Estimating the Approximate Age of Unmarked Burial Sites in The Frankfort Cemetery using Spatial Interpolation

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Cemeteries in many parts of the United States are grappling with a lack of complete and accurate information on the location and age of burials within their current and historical boundaries. A recent field experiment was conducted utilizing a ground penetrating radar (GPR) for survey of a pre-determined portion of the Frankfort Cemetery in Frankfort thought to contain an unspecified number of unmarked burial sites. The purpose of the experiment was to assess the effectiveness of the GPR as a non-invasive and cost effective solution for locating unmarked burial locations in a portion of the cemetery previously reserved for those from lower socio-economic circumstances. The GPR analysis successfully identified many unmarked burial locations, however, the analysis was unable to yield any approximation of the age of each burial site. This current project utilizes geographic information systems (GIS) to combine the geographic coordinates of known burial sites with known burial dates into a single database in an effort to surmise the approximate burial date on the unmarked graves. An inverse distance weighting (IDW) interpolation is used to estimate the date of each of the unmarked gravesites by comparing the dates of spatially proximate burials with reliable burial dates. Preliminary results indicate a surprising wide range of potential burial dates from those pre-dating 1820 to some as recent as the 1920s. The results generated from this analysis provide one viable pathway for the dating of newly discovered unmarked burials.