

# Spatial trends of green burial grounds, U.S.

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## Introduction

Green burial refers to the act of burying a body in a way that minimizes the environmental impact of the burial process as much as possible (NFDA, n.d.). A green burial ground, therefore, is a cemetery or section of a cemetery in which green burials are permitted to take place. Green burials generally occur without chemical embalming, metal caskets, concrete vaults, or large grave markers. Rather, bodies remain unembalmed and are placed in biodegradable vessels, such as cotton shrouds or bamboo coffins (Figure 1), before being lowered into a grave, which may be marked with a native plant (Figure 2), a small engraved stone, or is simply located using GPS (USFuneralsOnline, n.d.). The Green Burial Council (GBC), an organization which helped pioneer the green burial movement in the U.S., outlines three forms of green burial: hybrid, natural, and conservation. Hybrid cemeteries refer to burial grounds which accommodate both traditional and green burials, natural cemeteries are those which allow only green burials, and conservation cemeteries allow only green burials while also actively working to conserve the land on which the cemetery is found (GBC (a), n.d.). What is today considered “traditional” burial is actually fairly modern. Chemical embalming did not become popular until the Civil War when deceased soldiers had to be transported considerable distances to be buried in their home states. However, the practice quickly became commonplace, contributing to environmental degradation due to the introduction of toxic chemicals and nonbiodegradable substances into the earth as well as the emission of carbon dioxide and lead during cremation (GBC (b), n.d.). Because green burial is a plausible alternative to traditional burial and can effectively help to protect the environment, the purpose of this analysis is to determine the accessibility and spatial patterns of green burial in the U.S.

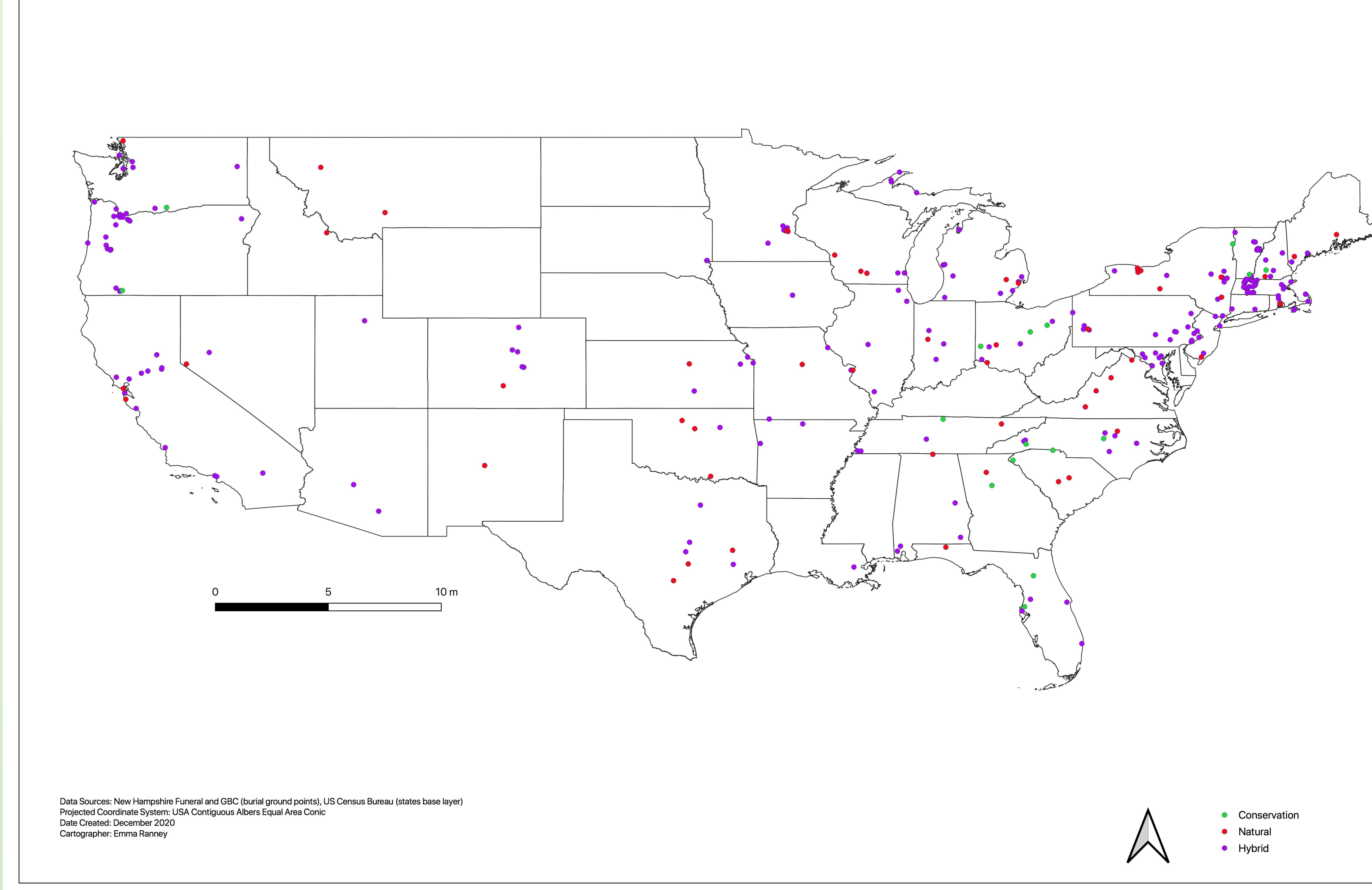
## Data and methods

The area of study for this analysis was the 50 United States as well as the District of Columbia. Data regarding location, religious affiliation, and type of green burial available was compiled from the websites of individual cemeteries, the New Hampshire Funeral Organization [NHFO], the GBC, and Natural End when possible (NHFO, n.d.; GBC (c), n.d.; Natural End, n.d.). The New Hampshire Funeral Organization maintains a list of general green burial grounds, certified or uncertified, while the GBC keeps records of GBC certified green burial grounds, and Natural End reports green burial grounds who have filed for certification with them. When data was unclear or not readily available online, it was collected from individual cemeteries via telephone or Facebook conversations. Latitude and longitude coordinates were taken from Findagrave.com or Google Maps., and the base layer map was created by the U.S. Census Bureau. By compiling the information from these sources, a comprehensive dataset of every green burial ground in the United States was created.

## Discussion and conclusion

This study reveals a few major patterns regarding green burial in the United States. Hybrid burial is the most accessible form of green burial available, followed by natural burial. Conservation burial is very rare. Thus, cemeteries that are entirely devoted to the preservation of land and the environment in general are lacking in the U.S. despite growing support for the green burial movement. In terms of sheer number of green burial sites, Massachusetts is the most accessible state; however, accounting for the availability of all forms of green burials, Florida, New Hampshire, New York, North Carolina, Ohio, Tennessee, and Washington are the most green-burial friendly. Analyzing the data spatially reveals that green burial grounds are most densely clustered in the Northeast, followed by the West, then the Midwest, Southeast, and Southwest.

## Types of Green Burials in the Continental U.S.



## Green Burial Grounds vs. State, U.S.

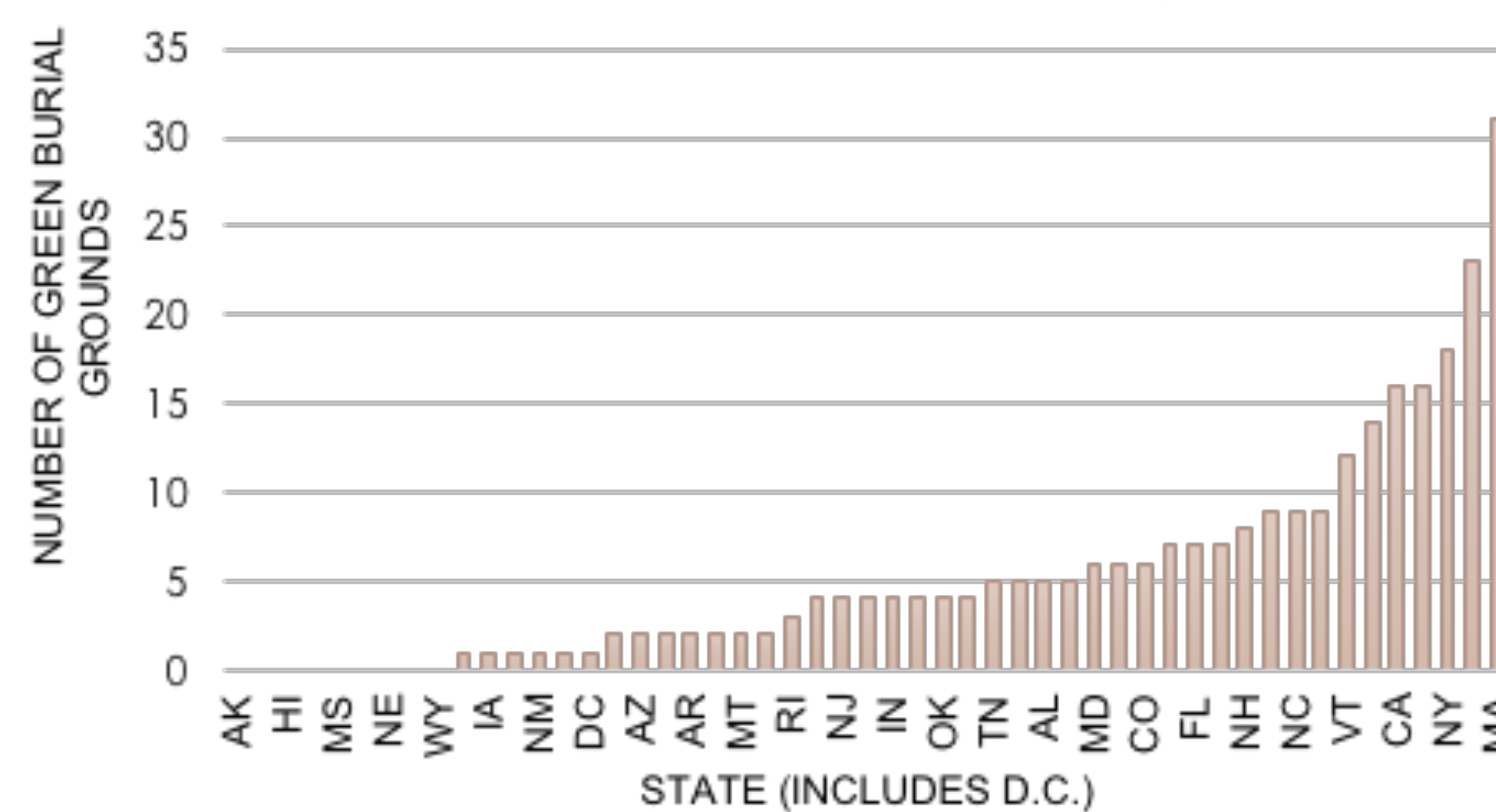


Figure 1. Biodegradable materials, such as bamboo, are all that is permitted in a green burial



Figure 2. Often, grave markers are not found in green cemeteries. Instead, natural plants, small stones, or GPS trackers are placed.

## Results

There are 276 green burial grounds in the United States, and 41 states plus the District of Columbia have at least one green-burial-friendly cemetery. With 31 burial grounds, Massachusetts has the most of any state. Nine states, Mississippi, West Virginia, Wyoming, North Dakota, Kentucky, Delaware, Hawaii, Alaska, and Nebraska, do not yet have green burial grounds. Of the studied areas that do have green burial grounds, Utah, New Mexico, Louisiana, Iowa, Indiana, and the District of Columbia have the fewest with only one green burial ground each. Adjusting for population, Vermont has the most green burial grounds per capita with 0.0000192. Disregarding the states that have zero green burial grounds, Georgia has the fewest per capita with 0.0000002. The median total green burial grounds per state is four while the median per capita is 0.0000014. All 31 of Massachusetts’ green burial grounds are classified as hybrid; therefore, it leads the nation in hybrid-style green burial grounds. Of the states that have some form of green burial grounds, Georgia, Idaho, Montana, New Mexico, South Carolina, and Virginia have no grounds considered hybrid. With six cemeteries, New York contains the greatest number of natural burial grounds in the U.S. However, many areas, including Arizona, Arkansas, Connecticut, D.C., Illinois, Iowa, Louisiana, Maryland, Massachusetts, Oregon, South Dakota, Utah, and Vermont contain zero “pure” natural burial grounds. Finally, Ohio, with three cemeteries, leads the nation in total number of conservation burial grounds. Florida, North Carolina, and South Carolina boast two conservation grounds each while Georgia, New Hampshire, New York, Oregon, Tennessee, Vermont, and Washington each have one. All other states have zero. Analyzing for accessibility to all three types of green burial grounds, only seven states—Florida, New Hampshire, New York, North Carolina, Ohio, Tennessee, and Washington—have at least one burial ground for each type. Accounting for 76% of all green burials in the U.S., hybrid is by far the most common type of green burial. Next, natural makes up 51% of all green burials, and conservation makes up 16%. Green burial grounds are most common in the Northeast, which has 104 cemeteries total, and are least common in the Southwest, which has only 14. Of the 275 green burial sites analyzed, 43 are religiously affiliated. Eight different faiths make up these 43 sites: Catholicism (20), Judaism (13), Christianity (3), Quakerism (3), Episcopalianism (1), Ethician Church (1), Lutheranism (1), and Wicca (1). All but the Wiccan cemetery are open to members of any faith.

## Sources

Natural End. (n.d.) Funeral & burial services map. <https://www.naturalend.com/maps/>  
NHF. (n.d.). Green burial cemeteries in the US and Canada. <https://www.nhfuneral.org/green-burial-cemeteries-in-the-us-and-canada.html>  
Phys.org. <https://phys.org/news/2019-11-people-green-burial-cemetery-law.html>  
Gallup. (2019). *Conservatives greatly outnumber liberals in 19 U.S. states.* <https://news.gallup.com/poll/247016/conservatives-greatly-outnumber-liberals-states.aspx>  
GBC (a). (n.d.). FAQs: Green burial defined. [https://www.greenburialcouncil.org/green\\_burial\\_defined.html](https://www.greenburialcouncil.org/green_burial_defined.html)  
GBC (b). (n.d.). Quick statistics: Burials & cremations. [https://www.greenburialcouncil.org/media\\_packet.html](https://www.greenburialcouncil.org/media_packet.html)  
GBC (c). (n.d.). Interactive provider maps. <https://www.greenburialcouncil.org/provider-maps.html>  
United States Census Bureau. (2010). Population, census, April 1, 2010. <https://www.census.gov/quickfacts/fact/table/MS,WY,ND,KY,DE,HI/PST045219>  
Universal Ethician Church. (n.d.). The Universal Ethician Church. <http://universalethicianchurch.org/>  
USFuneralsOnline. (n.d.). Green burial directory. <https://www.us-funerals.com/green-burial-directory/#.X848DBNKhQI>