A CULTURAL LANDSCAPE ARCHIVE: DIGITIZING THE NEW DEAL’S PRAIRIE STATES FORESTRY PROJECT

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1 ABSTRACT

This paper addresses how digital humanities methods are being used to advance the interpretation and documentation of a rural cultural landscape in the United States. Due to the size and scope of rural landscapes, innovative methods for collecting and analyzing data are critical for advancing landscape preservation initiatives. The New Deal’s Prairie States Forestry Project, the largest afforestation project to date in the United States, lends itself to one such preservation initiative. Using an in-progress online project, the authors show how digital humanities methods for digital preservation and metadata entry are an important first step to disseminating thousands of previously inaccessible primary source documents in a web-based platform. The collaborative digital humanities project is an act of preservation that creates new opportunities for documenting and managing cultural resources. The archive incorporates geospatial, landowner, and plant species as metadata, allowing search functions to correlate diverse primary source materials, including photography and planting records, to landowners in different geographic locations. This allows stakeholders, including landowners, the U.S. Forest Service, State Historic Preservation Office, and historical researchers, to not only identify a baseline inventory of historical plantings, but to connect the shelterbelts to those who planted and/or still maintain them. The collaborative curation of source material for the digital archive not only provides immediate access to thousands of primary source documents, but digital features and organization of the archive itself expand the questions that landscape architects practicing in historic preservation and forestry can ask when evaluating this large-scale cultural landscape.

1.1 Keywords:  
New deal, cultural landscape documentation, digital humanities, digital archiving

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2 INTRODUCTION

Due to the size and scope of rural landscapes, innovative methods for collecting and analyzing data are critical for advancing landscape preservation and conservation initiatives. This paper addresses how digital humanities methods for digital preservation and metadata entry are being used to advance the documentation and interpretation of a rural cultural landscape in the United States. The ability to read a landscape with both contextual depth and site specificity is a critical step in evaluating historic integrity as well as developing landscape management plans. Using an in-progress digital humanities project focusing on the New Deal’s Prairie States Forestry Project (PSFP), a dynamic landscape intervention that continues to shape and sustain the Great Plains region, the authors show how the process for digitizing and defining metadata entry for thousands of previously inaccessible primary source documents creates new opportunities for interpreting and documenting cultural resources.

Digital humanities, an interdisciplinary field at the intersection of digital technology and humanistic discipline[s] (Whiston Spirn, 2020, p. 125) can offer landscape architecture and landscape history digital archival methods for working with primary source material to interpret and document landscapes in both time and space. In this respect, the PSFP digital archive incorporates metadata on geospatial positions, landowner names, and plant species, allowing search functions to correlate diverse primary source materials, including photographs and planting records, to landowners in different geographic locations. This allows stakeholders—including landowners, the U.S. Forest Service, state forestry agencies, the State Historic Preservation Office, and historical researchers—to not only identify a baseline inventory of historical plantings, but to connect the shelterbelts to those who planted and/or still maintain them.

2.1 Prairie States Forestry Project Background

Part of American agricultural heritage, the Prairie States Forestry Project (1935-1942) was a federally funded New Deal program in which the U.S. Forest Service partnered with landowners to plant trees in a designated zone stretching from the Texas panhandle to the Canadian border (Perry, 1942, 1) (see Figure 1). Nearly 220 million seedlings were planted, creating 18,600 miles of shelterbelts occupying 240,000 acres on 30,000 farms. This landscape intervention was groundbreaking for the time, as forest service researchers used regional data for spatial assessments across six states. Soil conservation, a central concern during the 1930s Dust Bowl period, was the primary goal of this massive afforestation project, led by President Franklin Delano Roosevelt’s belief that soil conservation on private land should be a public concern. The establishment of the Soil Erosion Service “marked the first federal commitment to preservation of natural resources on public land,” and the experimental PSFP shelterbelt planting program was implemented in 1935 as part of federal soil conservation efforts (Woolner, 2010).

The concept for a massive wall of trees planted in a 100-mile-wide zone traversing the center of the United States was first presented to the American public in a 1934 New York Times article, “To Insure Against Drought, A Vast Plan Takes Shape,” by F.A. Silcox, then chief forester for the United States Department of Agriculture. Despite presidential support for the PSFP, the project was controversial both in Congress and among the professional forestry community. In contrast to other New Deal programs the PSFP provided federal funding for conservation work on private land, using unproven agroforestry methods in a struggling agricultural region. Despite these concerns, federal funding was awarded to the Forest Service and planting began in 1935. The project was administered by U.S. Forest Service employee Paul Roberts, who was headquartered in Lincoln, Nebraska, and this collaboration with local landowners led to the largest afforestation project in United States history.

The massive infrastructural planting provided the groundwork for the agroforestry practices of today, and the PSFP shelterbelts are a dynamic landscape intervention that continue to play critical roles in shaping and sustaining the Great Plains region. Due to climate change, the importance of ecosystem services provided by these multigenerational legacies will continue to increase. However, this heritage is at risk due to a lack of coordinated monitoring efforts, and the current status of existing PSFP shelterbelts remains unknown, making it difficult to identify, analyze, and create management plans for this evolving large-scale cultural landscape.
Figure 1. Final published shelterbelt zone. February 1935.
Originally published in Possibilities of Shelterbelt Planting in the Plains Region.
Courtesy of the Forest Service, U.S.D.A.
When discussing the PSFP and other New Deal programs, it is important to acknowledge that while some of these initiatives reached out to marginalized groups in unprecedented ways, others, such as the Social Security and National Labor Relations Acts of 1935, specifically excluded African Americans and Chicanos, with New Deal policies as a whole unable to overcome the nation’s “entrenched racial order” (Walker, 2019b). Like other programs of its time, the Prairie States Forestry Project provided funding to landowners whose families had been granted land through a homestead system that unjustly favored white landowners, and who had previously benefited from westward expansion that occurred through the genocide and suppression of countless Native Americans.

2.2 Archival Record

Unlikely as it may seem, the PSFP’s organizers were aware of its historical importance and had the foresight to plan for its preservation in later decades. In 1940, then project director Paul Roberts wrote a letter to all participating Forest Service state directors and division chiefs encouraging them to keep a permanent record of the project, saying, “You may not attach much importance to some of them, but send them in anyway, for out of all of this someday someone will write a saga of the Shelterbelt.” Roberts’s foresight resulted in the USDA National Agroforestry Center, located on the University of Nebraska campus, retaining the archival record for the three participating northern states, Nebraska, South Dakota, and North Dakota, in addition to limited records for the southern states, Kansas, Oklahoma, and Texas.

The collection contains records for all seven years of the project (1935-1942) and can be organized into the following categories: government correspondence, photographic documentation taken by New Deal photographers, maps documenting planting locations, and descriptive records between the Forest Service and landowners. Correspondence with these private landowners (referred to as “cooperators”) includes a Record of Individual Strip form for each cooperator’s shelterbelt planting(s) and includes information on the quantity of species planted, year of planting, and the length and width of each shelterbelt. The primary source textual material, including correspondence and cooperative planting agreements between the Forest Service project administrators and private landowners, was kept in filing cabinets organized by participating state; Nebraska, for example, has 150 county maps, 1,000 township maps, and over 6,000 descriptive records (see Figures 2 & 3).

Similar to the Vanderbilt classification system created for archiving New Deal photography by subject matter, the photographic collection is not organized by geographic location but by category (Arnold et al., 2017). Example categories include shelterbelt, utilization, damage, field windbreaks, crop protection, and human interest. This thematic archival photographic classification system makes identifying and spatially locating photographs challenging. Individual photographs may include location (usually a state or county), which is typically listed with a supporting description of the planting site and the name of the cooperator (if included) (see Figure 4).

2.3 Digital Preservation Efforts for New Deal Landscapes

The importance of New Deal programs and projects to the development of the landscape architecture profession in the public realm is well documented (Cutler, 1985). A deeper understanding of the legacies of New Deal projects such as the Prairie States Forestry Project at both the local and national levels can expand our knowledge of homestead systems as well as create opportunities for contemporary forms of preservation. Such an understanding can be achieved through digital preservation methods aimed at organizing, searching, and visualizing primary source material. One such project, Yale Photogrammar, uses digital tools to aggregate New Deal photographs as maps georeferencing thousands of photos taken across the United States, categorically and thematically, categorized both in a timeline and by individual photographer. In this manner, digital preservation of New Deal initiatives provides accessible web-based platforms for engaging a diverse audience in humanistic exploration expanding collaborative opportunities (Cox & Tilton, 2019).

Another example is The Living New Deal (https://livingnewdeal.org/), which introduces archival documents to new audiences by disseminating and georeferencing primary source material. Housed in the geography department at the University of California, Berkley, the website has become a significant New Deal resource connecting local preservation initiatives to users throughout the US. The project team works with volunteers across the country to map New Deal public work projects, a vital initiative considering the number of New Deal projects in each state. Because New Deal public works are largely invisible
and were rarely marked as such, “the era’s contribution to American life goes largely unseen and unappreciated” (Walker, 2019a). Tangible New Deal heritage initiatives are also occurring within State Historic Preservation Offices (SHPO) across the United States for nominations to the National Register. For example, the state of Nebraska has developed a Multiple Property Documentation Form (MPDF) for listing New Deal-related resources to the National Register. Nebraska’s MPDF form identifies the Prairie States Forestry Project as a nationally significant New Deal conservation effort that shaped the state’s landscape heritage from 1935 to 1942 (Loughlin et al., 2019, SF_2). Despite the project’s national significance, limited access to primary source material that can aid in justifying a landscape’s historical integrity is often an obstacle that keeps important cultural landscapes from being considered for the National Register. In the case of the Prairie States Forestry Project, the process for preparing a digital archive has made primary source documents available, creating opportunities for future large-scale landscape conservation projects (Karle & Carman, 2020, 15).

Figure 2. Archival Descriptive Record.
2.4 Digital Humanities and Landscape Architecture

Furthermore, digital humanities can offer landscape architecture and landscape history digital archival methods for working with primary source material to interpret and document landscapes in time and space. One such project, the Marnas Digital Archive, documents the evolution of the Scandinavian landscape architect and designer/theorist Sven-Ingvar Andersson’s personal garden (Whiston Spirn, 2020). The website grants users two critical experiences in viewing the garden, allowing them to view it as it existed during the designer’s lifetime, and see how it evolved over time (www.Marnasgarden.com). This digital humanities project not only disseminates important primary source documents, but creates a new model for reading landscapes described by Anne Whinston Spirn (2020) as the “virtual experience of moving through a place in space and time, exploring change and the mutual shaping of ideas and place” (p. 125).

The Center for Cultural Landscapes at the University of Virginia is pioneering further scholarly projects through The Landscape Studies Initiative (LSI) (www.arch.virginia.edu/ccl). According to Meyer and Lee (n.d.), the concept of “digital inquiry” utilizes technology to present primary source material in new and exciting combinations. Using digital humanities methods and a web-based platform, their work creates new readings of archival material on designed cultural landscapes; for example, LSI is utilizing a digital humanities platform to “transform how the history of designed landscapes is taught and researched." Focusing on two pilot projects, Central Park, New York and Park Muskau, Germany, Meyer and Lee apply digital resources with the goal of expanding pedagogical approaches to teaching landscape history in the classroom.

In addition to these pilot projects, Meyer and Lee offer a seminar course, Digital Landscape Studies, that allows students studying landscape architecture to gain exposure to the process for creating a digital archival project, an important step for expanding the collaborative potential between landscape architecture and the field of digital humanities.

3 RESEARCH OBJECTIVES

This paper discusses the initial phases of descriptive metadata development for a rural New Deal landscape, an essential component for creating a digital archive. Typically, landscape architects lack formal archival training, and collaborative partnerships with experts in library studies are essential for preparing a digital archival project. As previously discussed, several collaborative digital humanities projects are occurring in landscape architecture programs across the United States; however, limited publications exist in the field of landscape architecture documenting their methodological approaches to archival development. Using the ongoing Prairie States Forestry Archival Project as a case study, this paper discusses the process for defining archival metadata for thousands of previously inaccessible primary source documents. The project creates new opportunities for interpreting and documenting cultural resources in two ways:

(a) Preserving thousands of previously inaccessible primary source documents through the establishment of a digital archive, with the goal of future dissemination in a web-based platform.
(b) Developing descriptive archival metadata that enables stakeholders—including landowners, the U.S. Forest Service, state forestry agencies, the State Historic Preservation Office, and historical researchers—to not only identify a baseline inventory of historical plantings, but to connect the shelterbelts to those who planted and/or still maintain them.

4. METHODS

4.1 Digital Archiving

Because the primary source materials for the Prairie States Forestry Archive were created on behalf of the United States government, access to and use of the collection is unrestricted. Unfortunately, the original materials on the University of Nebraska campus remain inaccessible and unarchived, making it challenging for scholars or the public to locate important primary source documents to advance research and/or share personal and public history. Similar to the role Paul Roberts played in preserving the archive during the Great Depression, retired NAC employee Richard Carman has served as steward of
the collection, advocating for the digital preservation of its documents and providing critical knowledge about the archive.

Due to the national significance and relevant local public history of the PSFP, a collaborative partnership was established between the authors of this paper, the National Agroforestry Center, and the University of Nebraska’s Center of Digital Research in the Humanities (CDRH) to use digital humanities best practices to preserve and disseminate these materials. The team’s primary goal was to digitize the documents as a form of preservation and for greater access. In addition, the scholars seek to create a digital humanities website to take advantage of the research possibilities surrounding these historical materials. Utilizing established international metadata standards, digital tools, and technologies, the team seeks to facilitate new readings incorporating contextual depth and data in aggregate and expanded understanding of individual records.

The researchers decided that because of the amount of physical material, initial funding would focus on digitizing the records for the state of Nebraska. As part of the initial research phase over 6,000 descriptive records and over 6,000 photographs were digitized with corresponding metadata. By limiting the scope to one state the team is able to develop a repeatable framework for digitization and metadata entry of additional states as well as test best strategies for presenting the archival material through a searchable website.

Additionally, while the physical NAC collection includes comprehensive archival sources for the three participating northern states (Nebraska, South Dakota, and North Dakota), the NAC archive contains limited documentation for the three participating southern states (Texas, Oklahoma, and Kansas), creating a barrier to documenting the entire six-state project with similar archival data at this time. It is our hope that a framework for digitization and dissemination will raise awareness and aid in locating primary source material for the three southern states, making it possible to digitally archive the entire six-state project in the future.

4.2 Metadata

The team decided that because of the large number of documents to be digitized, it was not yet feasible to transcribe the entirety of every document. Instead, to allow the largest possible audience to search the records, the team determined that the following categories were necessary for metadata entry on both the descriptive records and photographs: geospatial information, names of landowners and photographers, and planting records, including original species planted, length and width of planting, and year of planting. For photography, the original thematic categories used to organize the photographs in the physical archive were also included as metadata (see Table 1 and Table 2).

4.3 Geospatial Data

The descriptive archival documents were tagged with geographic information, including state, county, and town, along with section, township, and range. The photographs were also tagged with a level of geographic information when it was present in their captions. In some cases, this might only include the name of a state, county, or town. Research assistants reviewed the archival sources to adjust for changes in historical counties and town names and boundaries. Because Texas is the only state in the archive not on the Public Land Survey System, one additional step could be to tag all archival documents with latitude and longitude coordinates to unify the geospatial data between states.

The ability to connect multiple primary source documents using similar geospatial data can aid in historic preservation efforts such as the ongoing Black Homestead digital humanities research effort in the Center for Great Plains Studies at the University of Nebraska (https://www.unl.edu/plains/homesteading-research). The archive allows users to search for a document using section, township, and range tags, making it possible to locate both individual records within the aggregate and coordinating digital homestead records for the same location. For example, landowners in Cherry County, Nebraska participated in the Prairie States Forestry Project and historically had one of the largest communities of Black homestead families in the Great Plains. While race itself was not indicated on the PSFP forms, the use of geospatial information and regularized names can benefit researchers on projects such as the Black Homestead effort by allowing users of the archive to understand more about the evolution of these homesteads and their owners.
Figure 3. Archival Source Record of Individual Strip.
On average, shelterbelt plantings would have ten rows of planting and each cooperator would have a
Record of Individual Strip per each shelterbelt planted on his or her property.

Table 1. Descriptive archival record metadata categories for Record of Individual Strip

<table>
<thead>
<tr>
<th>1.1 Personal Information</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Last Name</td>
<td>Art Helmricks</td>
</tr>
<tr>
<td>First Initial</td>
<td>A.</td>
</tr>
<tr>
<td>Census Check</td>
<td>Helmricks, Art</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>1.2 Geospatial Data</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>State</td>
<td>Nebraska</td>
</tr>
<tr>
<td>County</td>
<td>Antelope</td>
</tr>
<tr>
<td>Town</td>
<td>Orchard</td>
</tr>
<tr>
<td>Section</td>
<td>7</td>
</tr>
<tr>
<td>Township</td>
<td>27</td>
</tr>
<tr>
<td>Range</td>
<td>8</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>1.3 Planting Record</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Year Planted</td>
<td>1937</td>
</tr>
<tr>
<td>Length</td>
<td>2640’</td>
</tr>
<tr>
<td>Width</td>
<td>116’</td>
</tr>
<tr>
<td>Row 1 Species</td>
<td>Russian Olive</td>
</tr>
<tr>
<td># of Species Planted</td>
<td>605</td>
</tr>
</tbody>
</table>
Figure 4. Archival Source Photography.
Mr. and Mrs. Art Helmricks and baby viewing a 1937 shelterbelt on their farm (photo taken in 1938). Credit: National Agroforestry Center – Forest Service.

Table 2. Photography metadata categories.
In the process of metadata entry, a census check discovered the name of the cooperator was Art Helmricks, not Art Helmrick as written in the descriptive caption of the archival photograph.

4.4 People
For descriptive records, all documents are tagged with the cooperator’s first and last name. Research assistants checked the spelling of each name against the 1930 census and corrected for accuracy when necessary. The photographer’s name was also entered as metadata and when identified in the descriptive text the cooperator’s first and last name is tagged. This ability to view PSFP photographers and cooperators by first and last name allows users to easily identify the demographics of participants in the program, creating new opportunities for reviewing the PSFP through the lens of gender and/or ethnicity and allowing greater insight into female cooperators and possible Black cooperators, female-owned farms, and Black-owned farms.

The ability to connect a cooperator’s descriptive record to photographs of his or her property in the collection was also not easily accomplished in the physical archive. Members of the general public searching for their own family’s documents can now easily locate descriptive records and supporting photographs in the digital archive through a search by first and last name. This ability to connect geography with people provides a deeper understanding of place and the cooperator’s connection to the land (see Figure 5).
4.5 | Planting Record

In the descriptive records, planting information includes species planted, year of planting, and length and width of shelterbelts planted, all of which were tagged as metadata. The planting description for individual shelterbelts serves as important information when evaluating historic landscape integrity for a national register nomination. For example, several Nebraska farms and ranches are eligible for nomination to the National Register, and access to historically significant planting documents such as the PSFP shelterbelts (as a New Deal conservation method) makes it possible to include the entire farm (historic land, agriculture production, and buildings) in the listing.

Additionally, the archival records can be read and quantified in aggregate, providing an understanding of the historical project’s ecological impact and environmental performance. For instance, the number and type of species planted, and the number of shelterbelts planted per year can provide insights into the ecological effects of a large-scale afforestation effort in an agricultural landscape. The length and width of the shelterbelts can further provide spatial data needed to help evaluate the project’s environmental performance. The reduction of soil erosion on the leeward side of shelterbelts generally extends 10 times tree height (Ticknor, 1988), and assuming a conservative shelterbelt height of 30 feet, the area protected from soil erosion by the PSFP could extend up to 1,000 square miles.

**Figure 5. Examples of correlated archival records.** U.S. Department of Agriculture, Forest Service. Credit: National Agroforestry Center – Forest Service. The metadata entry makes it possible to locate descriptive and photographic archival records for the Cooperator J.P. Nolan’s shelterbelt planting.

5 | FUTURE RESEARCH

As the team is excited by the possibility of the digital humanities methods summarized above, the archive’s next step is developing a user-friendly platform connecting the primary source material to a larger public audience. A University of Nebraska digital humanities project, *Nebraska Portal*, provides a space for teams of interdisciplinary scholars to prototype such websites. The website will be built with consideration
of other successful New Deal digital archives, including The University of California Berkley's Living New Deal and Yale’s Photogrammar site (http://photogrammar.yale.edu/). Additionally, archives such as Francesca Ammon's Preserving Society Hill (https://pennds.org/societyhill/, n.d.), developed to aid local preservation initiatives, and Anne Whinston Spirn's Marnas Archive provide insights into enhancing a digital experience, both for scholars focused on advancing preservation initiatives and members of the general public interested in 20th century photography and history.

To construct our Nebraska Portal website for the Prairie States Forestry Project we have established an interdisciplinary team that includes the present authors, an archival specialist, and programmers. The team’s subject matter expertise includes history, library science, preservation, and GIS technology in addition to landscape architecture, and this interdisciplinary cooperation has been essential in obtaining grants as well as designing the archive itself. The project, funded by a U.S. Forest Service grant and two University of Nebraska start-up grants, provided the opportunity to establish this collaborative team and aided in the digitization and metadata entry process.

Due to the size of the physical archive, geospatial archival material has been organized and digitized by state. The initial phase of the project was to digitize and enter metadata for the state of Nebraska as well as the collection’s photographic record. The second phase will be to launch the state of Nebraska archive website, which will include advanced search features, narrative text, and interactive maps. Our team is also already in the process of digitizing the archival records for South Dakota and will then move on to digitizing the North Dakota records in the coming years.

Building on the descriptive metadata data process, the goal of the web-based platform will be to connect government records to familial history and spatial narratives. Our team will organize the archival documents into pages, allowing users to search documents by “People” (Landowners), “Place” (Nebraska, South Dakota, and North Dakota), and “Planting.” The photographic record will also be displayed as a page and categorized by theme. Taking inspiration from Yale’s Photogrammar, we will also aggregate photographs into a “treemap” (https://photogrammar.org/themes/root) that allows users to explore the photographs by both category and theme and visually shows which categories include more photographs by displaying larger-sized thematic images on the page. We also envision an additional mapping page for the website overlaying the historical GIS data set with contemporary aerial photography. This interpretive map will allow users to compare the original shelterbelts with what remains today. Our metadata process will also allow us to create choropleth maps aggregating archival documents at a state and county scale in the manner applied by the Photogrammar team to aggregate photographs to location. These interactive maps will support teaching and engagement and generate new forms and opportunities for scholarship. For instance, the archive can be used in conjunction with other spatial and historical data to investigate the influence of culture on the adoption and retention of shelterbelts, since many of the communities in the region had distinct cultural identities based around immigration at the time of the PSFP.

Leveraging the archival data with current aerial photography further allows the status of the original plantings to be determined, offering additional opportunities for multidisciplinary research. In one example from Antelope County in northeast Nebraska, original plantings were compared to 2010 aerial photography. This remote sensing analysis found that 38% of the original shelterbelt locations were still intact, with 40% partially intact and 22% no longer in existence (Kellerman et al., 2019). Spatial assessment of the intact shelterbelts versus those that were completely removed is providing insights on the drivers of retention. The archival data, along with the current remote sensing data, will also be used in a 2022 windbreak adoption survey of eastern Nebraska landowners as a follow-up to surveys conducted in 1983 and 2009. The combination of data sets will allow for evaluation of the potential effects of PFSP shelterbelts on the adoption and retention of windbreaks over time. Additional planned research includes conducting an economic assessment of the PSFP to determine the costs and benefits of the program over the decades.

As Yale’s Photogrammar team clearly stated, “As we move forward, collaboration has served as a guiding principle and allowed the project to flourish in exciting directions” (Arnold et al., 2017), and so too does the spirit of collaboration on our project connect research in the humanities and natural sciences to design. It is our goal that this digital humanities project will ultimately lead to the preservation of shelterbelts in Nebraska and provide a model for similar work to be completed in the additional five participating states.
6 CONCLUSIONS

This collaborative digital humanities project can contribute to the profession of landscape architecture in several ways, from supporting historic landscape preservation to informing large-scale regional planning efforts addressing pressing issues such as climate change.

The process for digitizing and disseminating previously inaccessible primary source documents opens up opportunities for large-scale landscape conservation projects. The digital archive pulls together the physical evidence required to nominate a site for the National Register of Historic Places and allows a cultural resource manager to determine a shelterbelt’s significance and assess its integrity within the context of the enormous PSFP. The historical GIS method developed through this project enables mapping of a cultural landscape across a larger spatial scale than typically addressed by cultural resource managers (Karle & Carman, 2020). This methodology can be applied by cultural resource managers working on other heritage projects, including Historic American Landscapes Survey (HALS) reports, cultural landscape reports, historic landscape studies related to Section 106 and 110 review, and preliminary archeological surveys.

The creation of a digital archive itself expands the questions that landscape architects practicing in the fields of both historic preservation and forestry can ask when evaluating this large-scale cultural landscape. Questions on how to maintain historical integrity while trying to renovate shelterbelts with new, better adapted plant species are some of the topics that can be assessed through the archival platform. The examples of archival metadata entry illustrate how large-scale digital methods can also connect geography to people, providing a deeper understanding of place and creating opportunities for additional cultural landscape research.

In addition to historical documentation and assessment, the digital archive can also serve as a conversation starter with landowners. Turnover in farm ownership in the region has disconnected familial history from these multi-generational shelterbelts, and the archive offers a mechanism to reestablish connections with this landscape heritage. This dialogue can open the door to discussing current windbreak issues and needs as well as the preservation and renovation of existing PSFP shelterbelts. The USDA National Agroforestry Center’s work around the adoption and retention of windbreaks is informed by the archive, as cultural connections to the PSFP shelterbelts may both indicate the retention of current windbreaks and inform the adoption of future windbreaks (Smith et al., 2021).

From a landscape planning perspective, the PSFP represents one of the largest and most focused landscape interventions by the U.S. government to address an environmental problem and is considered by some as a potential model for an effective climate change strategy (Sauer, 2010). Viewed by modern standards, the project was conceived, designed, and implemented in a short period of time and incorporated effective top-down and bottom-up management styles. The digital archive provides a platform and a systematic framework for understanding the strengths and limitations of the PSFP that can help guide future landscape interventions.

Documenting and evaluating historical landscapes helps us understand and wrestle with complex questions and dilemmas by examining how landscapes were shaped (and continue to be shaped) by people and the environment. The digital humanities can provide us with tools to help analyze patterns that might otherwise be invisible and provide crucial insight for understanding and solving current and future problems.

5 REFERENCES


