

Reenacting the Civil War with GIS: Identifying Planning Priorities

**William L. Allen, III, The Conservation Fund
Jamie Christensen, WorldView Solutions**

Abstract

The Conservation Fund and WorldView Solutions, at the request of the Civil War Preservation Trust, are undertaking Rapid Open Space Assessments of historically significant Civil War battlefields. Each Battlefield assessment identifies key lands for protection and contains a GIS database integrating historic battlefield maps, existing land records information, natural resource data, and other supporting data. In addition to describing the project's goals and objectives, local and regional planning applications will be explored. The open nature of the assessment design allows the process to be customized to any geography or particular conservation or planning interest.

Introduction

During the last 20 years, The Conservation Fund's Civil War Battlefield Campaign (TCF) and the Civil War Preservation Trust (CWPT), with the National Park Service (NPS) and other partners, have protected battlefield land in 18 states, preserving more than 20,000 acres. Despite these protection efforts, fewer than 15% of the most significant Civil War battlefields have been protected. TCF, CWPT, and NPS, working both independently and collaboratively, have developed a framework for identifying protection priorities that make the most efficient use of limited financial and human capital. The Conservation Fund, in partnership with WorldView Solutions, have developed a rapid assessment framework that utilizes historical research, public input, geographic information system (GIS) tools, and conservation planning techniques to identify parcel-scale Civil War battlefield preservation priorities and select appropriate protection strategies. Using this planning approach, TCF and CWPT hope to protect over 100,000 acres of historically significant Civil War battlefield land during the next 20 years.

The Civil War set the nation's direction more than any other event in the history of the United States (Noonan, 1998). Nearly three million Americans fought in more than 10,500 armed conflicts that resulted in about the same number of American deaths in service as the total number of fatalities from the Revolutionary War through the Vietnam War combined (Meinhard, 1998).

This terrible trauma should not be celebrated, nor should it be blotted from the national memory (CWSAC, 1993). According to the report on the Nation's Civil War battlefields by the Civil War Sites Advisory Commission, the preservation of these battlefields is vital to our nation because:

- *Seeing the battlefield is basic to an understanding of military campaigns and battles while the latter are crucial to comprehending all other aspects of the Civil War.*
- *To be upon a battlefield is to experience an emotional empathy with the men and, in fact, the women who fought there.*
- *Clashing convictions and the determination to defend them cost the nation 620,000 lives.*
- *The values tested and clarified in that great conflict are what continue to bind the nation together today.*

In addition to their educational value, battlefields provide significant economic benefits to the local communities that surround them. The first major study of these benefits was The Conservation Fund's book, *Dollar\$ and Sense of Battlefield Preservation*.¹ It confirmed that battlefields are economic assets that generate local income for communities through tourism and other expenditures while also providing the tangible and intangible benefits of open space and Civil War heritage preservation. Communities are becoming increasingly aware that a protected battlefield can generate economic benefits and that residential development nearly always costs more in services than it generates in taxes.

The threats to our Nation's Hallowed Ground are many. As Frances H. Kennedy states:

"We are paving over our Civil War battlefields. We are losing the land where soldiers fought and died in the war that decided America's future. We are losing great outdoor classrooms, where Americans can learn about the Civil War and can commemorate the union of our states and the abolition of slavery." (Kennedy, 2002)

The Civil War Battlefield Protection Movement

The movement to preserve Civil War battlefields began as a grassroots movement in the 1890s, which convinced Congress to establish the nation's first four national military parks (Drummond, 1998).² Up through the 1980s, the federal government continued to play the major role in acquiring and preserving Civil War battlefields (Linenthal, 1991). Over the last 20 years, a public-private partnership has emerged among the National Park Service's American Battlefield Protection Program (ABPP)³, the Civil War Preservation Trust (CWPT)⁴, The Conservation Fund (TCF)⁵, and numerous grassroots organizations to protect endangered battlefields. TCF and CWPT, with its partners, have protected

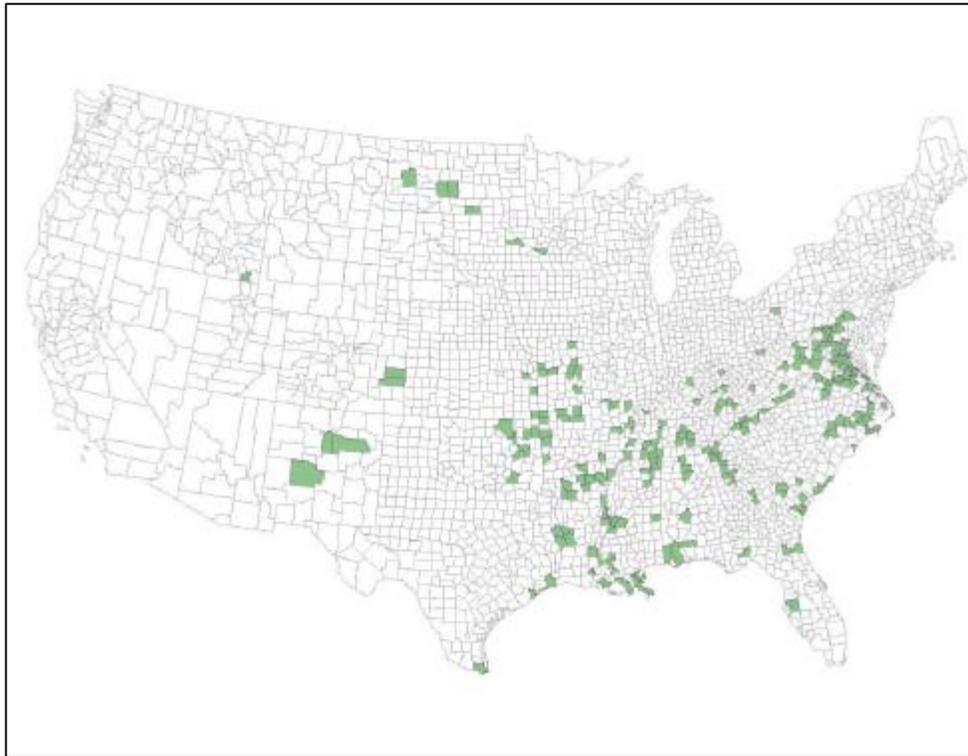
battlefield land in 18 states, preserving more than 20,000 acres since 1985. The National Park Service's American Battlefield Protection Program has awarded approximately \$4.4 million for 191 preservation and enhancement projects at more than 100 historic battlefields (mostly Civil War sites) in 21 states and the District of Columbia since 1990 (ABPP, 2002).

Despite these protection efforts, fewer than 15% of the most significant Civil War battlefields have been protected (CWPT, 2001).⁶ There is a race against time; the next 20 years will determine how much battlefield land will be protected in perpetuity for future generations. The National Park Service, Civil War Preservation Trust, and The Conservation Fund, working both independently and collaboratively, have developed a framework for identifying protection priorities that make the most efficient use of limited financial and human capital. This framework utilizes historic research, public input, geographic information system (GIS) tools, and conservation planning techniques to rapidly assess parcel-scale Civil War battlefield protection priorities and select appropriate battlefield protection strategies.

National Battlefield Protection Prioritization

There are both national and site-level battlefield protection priorities.⁷ National priorities involve a comparison of the significance of battlefields across the country, while site-level priorities involve the comparison of significant properties within an individual battlefield. The Civil War Sites Advisory Commission (CWSAC) initially developed national priorities in 1993.⁸ The Commission held 16 public meetings in 11 states, with testimony from more than 150 public officials and private citizens from 1991-1993 (Townsend, 1997). Through public comments, field investigations, historical research and mapping by the National Park Service and the Center for Advanced Spatial Technologies at the University of Arkansas, the Commission identified 384 principal battles among the 10,500 documented armed conflicts (Culpepper, 1997).

The 384 principal battles occurred in 26 states and in 226 counties (See Figure 1 – Counties with Civil War Battlefields in Green). States with fifteen or more include: Virginia (123), Tennessee (38), Missouri (29), Georgia (28), Louisiana (23), North Carolina (20), Arkansas (17), and Mississippi (16).



These battles were classified according to their military significance as follows:

Class A and B battlefields represent the principal strategic operations of the war. Class C and D battlefields usually represent operations with limited tactical objectives of enforcement and occupation.

- 45 sites (12%) were ranked "A" (having a decisive influence on a campaign and a direct impact on the course of the war);
- 104 sites (27%) were ranked "B" (having a direct and decisive influence on their campaign);
- 128 sites (33%) were ranked "C" (having observable influence on the outcome of a campaign);
- 107 sites (28%) were ranked "D" (having a limited influence on the outcome of their campaign or operation but achieving or affecting important local objectives).

[T]he Commission also classified the battlefields in terms of related areas of military, economic, and social significance and the exceptional interpretive potential that each site might have. The most frequently identified issues and topics were:

- *Loss of a significant military figure;*
- *Exceptional casualties;*

- *Important lessons in strategy or tactics;*
- *Unusual importance of the battle in the public mind;*
- *Effect on national politics or strategy;*
- *Significant involvement of minority troops; and*
- *High archeological potential.*

In addition to military significance, three other factors were considered in assigning a preservation priority in the Commission report: integrity, protection level, and threat. Based on these factors, the Commission gave each battlefield a single overall rating and then divided the battles into preservation priority classes (I, II, III, and IV, with I being the highest priority). William J. Drummond from the City Planning Program at the Georgia Institute of Technology analyzed the Commission's classification scheme and developed a set of rules that describe their prioritization approach (Drummond, 1998):

- *The single most important factor is integrity. Any battlefield with poor or lost integrity is placed in the lowest priority class (class IV), no matter what the values of the other factors.*
- *The second most important factor is development threat. Battlefields with high threat are class I if military importance is higher (A or B ratings), class II if military importance is lower (C or D ratings).*
- *The third most important factor is core protection. For battles with higher military significance (A or B rating) battlefields with lower protection are placed in class II, and those with higher core protection are in class III.*
- *Military significance is important for distinguishing class I priority battles (which must have a rating of A or B), and is then used to set subpriorities within each of the four priority classes.*

These four classes are utilized by the ABPP to set their priorities.

The Rapid Assessment Framework

The Civil War Preservation Trust has utilized the Commission's national battlefield protection priorities to guide its work. In general, CWPT targets battlefields that are the most highly threatened by development and were a decisive battle crucial to the outcome of the war. For these most significant battles, the Civil War Preservation Trust is undertaking a National Mapping Project that is serving as a catalyst for proactive land conservation efforts in these target areas (CWPT, 2002). CWPT is working with The Conservation Fund and Precision Cartographics to complete the National Mapping Project. This paper focuses on The Conservation Fund's efforts to provide a useful product to CWPT to achieve its conservation goals.

While the national battlefield protection priorities provide a useful "coarse filter" assessment, site-level priorities (i.e. "fine filter" approaches) also are required in order to identify the most significant properties within an individual battlefield. While the National Park Service and other groups have done this on a project-by-project basis, there has been no systematic assessment of site-level priorities across multiple battlefields. CWPT has contracted The Conservation Fund to develop an easy-to-use product that identifies site-level priorities for threatened and significant battlefields from the Commission's list.

Identification of site-level priorities requires an efficient, cost effective method to assess parcel-level protection opportunities using the best available information from historic battlefield maps, existing land records information, natural resource data, and other supporting data. With its experience in providing strategic conservation planning services and developing customized GIS-based conservation applications, The Conservation Fund determined that an adaptation of its rapid open space assessment product would provide CWPT with the best possible solution for their needs.

The Fund's Rapid Open Space Assessment portrays existing and potential open space in a geographic area and crafts an open space protection program, including conservation priorities and a recommended implementation strategy within 3-6 months. The Conservation Fund, in partnership with WorldView Solutions (WorldView)⁹, is developing Battlefield Protection Rapid Assessments that provide CWPT with a turnkey product delivered on CD-ROM that provides a user friendly GIS interface to assess site-level protection opportunities, facilitate landowner contact, and devise recommended protection strategies.

Each Battlefield Protection Rapid Assessment delivers a GIS database that includes:

- ABPP map information, including the location of the Battlefield Core and Study Areas, Troop locations, movements, and campsites;
- Parcel and assessment data for the Battlefield Core Area, including a prioritization attribute (see below for a more detailed description of the site-level prioritization criteria); and
- Supporting GIS data layers, such as aerial photography, roads, hydrography, utilities, topography, and other supporting layers.

Each Battlefield Protection Rapid Assessment also includes:

- Customized GIS environments for ArcView 3.x, ArcGIS 8.x, and ArcReader;
- FGDC compliant metadata in XML and HTML format; and
- Summary map (PDF) and tables (XLS) of the highest priority properties.

The Battlefield Protection Rapid Assessments are the ideal tool for CWPT, which provides them with powerful mapping and analysis capabilities with limited training or experience using GIS software.

Conclusions

The Conservation Fund, in partnership with WorldView Solutions (WorldView), is developing Battlefield Protection Rapid Assessments that provide the Civil War Preservation Trust with a product that integrates multiple sources of battlefield data, identifies site-level protection opportunities, and facilitates implementation of appropriate conservation strategies. While TCF and CWPT can work together and with other partners to complete traditional acquisitions of fee simple interest and easement with this tool, these assessments also may facilitate engaging local governments and other grassroots organizations in protecting these critical resources.

The Rapid Assessments are a visualization tool that can assist local governments with other regulatory and non-regulatory strategies to protect our hallowed ground. Some protection tools may include purchase of development rights (PDR) programs, transfer of development rights (TDR) programs, small area plans, overlay zoning, or other tools that will recognize the historic, cultural, and economic values of Civil War Battlefields.

Endnotes

¹ For a comprehensive overview of the economic benefits on battlefield preservation, please see: Kennedy, Frances H. and Douglas R. Porter. 1994. *Dollar\$ and Sense of Battlefield Preservation: The Economic Benefits of Protecting Civil War Battlefields*, The Preservation Press, Washington, DC. Or the 1999 update in the Information Series of the National Trust for Historic Preservation: <http://www.infoseries.com>.

² National Military Parks established in the 1890s: Chickamauga & Chattanooga, Shiloh, Gettysburg, Vicksburg.

³ More information on the National Park Service's American Battlefield Protection Program is available at: <http://www2.cr.nps.gov/abpp/>.

⁴ The two leading Civil War battlefield preservation organizations, the Association for the Preservation of Civil War Sites and the Civil War Trust merged November 12, 1999 to form the Civil War Preservation Trust. More information is available at <http://www.civilwar.org>.

⁵ More information on The Conservation Fund is available at <http://www.conservationfund.org>.

⁶ A list of the principal Civil War Battlefields, classified by protection status, is available at <http://www.conservationfund.org/?article=2407>.

⁷ While the Civil War did not occur exclusively on battlefields, the Civil War Sites Advisory Commission (CWSAC) devoted its principal effort toward battlefields because of their great historical value and protection challenges.

⁸ A comprehensive overview of the Commission's classification of the 384 principal battles is available at <http://www2.cr.nps.gov/abpp/cwsac/cws0-1.html>.

⁹ For more information about WorldView Solutions, please contact Jamie Christensen, President, Jamie@WorldViewGIS.com, <http://www.worldviewgis.com>.

References

- American Battlefield Protection Program. 2002. *About Historic Battlefields*, website, National Park Service.
- Civil War Preservation Trust. 2001. *Why Preserve Civil War Battlefields?*. Website.
- Civil War Preservation Trust. 2002. *Mapping Project Update*. Hallowed Ground, Fall 2002, p.9.
- Civil War Sites Advisory Commission (CWSAC). 1993. *Report on the Nation's Battlefields*. National Park Service, Washington, DC.
- Culpepper, R. Brian. 1997. *Better Planning Through GIS: Battlefield Management Efforts at CAST*. Cultural Resources Management, Vol. 20(5), pp.22-24.
- Drummond, William J. 1998. *A GIS-Based Model for Battlefield Preservation Planning*, Association of Collegiate Schools of Planning Conference, Pasadena, CA.
- Kennedy, Frances H. and Douglas R. Porter. 1994. *Dollar\$ and Sense of Battlefield Preservation: The Economic Benefits of Protecting Civil War Battlefields*, The Preservation Press, Washington, DC.
- Kennedy, Frances H. (ed.). 1998. *The Civil War Battlefield Guide, Second Edition*. Houghton Mifflin, Boston.
- Kennedy, Frances H. 2002. *Civil War Battlefields are in Peril*, The Conservation Fund, website.
- Linenthal, Edward Tabor. 1991. *Sacred Ground; Americans and Their Battlefields*. University of Illinois Press, Chicago, Illinois.
- Meinhard, Robert W. 1998. *War Statistics*, Appendix 4 from the *Civil War Battlefield Guide, Second Edition*, p.463.
- Noonan, Patrick F. 1998. Foreword from the *Civil War Battlefield Guide, Second Edition*, pp. xxiii-xxiv.
- Townsend, Jan. 1997. *Catalyst for Battlefield Preservation*. Cultural Resources Management, Vol. 20(5), pp.7-10.

Author Information

William L. Allen, III
Director of Geographic Information Services
Manager for the Center for Conservation and Development
The Conservation Fund
North Carolina Office
10001 Main Street, Suite C
Chapel Hill, NC 27514
Phone: (919) 967-2223
Fax: (919) 967-9702
EMail wallen@conservationfund.org, will@willallen.com
<http://www.conservationfund.org>

Jamie Christensen
Owner
WorldView Solutions Inc
4448 Portsmouth Blvd, Suite 200
Chesapeake, VA 23321
Phone: (757) 488-2600
Fax: (757) 488-6100
EMail jamie@worldviewgis.com
<http://www.worldviewgis.com>

¹ For a comprehensive overview of the economic benefits on battlefield preservation, please see: Kennedy, Frances H. and Douglas R. Porter. 1994. *Dollar\$ and Sense of Battlefield Preservation: The Economic Benefits of Protecting Civil War Battlefields*, The Preservation Press, Washington, DC. Or the 1999 update in the Information Series of the National Trust for Historic Preservation: <http://www.infoseries.com>.

² National Military Parks established in the 1890s: Chickamauga & Chattanooga, Shiloh, Gettysburg, Vicksburg.

³ More information on the National Park Service's American Battlefield Protection Program is available at: <http://www2.cr.nps.gov/abpp/>.

⁴ The two leading Civil War battlefield preservation organizations, the Association for the Preservation of Civil War Sites and the Civil War Trust merged November 12, 1999 to form the Civil War Preservation Trust. More information is available at <http://www.civilwar.org>.

⁵ More information on The Conservation Fund is available at <http://www.conservationfund.org>.

⁶ A list of the principal Civil War Battlefields, classified by protection status, is available at <http://www.conservationfund.org/?article=2407>.

⁷ While the Civil War did not occur exclusively on battlefields, the Civil War Sites Advisory Commission (CWSAC) devoted its principal effort toward battlefields because of their great historical value and protection challenges.

⁸ A comprehensive overview of the Commission's classification of the 384 principal battles is available at <http://www2.cr.nps.gov/abpp/cwsac/cws0-1.html>.

⁹ For more information about WorldView Solutions, please contact Jamie Christensen, President, Jamie@WorldViewGIS.com, <http://www.worldviewgis.com>.