

# CRM Bulletin

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## SKILLS

### for Historical Architects

**Emogene Bevitt**

This summer, the National Park Service is taking a big step toward realizing Point ~ of the Director's 12-Point Plan, "Stimulate Career Opportunities and Employee Growth," when it initiates the Skills Development Plan for historical architects in the NPS.

The Skills Development Plan is the first attempt to catalog all of the skills needed by a historical architect. And it is the first time that an effort has been made to provide guidance on how these skills are used and how to learn them.

A historical architect must have all these skills needed by any architect; that is, knowledge of design, strength of materials, how to graphically describe a building concept, how to write specifications and how to make drawings that will facilitate the construction of a new building. This is a part of the conventional training and education of architects. The historical architect's task is to look at not just an existing structure but a historic structure and know enough about historic building practices, the use of historic building materials and the historic maintenance treatments, and previous preservation treatments to be able to determine how much is original, how much has been changed, what are the problems and what is causing them. In architecture school, design skills tend to be emphasized. In working on historic structures, the ability of the eye to observe, to interpret and understand the interaction of historic materials, historic building technology, along with past treatments and maintenance, require quite different skills.

#### **Origin of Plan**

The Skills Development Plan was first discussed early in 1984 by Jerry Rogers, Associate Director, Cultural Resources; Lee Nelson, FAIA, Chief, Preservation Assistance Division; and Hugh Miller, AIA, Chief Historical Architect, as a way to meet some specialized needs of historical architects in the Service. Many historical architects have left the Service over the years because their position lacked career growth. When they leave they take with them the valuable expertise and knowledge that working for the Service affords. Little conscious effort is made to record the experience of historical architects. The lessons they have learned while working on historic structures leave when they leave, and new historical architects have to learn those lessons all over again. Appropriate treatments for historic structures, knowledge of historic building materials and historic building technology are not available in the colleges and universities. Some colleges have degrees in historic preservation, perhaps two have degrees in architectural conservation. But learning about historic building materials and historic building systems does not come in school and is of vital importance in making responsible decisions on preservation treatments for historic structures.

Recognizing the need, Jerry Rogers directed Lee Nelson and Hugh Miller to develop a plan. Emogene Bevitt, Program Analyst, Preservation Assistance Division, was assigned to provide full-time staff support in developing the plan. By the end of 1984, they had developed the ideas for developing skills for architects. A draft was written in early 1985 and sent to historical architects in WASO. Each was interviewed for his/her reactions and

ideas. Another draft was sent to all historical architects, their supervisors, and regional directors in May 1985. The first attempt was made to identify the "universe" of skills that a historical architect should know. Based on comments by NPS architects and further efforts of the authors, the document now describes over 100 different skills. Perhaps more importantly, some of the most basic and important skills are described in greater detail to show a range from basic to master level with examples of the kinds of tasks that are related to the skill.

### **Background Requirements**

As an example, a historical architect needs to know about historic roofs. At a basic level, the historical architect could know about the evolution and development of wood, metal and slate roofing systems; the basic wood shingling materials like red cedar, white cedar, oak, cypress, locust, chestnut, and white pine; regional preferences and the availability of these materials in a given region, and the practices of making shingles by both hand and machine; the fastening systems for roofs, sheathing systems, and use of flashing.

At an advanced level, a historical architect could know about more specialized materials, such as the use of tile roofs; roof appendages, roof cresting, roof balustrades, skylights, and flashing problems; and composition, concrete, and stone roofs.

At a master level, the historical architect could be conducting new research on the uses of roofing materials and craft practices in regions; and know about temporary materials such as thatching and bark; and roof coatings including tar, paint, red iron oxide, linseed oil and brick dust, sanded paints and creosote; specialized roofing practices such as Ludovici Interlocking Spanish Tile roofs; and special finishes such as gilding, glazed tiles, and ceramic metals.

Since this plan emphasizes self-help, a selected bibliography is included with each of these skills to provide a starting point for learning more about a topic.

### **Commitment Agreement**

To participate in the plan, the historical architect consults with his/her supervisor and both agree to a three-year commitment. The historical architect agrees to prepare an Individual Development Plan (IDP), a Personal Study Plan (an expansion of the IDP concept), and to develop three projects. The Personal Study Plan allows the historical architect to identify an area of professional, job-related interest and describe what time would be needed to learn more about this interest. This time would likely be a combination of personal and office time. The historical architect would also describe a possible project or presentation of information learned during this period. The project could be an oral presentation, or written, such as an article for the CRM Bulletin; or graphic, such as an exhibit for the office or local AIA chapter.

Thus, the plan benefits the individual as well as the Service through the growth of the individual and the dissemination of information throughout the Service. In this way, the base of knowledge in the Secret about historic materials, historic craft and building techniques and systems, and historic structures can grow and help to serve future needs.

In his preface, Director Mott notes that "Beyond the uses of this plan for historical architects, much of it could be used by architectural conservators and parts of it are applicable to preservation specialists, trades mechanics, maintenance workers and cultural resource management generalists. I also see it as a model and I would like to see other disciplines develop such a compendium of skills and investigate the creative potential of the Service to assist our employees in developing their skills."

### **Appendix Developed with NCARB**

An appendix to the plan relates to architectural registration and has been developed in cooperation with the National Council of Architectural Registration Boards (NCARB). Many architects who enter the Service after graduation have experienced a reluctance by

state registration boards to accept Service employment as being true architectural work. The Service has been aware of this bias for some time and in developing the appendix with NCARB has taken a significant step in assisting such employees in qualifying to take the licensing examination. NCARB is a nationally recognized organization that sets the standards and developed the Architectural Licensing Examination. While each state has its own requirements (architects register with a state of jurisdiction to receive a license), the majority of states accept NCARB's training program as also meeting their requirements. The appendix describes Service tasks that NCARB has accepted as meeting their training requirements. Thus, interested Service architects could enroll with NCARB in their Intern-Architect Development Program in which work experience is reviewed at regular intervals to document the acquisition of required training experience. The Service tasks identified in the appendix qualify under this program. When all the training requirements are met, NCARB forwards the documentation to the state registration board for acceptance and the Service architect can then take the licensing examination.

Those interested in reviewing a copy of the Skills Development Plan should contact any historical architect or CRM manager.

The author is a program analyst in the Preservation Assistance Division.

# SKILLS

## for Curators

**Ann Shafer**

"Special skills are needed to adequately prepare fossils for scientific study and display"—this was the theme of the Fossil Preparators' workshops held at Flagstaff, Arizona. Sponsored by Northern Arizona University and taught by Howard H. Converse Jr., curator and fossil preparator at the Florida State Museum, as well as author of *Handbook of Paleo Preparation Techniques*, their purpose was to bring fossil preparators together from around the world, to exchange techniques and develop a professional network of colleagues for future information exchange. This type of interaction proved especially important since no fossil preparation journals presently exist in English (and only one in German), nor are there any publications that document advances in preparation techniques. The dominant means of communication among fossil preparators remains word-of-mouth.

Though the courses were not specifically sponsored by the National Park Service, NPS curators and museum technicians can benefit from the skills taught there. Approximately 10 NPS units contain internationally significant fossil resources, while numerous other sites contain less significant but nevertheless important remains. This presents unique problems when curators or technicians prepare a fossil for display or study with no prior experience and no written guidelines. Unlike many other resources, each individual fossil is extremely valuable, for in many cases, fossil plants and animals are known from only one individual. This is due in part to the very unique environmental conditions that must exist for fossils to be preserved. Thus, a fossil that is poorly prepared and curated can easily eliminate a wealth of significant information, while even a poorly preserved fossil, well prepared and well curated, can give maximum scientific information.

Specific fossil-related problems include methods of excavation (removing the fossils from rock or soft sediment), cleaning techniques and agents, repairing fractures, reconstructing missing parts, preserving delicate structures, and proper storage. Each fossil locality presents a different set of problems as well. However, assistance is available from the staff at Dinosaur National Monument. In addition, large museums or universities often have a fossil preparator. Finally, a few good texts exist. *The Handbook of Paleo Preparation Techniques* (1984, Florida State Museum, University of Florida, Gainesville, FL 32611, \$10.00) makes general information available, along with lists of U.S. supplies and suppliers. *Fossil Animal Remains, Their Preparation and Conservation* (Rixon, 1976, Humanitus Press Inc., New Jersey, approximately \$27.00) is much more detailed than Converse. It also lists supplies and suppliers, but these are located in England and so of little use here. Nevertheless, both books should be in the libraries of all fossil parks, for they may prevent potentially destructive techniques from being used.

Besides preparation problems, many fossils present a further complication. They are often too fragile for display or for loan via the mail service to other paleontologic institutions. One solution is to make casts of the original fossil. Today, there is a wide range of molding and casting materials from which to choose. Generally, a mold and cast can be made for a modest cost, without threatening the safety of the original. This leads to unlimited potential for interpretive uses of specimens that in the past would have been too rare for hands-on experience, and for exchanging among parks. For details of molding and casting see the previously suggested publications or contact Dinosaur National Monument.

With so many parks dealing with fossils, it is time to develop a preparation cadre. Until we do, however, curators must draw upon other sources for up-to-date techniques

and materials. Hopefully, this will eliminate unnecessary damage to the expansive fossil resources of the National Park Service.

The author is Museum Technician, Dinosaur National Monument. Anyone seeking information on curatorial and/or preparation techniques for fossils can contact her at P.O. Box 128, Jensen, Utah 84035, 801-789-2115.

## FACTS

As part of our celebration of the 20th anniversary of the National Historic Preservation Act of 1966, we have put together the attached summary of information on some of the Cultural Resources programs, administered in the National Park Service, which can be used in any public addresses you may give.

### **National Register of Historic Places**

Since 1966, approximately 4 million properties, including sites, buildings, structures, objects and districts, have been identified and included in inventories of 57 states and territories participating in the Historic Preservation Fund Grants-in-Aid program. In 1966, the year the National Historic Preservation Act became law, 686 properties were listed on the National Register of Historic Places. In 1986, about 45,000 properties are listed, with over 11,000 more determined eligible.

#### Categories of listed properties (% of total listings):

Buildings.....	75%
Districts.....	13%
Sites.....	7%
Structures.....	4%
Objects.....	1%

#### Significance of listed properties (% of total listings):

National.....	13%
State.....	32%
Local.....	55%

#### Ownership of listed properties (2% of total listings):

Private .....	72%
Local.....	18%
Federal.....	5%
State.....	5%
Mixed .....	0.1%

The 1980 amendments to the National Historic Preservation Act provided for greater participation of local governments in the program. As of June 1986, 192 local governments had been certified for formal participation in the historic preservation program. A computerization of the National Register is currently underway, which includes all 45,000 entries now in the National Register.

The new computerized National Register will make it easy to retrieve data on a particular property, a range of properties sharing particular characteristics, geographic distribution and status of a property. This information has never before been available so quickly and easily.

### **Preservation Assistance**

The National Park Service has technical publications offering advice on how to do most anything regarding the care and preservation of old structures. There are publications on many topics, including conserving energy in historic buildings, repointing mortar, reroofing, dealing with adobe, cleaning terra-cotta, window repair, rehabilitating storefronts, maintenance, masonry walls, wallpapers, and even moving the building.

### **Historic Property Leasing**

In 1984, the National Park Service began to lease historic properties as a means to protect these cultural resources at the least possible expense to the Federal government.

Specific properties are offered for lease to individuals, groups, or organizations who assume responsibility for rehabilitating and maintaining them.

Proceeds from historic property leases are used to maintain, repair and preserve NPS historic property and run the leasing program. All properties offered for lease are either listed or eligible for listing on the National Register of Historic Places.

As of June, 1986, park superintendents had identified 134 candidates for lease—89 historic structures and 45 parcels of agricultural land. Of these, 50 have been leased, generating annual revenue of approximately \$40,000 and a combined estimated value of rehabilitation and property improvement work of \$4,451,000.

#### **Current leases (by region):**

Alaska—none  
Mid-Atlantic—6  
Midwest—6  
National Capital—2  
North Atlantic—6  
Pacific Northwest—none  
Rocky Mountain—none  
Southeast—12  
Southwest—18  
Western—none

#### **History**

Of the 337 units of the National Park System, 190 (about 60%) are of predominantly cultural significance.

Every United States president from George Washington to Gerald Ford is commemorated by a historical park or landmark. Abraham Lincoln and Theodore Roosevelt are each honored by five park units.

Six parks were established to recognize prominent black Americans. Twelve more interpret significant contributions made by blacks.

Three percent (49 in FY 1985) of all National Historic Landmarks (NHL) are severely damaged or threatened with damage and are reported to Congress.

In FY 1985, 20 NHLs received in-depth inspections, coordinated by the National Park Service to analyze their physical condition and provide estimates for needed preservation work.

#### **Tax Incentives Program**

Since 1976, over 15,000 projects, worth more than \$10 billion, have taken place, or are now getting underway, in cities and towns across the country. All of these projects have had review and approval from the National Park Service. In FY 1985, 57% of these projects were rental residential; 19% mixed use development; 12% office; 9% commercial; and 3% other, including banks, hotels, and factories.

The majority of rehabilitated buildings are old: 13% were built before 1850; 64% were built before 1900.

Overall, 37% of the projects estimate rehabilitation costs to be under \$100,000; 56% cost less than \$200,000. Large rehab projects, those costing more than \$1 million, make up 13% of projects.

The ten states with the most tax credit activity are: Pennsylvania, Missouri, New York, Maryland, Massachusetts, Ohio, Georgia, Louisiana, Virginia, and Kentucky. Ninety-six percent of all certification applications received by the National Park Service are ultimately approved.

#### **National Historic Landmarks**

There are 1,697 National Historic Landmarks, representing nearly every aspect of American history from the earliest peoples in prehistoric times to the space program of today.

### **Curatorial Services**

The National Park Service has over 10 million museum objects, 65% of which are archeological. Over 90% of NPS museum objects need to be cataloged.

The variety of National Park System museum collections ranges from historic furnishings in the home of John Adams, to Thomas Moran paintings at Yellowstone, to flags that flew over Fort Sumter, to Thomas Edison's notes on inventions, to the tools and furnishings of a working ranch in Montana, to botanical specimens and California Indian basketry from Yosemite and archeological collections from Mesa Verde.

The National Park Service has 45 curators and 111 museum aids, technicians, and specialists caring for museum collections in over 300 park units. An automated cataloging system, developed by the Curatorial Services Branch, will be issued in 1986.

By 1987, the public will have access (through the Government Printing Office) to the two parts of the Museum Handbook which provide detailed guidance on preservation, storage, protection and record keeping for museum collections.

### **Cultural Resources Management Bibliography (CRBIB)**

Over 7,000 reports about history, architecture, archeology, and collections within the National Park System are cataloged on this computer system and are now being microfiched for easier public access. Many of these documents are one-of-a-kind references, providing invaluable information not previously available for general distribution. The Government Printing Office now has some of this information available.

# Preserving for the Past for the Future

**George L. Painter**

The Lincoln Home in Springfield, Illinois is one of the most significant sites associated with the life of America's revered sixteenth president. Originally designed as a single-family residence, it has evolved into a furnished historic house museum. In the December 1984 issue of the CRM BULLETIN, and again, in the October 1985 issue, various elements of its restoration have been discussed, including wallpaper research and historic furnishings. Perhaps one of the greatest concerns at the present time is its durability in the face of high visitation.

In 1887, Robert Todd Lincoln, Mr. Lincoln's oldest son, donated the house to the State of Illinois. He stipulated that "said Homestead shall be forever kept in good repair" and made accessible to the public. The State of Illinois administered the house until 1972. On August 18, 1971, Congressional legislation mandated the National Park Service to preserve this internationally significant structure for future generations.

Since the National Park Service began to administer the Lincoln Home, eight million people have passed through its doors. This substantial increase from the handful of people who once occupied its rooms has led to great concern over the impact continued high visitation might have on the structure.

In order to preserve the original fabric and assure the stability of the home, the NPS has undertaken a comprehensive architectural preservation project. Included has been a program of intensive architectural research to identify those portions of wood, plaster, and other fabric remaining since Lincoln's time. Another goal has entailed locating weak areas in the house's structural system.

To accomplish this, historic architecture has relied on interactions with other cultural resource disciplines. Research in historic documents, furnishings, and wallpaper have illuminated the structure's interior and exterior development. The excavation of a well and cistern behind the home have involved the skills of archeologists to a significant extent and will continue to guide work around the foundation.

Following the research phase of the investigation, staff members erected scaffolding along the north elevation and commenced removing boards. This activity disclosed new evidence concerning the history and condition of the house. More Lincoln-era plaster was discovered than had been anticipated. The work also exposed past termite damage in need of repair, and cast new light on the enlargement and remodeling of the home in 1856. Apparently, the contractors hired by the Lincolns used good construction techniques. This discovery undermines the traditional belief that their craftsmanship had been substandard.

The removal of boards on the north elevation afforded the first opportunity to examine the brick chimney shafts and their relationship to the foundation and the wooden framing. Significantly, the rear parlor chimney turned up approximately 40 square feet of brown Lincoln-era paint. Though 1860 newspaper accounts described the Lincoln Home exterior as brown, this discovery provided the first conclusive evidence of the correct shade.

The exploration begun on the north elevation has continued around the perimeter of the house, with architects documenting the wooden framing for purposes of later structural reinforcement. Physical investigation has also begun on the interior. The work done here disclosed a weak area in the floor between Mr. and Mrs. Lincoln's second-story adjoining bedrooms. This enabled the site to make much-needed changes in the way these two rooms are presented to the public. After ascending the front stairway, visitors peer into Mr. Lincoln's room from behind a barrier. Then they pass through the guest and boys' rooms. Finally they view Mrs. Lincoln's bedroom. As a result, they come away thinking that Mr. and Mrs. Lincoln's "separate bedrooms" reflect marital disharmony (in spite of the fact that the rooms were truly adjacent with a common doorway). Therefore, the project plans to

strengthen the floor between the two rooms so that their historical context will be preserved.

Moving the visitor flow pattern away from the guest and boys' rooms will provide yet another benefit. To facilitate public access, the boys' two doorways were moved during the 1950s. The new route of visitor movement will make it possible to return these doorways to their historic locations.

Information disclosed through continuing physical investigation has shaped specific decisions on how to preserve and restore the home. Measures range from repairing and replacing deteriorated fabric to reinforcing beams and other structural members. A climate control system will be installed to provide an optimal environment for both the house itself and the historic furnishings, with minimal impairment of original fabric.

It is estimated that the entire architectural preservation project will last two to three years. This will help the National Park Service achieve its mandated purpose: "To preserve and interpret for the benefit of present and future generations the home of Abraham Lincoln in Springfield, Illinois..."

The author is Historian, Lincoln Home National Historic Site.

## **Success Stories**

### ***Tri-Taylor Historic District, Chicago,***

This tiny (600 homes) Italian, Hispanic, Black neighborhood in the heart of Chicago was about to be gobbled up by encroaching University of Illinois and Westside Medical Center. Homeowners, resigned to the inevitable purchase and demolition of their turn-of-the-century homes by the medical center, did nothing to maintain their property. Encouraged by the local preservation council, homeowner Art Perez and other residents got organized and sought historic district status. The neighborhood was listed in the National Register as a historic district. The recognition made residents aware of the historic significance of their community and the craftsmanship that went into the 1880s-period homes. Now the homeowners have pride in their residences—and the new status gave them a foothold in the community. Each year since National Register listing in 1983, about 30% of the homes are being worked on with an average of from \$800 to \$3,200 being spent to fix up and clean up the houses. Residents are turning the neighborhood into a showplace, abandoned buildings are being restored, and the whole community is now behind the effort.

### ***Impact of Federal Tax Incentives—Canandaigua, NY***

Located on a hill overlooking the lake in Ontario County, New York, Canandaigua suffered main street blight 10 years ago. Faced with the prospect of losing an entire street of Federal and Greek Revival houses to a parking lot, the demolition of a 1975 firehouse and hotel, and razing of the commercial buildings for a mini-mall, a group of preservationists convinced the Common Council of Canandaigua that a historic zoning ordinance was needed. This created the historic districts upon which the later multiple resource area nomination to the National Register was based. In 1984, Canandaigua's Multiple Resource Area was listed on the National Register. As a result of the listing, and its attendant investment tax credits, private investment in downtown revitalization has increased by \$2.5 million.

# Cultural Landscaping: Buffalo National River

Richard J. Alesch

Traditionally, the National Park Service has managed natural and cultural landscapes under two different conceptual models or management philosophies. The first, generally applied to natural areas, has evolved over the last 25 years from protecting selected natural features and species ("component management") to preserving, and in some cases restoring, natural ecosystems and processes ("ecosystem management"). A good example and current application of this model is the use of fire, both prescribed and natural fires, to restore natural ecosystem processes. The second model, generally applied to cultural areas, involves preserving and in some cases restoring a landscape to a specific period. A classic example is the Civil War battlefield where the goal is normally to recreate the scene during the battle.

A relatively recent variation on the second model is the "continuum" concept where a specific historic date or period is not identified. Landscape change over past years is viewed as part of the historic record, with values to be preserved as part of the story. Generally, the year the area was established or when the land was acquired by the Park Service becomes the important preservation date. The continuum variation on the historic preservation model is still relatively simple—freeze the area in time and avoid any future changes to the historic scene. This approach also has the beneficial aspect of avoiding expensive and problematic restorations to an arbitrarily chosen earlier period, often with incomplete historical data.

## Preserving Landscapes

Most older natural areas in the system were carved out of the uninhabited Federal domain in the West. Many newer areas, largely in the East, contain rural communities that have resisted land acquisition efforts. Recognizing that these areas have scenic and perhaps other values, and in an attempt to accommodate current residents, park plans and legislation allowed residents to temporarily or permanently stay on their land through long-term occupancy agreements, life estates, or scenic easement agreements. Consequently, there are several areas in the system where potential "cultural landscapes" are preserved, at least for now. However, these landscapes do not seem to fit the two traditional management models briefly described above. An example is Boxley Valley at Buffalo National River. The legislative history and 1975 Master Plan for the national river identified the valley as a "private use zone" to preserve the scenic pastoral landscape; however, a complicated land ownership pattern developed through the land acquisition process during the late 70s. Boxley Valley land acquisition became highly controversial in the local community; very deep-seated feelings and bitterness developed toward the Park Service. Valley residents were even interviewed on a national network television special that criticized Park Service land acquisition policies. The end result was that some scenic easements were purchased, but most farms were acquired in fee. Several of these were immediately vacated, and many more were destined to be vacated as "use and occupancy" terms expired during the next 10-15 years. The community was still viable but in a state of decline, and the area was slowly reverting to nature by default rather than by a conscious management decision.

## Melnick Research

Around 1980 the Park Service began to look at these vernacular or relatively commonplace landscapes to determine if they contained historic values deserving preservation. The National Park Service Washington Office contracted with Professor Robert Melnick to research the issue and develop a manual for identifying and evaluating cultural landscapes (see CRM Bulletin, Vol. 8, No. 1). A significant concept that came out

of this effort is that cultural landscapes should continue to evolve over time, a notion that conflicts with the traditional historic preservation model. Boxley was one of the case study areas where Melnick did research. This work led park and Southwest Regional Office personnel to request a formal cultural landscape study and a management plan for Boxley. The Denver Service Center (DSC) was assigned the task in 1983. DSC's primary research task was to determine the valley's historic significance, and the critical planning issue was to determine how to preserve the cultural landscape and still protect the park's primary resource, the river.

Boxley Valley management issues were controversial within the Park Service as well as outside the agency. To address the broad range of study questions, an interdisciplinary team was assembled, including specialists in land use planning, cultural resources, natural resources, landscape architecture, and park management. The team was supplemented by consultants in water quality, soils, streambank erosion, agricultural economics, history, and archeology.

Using Melnick's research as a point of departure, relevant data on slopes, visual resources, vegetation, geology, floodplains, soils, archeology, historic resources, land ownership, and land use were assembled or generated and mapped on a common scale in a series of overlays. Although some of this information was readily available, other data requirements necessitated field research. Three cultural resource specialists spent two weeks in the valley recording data on historic landscape features, which were eventually incorporated into a National Register of Historic Places nomination form. Two natural resource specialists developed a land use map by interpreting and field-checking aerial photographs. The team's landscape architect prepared an open-field visibility map using topographic base sheets and on-site inspections. A particularly controversial issue was how to permit agricultural practices, especially grazing, without adversely affecting river water quality. The natural resource specialists pulled together the literature on grazing and water quality impacts, including research done at Buffalo River by the University of Arkansas (Parker and Strain, 1978) and elsewhere by others (Doyle, et al, 1975).

### **Management Plan Developed**

After muddling through several lively brainstorming sessions, the team developed a draft report (NPS, 1984) with four management alternatives that can be summarized as follows: (1) emphasize natural resource preservation, (2) emphasize traditional historic preservation, (3) emphasize private use with minimum controls, and (4) a preferred alternative that combined selected elements of the other three alternatives in an attempt to balance these otherwise conflicting objectives. After public and agency review, the preferred alternative was revised and approved as a final plan (NPS, 1985).

The approved plan recommends a long-term cooperative effort with the Boxley Valley community. The plan encourages maintenance and rehabilitation for existing houses, but it allows some new construction to maintain a viable community and avoid a static museum-type display. Agriculture, including grazing, will continue, with good conservation practices as recommended by the U.S. Department of Agriculture, Soil Conservation Service. The plan recommends that additional water quality research be done to further assess the impacts of grazing before permanent land use commitments are made. The water quality study has since been completed, and the results are being used in implementing the plan.

### **Success of the Plan**

To encourage a sense of community and supplement farm income, the plan permits certain commercial uses, specifically, a small store, bed-and-breakfast operations, and horse rentals. Historic structures will be preserved through continued traditional private uses. Exterior modifications are permitted under Park Service guidelines. New construction will be compatible in location, size, scale, color, and character with existing cultural

landscape features. If new construction is appropriately designed, modern building materials may be used.

Most fields will be kept open through continued agricultural use as mentioned above. Buffer strips and areas will be maintained or established along the river to protect streambanks, and fields will be fenced to keep stock out of the Buffalo. A somewhat controversial plan provision calls for the Park Service to resell certain acquired farmlands and buildings, with deed restrictions, to private parties, preferably the former owners. Other lands may be leased under the historic properties leasing program.

By encouraging desired activities and controlling major changes, the plan's ultimate result will be perpetuation of a significant rural cultural landscape, with protection for critical natural resources (such as river water quality), and provisions for appropriate visitor use (such as canoeing, scenic driving, interpretation, hiking, and horseback riding). The plan will succeed because it is a comprehensive document with interdisciplinary input, there was extensive public involvement during the study, and there is a strong commitment by park management to implement the strategy. This last element cannot be overstated. A continuing management commitment is essential to preserve a cultural landscape.

The Boxley study produced the first "cultural landscape report" for a rural historic district in the national park system. The plan presents a new resource management model for the Park Service— managed change. It does not prevent change, as would be typical for a traditional historic landscape, nor does it allow unrestricted "natural" change, as would be typical for a traditional natural area. Because a rural cultural landscape is a mix of natural and cultural forces, the new model seems most appropriate. However, it may present the biggest challenge for park management; the concept is not as simple as the traditional models. Working with local residents and deciding how much change is enough or too much, although guided by the report, will be a continual management issue.

The author is a park planner at the Denver Service Center.

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# Historic Landscaping:

## Moores Creek National Battlefield

Fred Boyles

Moores Creek National Battlefield was first established as a national military park in 1926. The site was previously administered by the State of North Carolina through the Moores Creek Battleground Association. As in the case of many of the older national military parks, the landscape of the park has been concentrated on grounds management, and little attention was given to the landscape in relation to its historic appearance. Monuments, neat lawns, and ornamental shrubs give a "shrine-like" atmosphere to visitors that managers have long felt as appropriate to a historic landscape.

In early 1985, a resource problem was identified at Moores Creek with the large trees that provide shade and other pleasing benefits. The park is dominated with large, mature loblolly pines (*Pinus taeda*). This species of pine is susceptible to pests and diseases, especially when overly mature or stressed. The most serious threats are the southern pine beetle and fusiform rust, forcing removal of many trees that posed problems to visitor safety and property.

### Root of the Problem

Most of the over 100 large loblolly pines removed in the last 10 years were victims to pine beetle or fusiform. Storm damage took its toll, but pests or disease were the real root of the problem. An in-depth evaluation in the summer of 1985 confirmed the problem and further identified several root diseases that had the possibility of spreading, the greatest threat coming from a large scale infestation of pine beetle or disease which has the potential of a catastrophic effect on the large loblollies.

A closely related issue is the historic landscape at the time of the battle in 1776. A Historic Base Map and Grounds Study in 1974 by Denver Service Center staff identifies the longleaf pine (*Pinus palustris*) as the dominant tree of the park area and all of eastern North Carolina in 1776. The longleaf pine is important to the park story because the naval stores industry was the primary economy of North Carolina both before and after the revolution.

The longleaf pine was the best source of naval stores and gave the region economic stability by "bleeding" the trees for their resin. Because of the longleaf's unusual growth cycle, it is best suited for the unique environment of eastern North Carolina. Current forestry practices have nearly eliminated its commercial use today; therefore, few grow on the managed forests of the region.

After consultation with foresters, historians, regional and Denver Service Center staff, several tracts of recently acquired lands that had served as house sites and small farms were planted. Current NPS management had been to mow the area once yearly. Other areas of the park were also open for planting with the exception of those areas where the longleaf does not occur naturally such as swamps, etc. In August 1985, a Section 106 statement was prepared and approved for planting 1,000 longleafs and other deciduous species. This was further supported by the Historic Grounds Study of 1974.

### Seedlings Planted

The staff then investigated planting techniques and further developed an implementation plan. Information was difficult to obtain since the longleaf is not a preferred species by most commercial foresters. However, foresters at Bladen Lakes State

Demonstration Forest, administered by the State Forestry Commission, were able to assist with the preparation and planting of seedlings.

Even when planted correctly, the expected survival rate is 60% to 70% under good conditions. The biggest concern was not to plant the trees in rows, giving them a "planned forest" look. Also, trees were not planted in poorly drained soils or within six feet of wire grass, a plant that gives off a natural toxin to young longleaves.

The seedlings were purchased in late January 1986 from the State Nursery in Goldsboro, NC. They were immediately prepared by trimming the needles, trimming back the side roots, and dipping the roots in a clay water mixture to insure moisture preservation in the root system. Extra care was taken not to damage the critical tap root or the bud of the seedling. All 1,000 seedlings were planted within eight days upon arriving at the park by the staff who had received training in proper planting techniques. Spacing was constantly monitored through the process, along with a site planting plan approved in the 106 statement. Once planted, many of the trees can be watered easily during the first critical year of growth. Dry spells are the biggest enemy of young longleaves.

Deciduous trees will be planted in the spring as seedlings are available. Several donations of seedlings were made by Union Camp Corporation of those desired hardwood species identified in the Historic Grounds Study. Another tree to be planted in the winter of 1987 is the pond pine. This species is now rare but was a native pine in 1776 growing in low swampy areas. Seed for these trees was acquired from the State Forestry Commission, bedded in the Spring of 1986, to be replanted next winter.

### **Future Success Unknown**

It is too early to proclaim success with this project. The effect will be measured in 20 to 30 years. If too many trees have been planted, future management can thin them out to more approximate a natural longleaf stand. Another question management must ask is: "What role did natural fire play in Revolutionary North Carolina?" This will have to be answered within the next five years. The start has been made to present the historic landscape more accurately. Another issue involved whether the project is a natural or cultural resource. Because of its effect on the historic scene, it was considered a cultural issue, although much of its implementation involves principals of forestry. Historic landscapes are still an issue that provokes more questions than answers among professionals. This effort at Moores Creek will benefit the visitors' perception of the battlefield scene and allow more effective interpretation of the park's story.

The author is the Superintendent at Moores Creek National Battlefield.