stone no more than 400 inches square and flush with ground
Honey Creek Woodlands	2008	Caryers, Georgia	1,000	Land trust, monastery	30 to 100	Engaved, flat, unpolished stone with less than 216 square inches of surface area
The White Eagle Memorial Preserve	2008	Goldendale, Washington	20	Non-profit, community-stewarded land trust	Up to 110	Engaved, indigenous stone
Foxfield Preserve	2008	Wilmot, Ohio	43	Non-profit conservation organization	100 to 200	Engaved, flat, unpolished stone with less than 216 square inches of surface area, native tree

Figure 4: Data for both chart and map collected from: (“White Eagle Memorial Preserve natural burial ground,” n d)(“Honey Creek Woodlands,” n d)(“Ramsey Creek Preserve,” n d)(“Greensprings Natural Cemetery Preserve - Home,” n d)(“Steelmantown Cemetery, South Jersey - Green Burials - Certified and Approved by Green Burial Council as Level 2 Natural Burial Ground,” n d)(“GREEN BURIAL - Glendale Memorial Nature Preserve,” n d)(Thompson, 2002)

City Planning and Conservation Burial

City planners are in a unique position to instigate change in contemporary burial practice. Basmajian and Coutts (2010) articulate the potential for planners to influence the burial process and describe how “designs that accommodate multiple uses and conservation space might bring burial facilities back into community life and simultaneously contribute to a community’s green infrastructure” (315).

Cities should have the foresight to include these ecologically and culturally rich places in their comprehensive plans. Bringing the cemetery back into the mainstream of local planning and civic culture increases the visible presence of natural and conservation burial. Such visibility serves the public by giving people an informed picture of their end-of-life options.

There are additional socioeconomic advantages to conservation burial, in that “sacredness serves the practical purpose of preservation” (Hester 2006, 135). Burying the dead imbues a place with a sense of meaning, which has the potential to connect people to their environment and community. Many cultures embrace the connection between the environment and death; for example, planting a tree for the dead is common in Israeli culture. By seeing entire habitats and landscapes as “embodiments of personal and cultural identity and history,” people are motivated to be stewards of the land, taking action “to maintain, restore, and improve [their] community, the landscape, and larger ecosystems” (Hester 2006, 364). Such efforts also have the potential to bring community members together for a common cause.

Planners can support conservation burial through policy incentives, permits, comprehensive land use plans, zoning ordinances, and environmental regulations. Environmental ordinances can give planners leverage to encourage the creation of more environmentally sensitive cemeteries. In order to create and follow through with specific ecological conservation goals, baseline information about existing geology, hydrology, soils, topography, plants, and wildlife must be collected. Guidelines need to be established to bring credibility to the conservation burial process and they need to address issues of burial plot density, preparation of the body, and materials used. Deed restrictions or conservation easements should be used, and they should incorporate standards to protect the land as open space and ensure that the site is accessible to the public. Potential management structures for conservation burial include land trusts, conservation organizations, nonprofit organizations, and individual proprietorship with a conservation easement in place. Conservation burial sites can also be owned by, or operated in conjunction with, a government agency. Planners can anticipate future death rates and make informed decisions about where and how new cemeteries are built using tools such

as Geographic Information Systems and resources for information such as the US Census.

Conclusion

Conservation burial has the potential to reduce the impact of burial on the environment, reconnect people with the processes of nature, and finance public open space. This is in contrast to the relatively sterile, resource-consuming, business-driven conventional burial of today. Kenneth T. Jackson (1989) characterizes cemeteries of the last decade of the twentieth century as “the cemetery as a business,” (98) claiming that “the shape of [future cemeteries] in this age of changed resources and values is, as yet, unknown” (122). Clearly, conservation burial is the next iteration of the American burial.

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References

- Barrett, Gary. 2001. "Cemeteries as Repositories of Natural and Cultural Diversity." *Conservation Biology* 15 (6): 1820–1824.
- Basmajian, Carlton, and Christopher Coutts. 2010. "Planning for the Disposal of the Dead." *Journal of the American Planning Association* 76, no. 3 (June): 305–317. doi:10.1080/01944361003791913.
- California State Cemetery and Funeral Bureau. 2011. Accessed April 21. <http://www.cfb.ca.gov>.
- Campbell, George William. 2010. *Ramsey Creek Preserve*. Accessed December 15. <http://www.memorialecosystems.com/Locations/RamseyCreekPreserve/tabid/58/Default.aspx>.
- CANA. 2011. *Cremation Association of North America*. <http://www.cremationassociation.org>.
- Fimrite, Peter. 2004. "Marin Cemetery: Ashes to Ashes, Dust to Mulch." *SF Gate*. <http://www.sfgate.com/cgi-bin/article.cgi?file=/chronicle/archive/2004/08/22/MNGEV8CIGT1.DTL>.
- Gilbert, O. 1989. *The Ecology of Urban Habitats*. London; New York: Chapman and Hall.
- Green Burial Council. 2011. *Welcome to the Green Burial Council*. Accessed April 29. <http://www.greenburialcouncil.org>.
- Harris, Mark. 2008. *Grave Matters: A Journey Through the Modern Funeral Industry to a Natural Way of Burial*. New York: Scribner.
- Hester, Randolph T. 2006. *Design for Ecological Democracy*. Cambridge, MA: MIT Press.
- Holness, D. Linn and James R. Nethercott. 1989. "Health Status of Funeral Service Workers Exposed to Formaldehyde." *Archives of Environmental Health* 44 (4): 222–228.
- Honey Creek Woodlands. 2011. Accessed March 24. <http://www.honeycreekwoodlands.com>.
- Iserson, Kenneth. 1994. *Death to Dust: What Happens to Dead Bodies?* Tucson AZ: Galen Press.
- Jackson, Kenneth. 1989. *Silent Cities: The Evolution of the American Cemetery*. New York: Princeton Architectural Press.

- Memorial Ecosystems. 2010. Accessed December 15. <http://www.memorialecosystems.com>.
- Mumford, Lewis. 1961. *The City in History*. San Diego: Harcourt, Brace & World, Inc.
- National Funeral Directors Association. 2011. "Home - National Funeral Directors Association." Accessed May 4. <http://www.nfda.org>.
- . 2011. "U.S. Cremation Statistics." Accessed April 21. <http://www.nfda.org/consumer-resources-cremation/78-us-cremation-statistics.html>.
- Platoni, Kara. 2008. "DISPATCH: Die Green." *Terrain Magazine*. <http://ecologycenter.org/terrain/issues/summer-2008/dispatch-die-green>.
- Rana Creek. 2011. Accessed May 1. <http://www.ranacreek.com>.
- Rogers, Elizabeth Barlow. 2001. *Landscape Design: A Cultural and Architectural History*. New York: Harry N. Abrams.
- Sloane, David. 1991. *The Last Great Necessity: Cemeteries in American History*. Baltimore: Johns Hopkins University Press.
- Spongberg, Alison L., and Paul M. Becks. 2000. "Inorganic Soil Contamination from Cemetery Leachate." *Water, Air, & Soil Pollution* 117: 313-327. doi:10.1023/A:1005186919370.
- Thompson, J. 2001. "A Natural Death: Is the Industrial-Strength American Funeral the Right Way to Bury our Loved Ones?" *Landscape Architecture* 92 (10): 74-79.
- White Eagle Memorial Preserve Natural Burial Ground. 2011. Accessed April 30. <http://www.naturalburialground.com>.
- Worpole, Ken. 1997. *The Cemetery in the City: A Report*. Stoud Glos.: Comedia.