

The George Wright

FORUM

Volume 8



1991



Number 2

Landscapes



Civilian Conservation Corps crews working at Rim Village, Crater Lake National Park, Oregon. In order to achieve the desired effect, many large specimen trees were brought to the Rim and planted in order to create a more "natural" looking landscape (ca. 1932).USNPS archives.

The George Wright Society

Dedicated to the Protection, Preservation and Management
of Cultural and Natural Parks and Reserves
Through Research and Education

The George Wright Society

Board of Directors

Melody Webb, President

Johnson City, Texas

Gary E. Davis, Vice President

Ventura, California

Lloyd L. Loope, Treasurer

Makawao, Hawaii

Stephanie Toothman, Secretary

Seattle, Washington

Jonathan W. Bayless

San Francisco, California

Kheryn Klubnikin

Washington, DC

Susan Bratton

Grantham, Pennsylvania

George J. Minnucci, Jr.

Conshohocken, Pennsylvania

Stephen D. Veirs, Jr.

Davis, California

The George Wright Forum

Jean Matthews, Contributing Editor • *Corvallis, Oregon*

William E. Brown, Contributing Editor • *Gustavus, Alaska*

Executive Office

Hancock, Michigan

Robert M. Linn, Executive Director

David Harmon, Deputy Executive Director

© 1991 The George Wright Society, Inc. All rights reserved.

On the Cover

Rim Village in Crater Lake National Park . . . “is a designed historic landscape in the Rustic style . . .” Article begins on page 2.

The George Wright Forum

Volume 8

•

1991

•

Number 2

LANDSCAPES

Tools of the Trade: Methodologies in Landscape Preservation Cathy Gilbert	2
National Heritage Corridors: Redefining the Conservation Agenda of the '90s Rolf Diamant	13
Heritage Areas: A Policy Perspective Sally G. Oldham	17
To Examine a Place in Time and Space: The Integrative Approach of Landscape Ecology Robyn Myers	26

A Response to "The Global Change Research Program and the U.S. National Park Service: Six Essays" Sarah G. Bishop	30
USNPS Science: The Five Most Important Issues Dan Huff	34
National Parks in the Eastern United States: The Mammoth Cave Experience Bruce J. Noble, Jr.	38

The 1992 George Wright Society Conference

The Seventh Conference on Research and Resource Management
A First Look and Call for Papers **43**

Society News, Notes & Mail	46
About the George Wright Society / Membership Form	47

Tools of the Trade:

Methodologies in Landscape Preservation

Cathy Gilbert

*USNPS Pacific Northwest Regional Office
Seattle, Washington*

The American landscape, as J.B. Jackson has so eloquently told us over the years, is more than place, it is a cultural archive. From highly articulated parks and formal gardens, to large rural communities and suburban townscapes, the landscape itself can often be read as an indicator of cultural pattern, values, and heritage. The academic context for the concept of landscape as cultural archive is best understood in the history of art and literature, and in the work of cultural geographers and historians who, for many years, have been investigating the relationships between culture and the built landscape (1). In more recent scholarship the traditional academic division of landscapes into categories of "natural" or "cultural" has begun to disappear as we realize that even some of our most cherished "natural" landscapes such as the Grand Canyon, or the Yosemite Valley, have taken on cultural value. For Native Americans in Alaska and the American Southwest, traditional hunting grounds and migration routes are ethnographic landscapes that carry value in the culture through many generations. Perhaps even more challenging are the intangible or ephemeral values found in the way people experience or think about the land, such as the

spiritual connotations many Native American groups associate with landforms, flora and fauna, and natural processes. In these cases, the "natural" landscape is the cultural value (2). Over the past several years, many organizations and individuals have actively been involved in the redefinition, documentation, and preservation of cultural landscapes. Publication in 1984 of Robert Melnick's book, *Cultural Landscapes: Rural Historic Districts in the National Park Service*, was in many ways the first attempt to clearly identify the characteristics that compose the landscape as a cultural system, and to provide a methodology and framework for the documentation, evaluation, and management of these resources. Most importantly, Melnick's book did two things: it emphasized the need for good historical research as the basis for landscape preservation; and it restated the critical need to view the landscape as a dynamic system, with potentially multiple periods of significance, rather than as a static entity (3). To be sure, there will always be gardens and landscapes that are significant as artifact, but the preservation philosophy that freezes a resource to a single time and place is not often realistic for a cultural landscape. Even if many of the individual features in a landscape—

such as walkways, stone fountains, fencing details, and site furniture—can be preserved in a traditional manner, other key components, such as vegetation and landforms, by their nature change over time; disruption of these ecological processes is neither realistic nor appropriate.

Both in an academic and practical context, cultural landscape preservation has become a discipline in itself, drawing together professionals from the fields of landscape architecture, history, geography, horticulture, archaeology, and architectural history. While this interdisciplinary approach to the topic has boosted scholarship, it has led to considerable debate over definitions, language, and appropriate preservation treatments. For example, within the preservation community, a cultural landscape is defined as any geographical area that either has been impacted by human activity, or serves as the background for an event or person important in our history. Although this term is commonly used to denote a landscape that has historic value, it is a very broad definition and has led to considerable confusion because virtually every landscape we see has been impacted in this way. From building roads to establishing property lines and building houses, the physical landscape is, for better or worse, residual culture. With this in mind, the term cultural landscape is now generally considered as an umbrella term, under which are four more specific types of landscapes, including historic designed landscapes, historic sites, historic vernacular landscapes, and ethnographic landscapes (4). While the further classification of these landscapes was helpful for some, for many others the issue remained confusing. For exam-

ple, it is not uncommon for a vernacular landscape to have designed characteristics or ethnographic resources within its boundaries. Many wondered if different types of landscapes required different approaches with regard to documentation or treatment. At a more basic level, for many professionals accustomed to traditional preservation which tended to focus on structures, it was difficult to think beyond the building to a preservation theory that stressed the preservation of a dynamic resource where change, function, and use were as significant as design and material.

In more recent years, many of the concepts expressed by Melnick and others have been influencing both academic and practical applications in landscape preservation, leading to a welcome and energetic exchange of information. Professional organizations such as the Alliance for Historic Landscape Preservation and the American Society of Landscape Architects have sponsored symposia, workshops, and publications providing a forum for practitioners and academicians actively exploring the issues and presenting case studies for debate and thoughtful examination. As the nation's lead preservation agency, the USNPS has undertaken a number of initiatives ranging from a Servicewide survey of historic orchards to the development of working definitions, standards for treatment, and management strategies for preservation and interpretation. It has further enforced its commitment by funding numerous cultural landscape studies and, perhaps most significantly, has in the last year staffed two historical landscape architects in the Washington office where policy is developed for the Service as a whole. In addition, the National Trust for

Historic Preservation and the Association for Preservation Technology have both recently begun to include sessions devoted to historic landscapes at annual meetings, and published literature focusing on landscape preservation technologies. While these professional organizations were working to institutionalize the philosophical framework for a landscape preservation ethic, scholars continued their research and greatly expanded the type and number of available resource materials. In addition to boosting the number of publications on landscape history, this work has led to the establishment of new repositories and research facilities such as the Catalogue of Landscape Records at Wave Hill in New York, and the Olmsted Archives at Olmsted National Historic Site in Brookline, Massachusetts.

These efforts and others like them have had a strong influence in the development of new techniques and theories of landscape analysis and preservation which, in turn, have impacted the ways in which issues are identified and addressed. These landscape preservation techniques have had the most significant influence in three primary areas: *inventory and documentation*; *landscape analysis and evaluation*; and *treatment*.

INVENTORY AND DOCUMENTATION

A strong commitment to research and the use of research materials has perhaps had the greatest impact on the technology of cultural landscape documentation. While historical research traditionally involves almost exclusive use of the archival record, research in the context of documenting the cultural landscape requires

the review and interpretation of the archaeological record for the site, and a detailed physical investigation of the existing landscape.

The use of various written materials, including manuscripts, diaries, personal accounts, newspapers, and correspondence, is most useful in understanding the design intent and the historical context within which the landscape will be evaluated. This is especially important with designed historic landscapes where the original concept behind the design often serves as the basis for preservation treatment. For example, the writings of Frederick Law Olmsted have been used extensively to develop conservation and preservation guidelines for many landscapes designed by the Olmsted firm, such as the suburban village of Riverside outside of Chicago, Illinois. Designed by Olmsted and Calvert Vaux as a prototypical suburban village in 1868-69, Riverside is a landscape characterized by gently curving streets, generous setbacks, and large park areas and open spaces. Although Riverside has retained much of its original landscape character, there have been a number of changes over the years prompting the local historical commission and the Riverside Village Board to initiate a landscape rehabilitation plan. In developing the plan, Olmsted's writings were used to identify key landscape design principles and restate the philosophy associated with the original Riverside plan. Research into Olmsted's writings, for example, indicated that he intended to supplement the existing plantings at Riverside with new materials to create a pastoral or "beautiful" style. According to Olmsted, formal plantings were to be avoided in order to enhance the qualities of the natural

scene. New plantings were to be massed, establishing a natural, layered appearance, stepping-up from the ground plain. In this way the relationships among plant groupings, open spaces, streets, the river, and other landscape components contributed to a landscape where the individual feature—the isolated tree, single shrub, or street—was not as significant as the overall coherent scene (5). These principles were documented and used in the development of specific conservation guidelines for the landscape of Riverside, targeting reestablishment of key relationships and patterns as originally intended by Olmsted, rather than a plant-by-plant restoration.

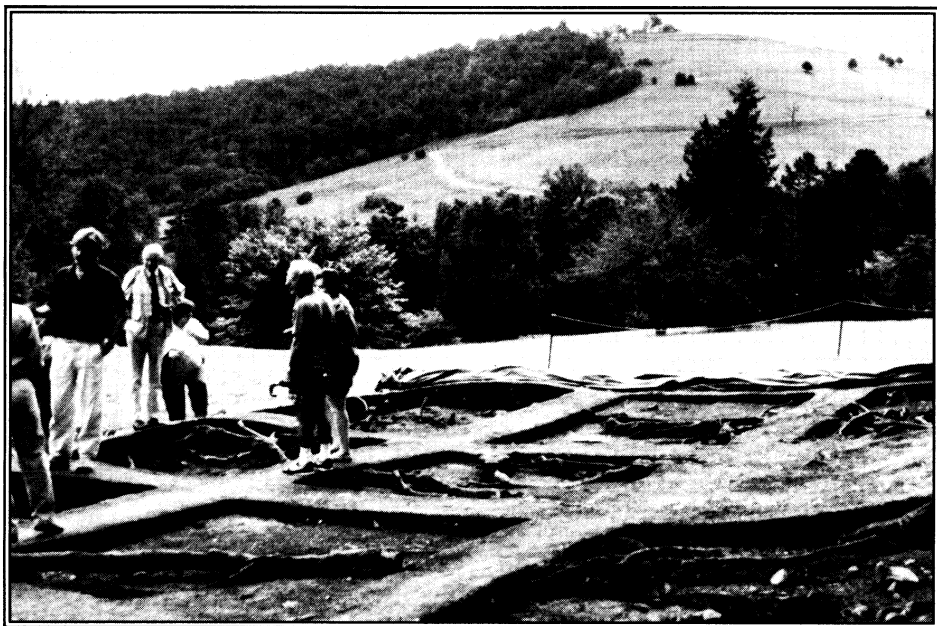
Other documentary materials, including maps, oral histories, aerial and infrared photographs, historic photographs, paintings, drawings, and illustrations, are basic tools for understanding what the landscape looked like during its historic period(s). In rural areas, aerial photographs are often used to document large-scale settlement patterns, land use activities, and circulation networks. These patterns and relationships are important in the landscape because while the small-scale features—fences, crops, and outbuildings—can change frequently, these large-scale patterns often remain for generations. Infrared photographs provide an additional layer of information by depicting features that may not be discernable on the ground plain. For example, at George Washington Birthplace National Monument in tidewater Virginia, infrared photographs were used to identify Indian occupation sites, and to map an extensive system of irrigation ditches dating from the eighteenth century. Neither of these features were visible during

the initial ground survey. At a smaller scale, historic photographs are invaluable for illustrating the physical appearance of the landscape at a specific time and place. At Eugene O'Neill National Historic Site for example, historic photographs were used to determine the character and location of non-extant garden features such as walkways, terrace walls, and planting areas. In one case, individual bricks depicted in a historic photograph were counted using a magnifying glass in order to determine the width and dimension of a historic path so that it could be accurately reestablished. Archaeological investigations and ground testing at the site were used to verify these findings, and proved initial interpretations to be very accurate.

For many historic landscapes the archaeological record can also help in determining the lay-out and character of missing garden features, and can clarify the structural history of the site using both ground profiles and artifact analysis. These techniques have been used for garden restorations with dramatic results at such places as Bacon's Castle and Thomas Jefferson's Monticello (6). At Monticello, archaeological excavations revealed a variety of marks, or "stains," in the soil, left behind as fence posts decayed, old ditches silted up, and planting beds were covered. In conjunction with the delineation of these features, the traditional archaeological practice of determining chronology by dating groups of artifacts found in association with each layer allowed archaeologists to separate Jefferson's original garden from later ones (7). In addition, archaeological investigations can provide much needed information on historic land use practices, historic vegetation, and the

use or manipulation of natural resources by a cultural group. This technology—called phytolith or

pollen analysis—is especially valuable to the documentation of cultural landscapes (8).



Archaeological investigations, Monticello, Virginia. Along with the extensive written record, these investigations are helping archaeologists determine location, extent, character, and materials historically comprising Thomas Jefferson's garden at Monticello.

Documentary source materials and the archaeological record are fundamental aspects of site research and investigations, but the key to documentation and understanding the landscape as a cultural system is most often found in the link between documentary sources and the physical landscape. The identification of character defining patterns and features in the cultural landscape has, more than any technology, provided a methodology for documenting the cultural landscape in a systematic and practical manner. Landscape components—including spatial organization, circulation networks, land use patterns, vegetation, individual structures and cluster arrangement, and any number of small-scale fea-

tures such as fountains, fences, walls, and sculpture—all contribute to defining the cultural character of the landscape. New landscape inventory formats have been developed by several professional organizations, and by federal, state, and local governments. These formats range from simple check-lists—which have been used to document such diverse cultural landscapes as the taro fields, irrigation ditches, and farmhouses of Hanalei on the north shore of Kauai; park and rural landscapes throughout Illinois; and a 17,400-acre rural historic district in Washington state—to more detailed inventories combining graphic and written materials in a catalog format. While both formats require site investigations, field mea-

surements, sketches, and photographs of key landscape components, the catalog format encourages the integration of historical data to facilitate a preliminary analysis and assessment of significance. This type of format has been used by the USNPS to inventory such diverse sites as backcountry homesteads in Washington's North Cascades and Spanish Colonial mission sites in San Antonio, Texas. In every case, our ability to recognize cultural landscape components and document them through time has become the key to a successful methodology and process for assessing significance in the landscape.

ANALYSIS AND EVALUATION

The organization and synthesis of data gathered as part of research and field documentation leads directly to the analysis and evaluation of the landscape. The evaluation itself is the technique for assessing value. But just because a landscape is old does not mean it has historic value. It must be evaluated within a historic context and meet National Register criteria for significance and integrity. The National Register of Historic Places has a long history of listing structures, but as recently as 1986 did not have criteria for evaluating landscapes. Working with landscape architects and other professionals actively involved in preservation, the National Register responded to the need by developing three bulletins addressing a process for documenting and evaluating different types of cultural landscapes (9). Like other historic resources, a landscape must meet one of the four criteria for significance and have integrity. These new criteria are similar to existing National Register standards in that the significance of a landscape must

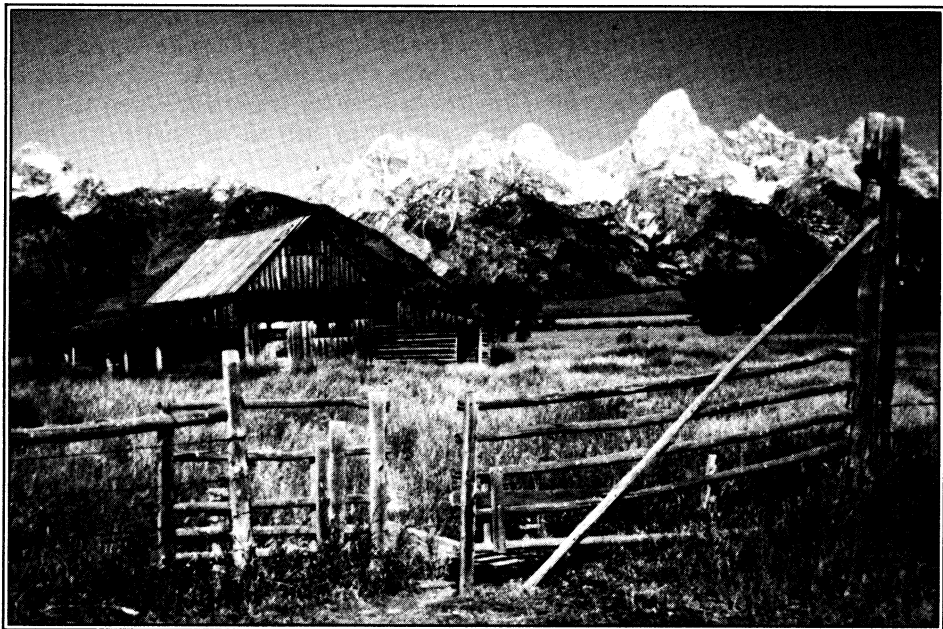
either be associated with broad patterns of history or the lives of individuals important in history, or with the work of a master; be important for its physical characteristics or design; or be able to yield information important in prehistory or history. Cultural landscapes that are less than fifty years old, have been built for commemorative purposes, and gardens or parks that are reconstructions, must meet additional criteria for listing (10). Despite years of debate, the fifty year rule remains troublesome when assessing the significance for most cultural landscapes—especially vernacular and ethnographic landscapes—because a great deal of their significance often rests in the concept of continuum, both in terms of use and function, and material and design.

Integrity is the ability of the landscape to reflect its significant historic characteristics and features and is defined by seven qualities—location, design, setting, materials, workmanship, feeling, and association. Because landscapes change over time, cultural landscape integrity takes into account the condition of surviving historic components, the impact of non-historic features, and the loss of significant features (11). As an example, for a historic ranch complex in the East Corridor of Grand Teton National Park, Wyoming, integrity of design is characterized by the definable patterns of spatial organization, the location and character of roads, building clusters, vegetation, pasture lands and corrals, irrigation ditches, fence lines, and so on. Integrity of design is determined by the degree to which those key landscape characteristics survive and relate to the period or periods of historical significance. If the original fence has been rebuilt in the same

location and is similar in character to the original fence it does not detract from the overall integrity. If, however, seven of the original nine buildings associated with the complex are missing altogether and the historic cluster arrangement cannot be discerned, vegetation has overtaken pasture lands, and irrigation ditches have eroded beyond repair,

the site has lost too much fabric to have integrity of design.

In addition to addressing the issues of significance and integrity, the bulletins outlined a process for documentation, assessment, and long-term preservation planning that has had a great impact on our ability to preserve and manage the significant characteristics and features of a landscape (12).



The Moulton Homestead, Grand Teton National Park, Wyoming. The remnants of an early ranch/homestead in the East corridor of the park. All but one building removed, yet landscape retains evidence of original complex (vegetation, irrigation ditches, etc.).

TREATMENT

As in other areas, preservation technologies for the treatment of cultural landscapes is far behind accepted treatments for buildings. The need to develop guidelines specifically for landscapes like the Secretary of the Interior's "Standards for Rehabilitation" has finally been recognized and is being addressed by several groups in collaboration with the USNPS's Office of Preservation

Technology and Assistance (13). This work is especially valuable in terms of technology because it is bringing together the collective skills and knowledge of individuals who have been working in the field of landscape preservation for over a decade, all of whom share the goal of developing a technology with broad and uniform application. Guidelines for Acquisition, Protection, Stabiliza-

tion, Rehabilitation, Restoration, and Reconstruction are being developed for landscapes at three levels: site context/environment; the property itself; and individual elements and landscape features including plant materials, landforms, circulation, buildings and structures, and site furnishings. This format is working to reinforce and expand the framework of existing landscape preservation technologies that have been employed in the past, fundamentally exploring the ways in which we manage change. More significantly, it is restructuring the way in which we view and evaluate landscapes, ultimately enhancing the ways we protect and preserve them.

These techniques for documenting, evaluating, and treating cultural landscapes have been a catalyst for a new type of preservation ethic focusing on realistic and viable strategies for preserving cultural landscapes. In practice, however, the development of specific techniques are most often influenced by applied theory. In the past several years there has been a tremendous growth in the number of landscape preservation projects, ranging from the rehabilitation of Eugene O'Neill's one-acre courtyard garden at the Tao House near Danville, California, to the innovative preservation planning of thousands of acres in the Connecticut River Valley under the leadership of the Center for Rural Massachusetts. These projects and many others have promoted a greater awareness of the issues and challenges of applying landscape theory and analysis to the actual preservation of a cultural landscape. The need for and use of historical research, site investigations, National Register criteria for significance and integrity, and appropriate treatment, has created opportunities

to integrate the historical record and resource values with long-term objectives for use and management. A good example of this is the landscape preservation study recently completed by the USNPS at Rim Village in Crater Lake National Park, Oregon.

Rim Village is a designed historic landscape in the Rustic style, implemented by the USNPS and Civilian Conservation Corps workers between 1927 and 1941. Rim Village is also the primary developed area in the park and is the focus of a multi-year redevelopment project which includes a major rehabilitation of the Crater Lake Lodge, the construction of new structures and visitor facilities, and reconfiguration of the historic landscape, including the roads, pedestrian paths, rock walls, and plantings found throughout the site. That the landscape was going to change to accommodate new uses at Rim Village was not in question. What was at issue was how much and what type of change could occur without losing the qualities and characteristics that define this significant historic landscape. The purpose of the historic landscape study at Rim Village was to investigate the historic record, identify and evaluate cultural landscape resources, and develop recommendations for preservation of significant resources within the context of the redevelopment program for the rim. While preservation does not preclude development, to be successful treatments must be based on an assessment of historical significance. At Rim Village, as in all cultural landscape assessments, the objective was to clearly identify the individual features that constitute the historic landscape (in terms of form and function) and then analyze those features in relation to each other, and

within the context of the overall design intent. It is from this understanding that appropriate treatments for preservation and management were achieved.

The historic record for Rim Village was particularly rich, and provided the basis for documentation, evaluation, and the development of preservation guidelines for the site. The landscape architects working at Rim Village in the 1930s kept copious notes, recording not only what they did from month to month but why and how they did it. In this regard the historic record is more than a chronology, it is a record of the ideas and technologies for implementing the USNPS Rustic style and philosophy to the landscape of Rim Village. Several documentary materials were used in the research phase of the project. Among the most essential were primary source materials on file in the park, including historic photographs, maps, drawings, oral history transcripts, master plans for the park, and manuscripts such as the Superintendent's Annual reports chronicling the implementation of the design. In addition, monthly reports of the Chief Landscape Architect working in the park were located at the National Archives. Many of these reports contained photographs illustrating construction techniques, and hand-rendered site maps depicting work at the Rim as it progressed. These materials were useful not only for describing the general character of the landscape, but were critical for understanding the design intent behind many key components of the design. [Ref. cover photo.] Period literature, such as Albert Good's *Park Structures and Facilities* (1935), and literature on landscape design by Frank Waugh, Henry Hubbard, A.J. Downing, and

Olmsted, was used to understand the historical context for the Rustic philosophy in landscape design, and the physical expression of that philosophy in the landscape at Rim Village. Base-line documentation, including park studies and historical files compiled by the park historian, was also used. From these records, a landscape history was written, documenting the site in terms of use and function, material, form, and design intent. Primary landscape components were then documented in terms of their historic form and role in the landscape, and as they exist in the contemporary landscape. National Register criteria were used to evaluate the significance and integrity of individual features in the context of the overall design. Based on this evaluation, recommendations for treatment were developed.

The primary treatment selected for the landscape at Rim Village was rehabilitation, allowing for appropriate adaptive use without compromising the historic design intent for the site. For example, planting beds throughout Rim Village were historically composed of native materials arranged in groupings that reflected plant associations typically found in nature. This was a basic tenet of the Rustic philosophy with regard to plant materials as designers worked to integrate and blend building and artifice into the "natural" landscape. In the new design for Rim Village, where historic planting beds are to be disturbed, they will be re-established using in-kind materials. Plant-for-plant restoration is inappropriate in this context because what is important—the design intent—is the use of a native plant palette, and the massing of materials to create a specific effect. Moreover, where new planting areas are needed they will follow this

same concept, assuring continuity in the overall planting scheme for the site and design as a whole. In another instance, where new roads or walkways are needed, the guidelines addressing layout and configuration will also follow design criteria formulated from the historic record and landscape evaluation. New roads will be constructed only when necessary and designed in the "naturalistic" style, curvilinear in character and recessed to appear subordinate to the landscape. Again, in this particular landscape, the overall Rustic philosophy as defined in the historic record, and the physical expression of that philosophy in the landscape, provided the basis for treatment. Similar guidelines were developed for other landscape components at Rim Village, from land-use patterns to rock walls and picnic tables. In every case, a clear understanding of the historic record and the significance of individual features in the context of the landscape as a whole was critical for determining an appropriate preservation treatment.

This process of documentation, evaluation and treatment has fostered an interdisciplinary approach to landscape preservation which, in turn, has led to a greater understanding of the complexity of these resources. While these technologies are molding a stronger preservation ethic for cultural landscapes, there are many more questions and issues to address. For example, we still must overcome the tendency to preserve the "image of place," rather than the time and place that is landscape. This is the difference between nostalgia and preservation, and it is a mentality that has turned many 19th-century industrial towns on the U.S.'s East Coast into quaint villages complete with street trees, Victorian-

style benches, and manicured turf with bedding plants on the commons, all of which never existed historically. It is not always realistic to throw soot on the sidewalks and let pigs roam the streets for effect, but some consideration must be given to the landscape as cultural context and as an interpretive environment in and of itself. Cultural landscape interpretation is a technology that is just beginning to emerge, and undoubtedly will play a strong role in the development of new strategies for preservation. Finally, it is important to recognize the need for additional investigation and scholarship in the discipline of landscape history. There has not, for example, been a nationwide theme study on landscape architecture. Without such a study, key historical contexts in the field will remain ill-defined and critical academic typologies of stylistic trends, design principles, and the identification of individuals significant in the field of landscape architecture will remain obtuse at best, and scholarship will remain with a relatively small group of academicians. Reinforcing the bridge—between practice and scholarship—is critical to the development of viable and creative new technologies for preserving our cultural landscapes. . . . preservation not just because a landscape is old, but because it has values that we can identify as part of our cultural heritage.

ENDNOTES

1. Melody Webb, "Cultural Landscapes in the National Park Service," *The Public Historian* (Vol. 9, No. 2), Spring, 1987, pp. 78-80. Also see notes, pp. 78-79, for bibliographic sources of related work.
2. Hugh C. Miller, "Landscape Preservation . . . What's Next," presented as the closing address at the Landscape Preservation Seminar held at Amherst, Mass., on March 26, 1988. Also see the USNPS's *Cultural*

- Resources Management Bulletin* (Vol. 10, No. 1), February 1987, an issue focusing on ethnographic resources.
3. Robert Z. Melnick, *Cultural Landscapes: Rural Historic Districts in the National Park System* (Washington, D. C.: U.S. National Park Service, Park Historic Architecture Division, 1984), pp. 1-5. Also see Webb (1987) for a good discussion of Melnick's work.
 4. The definitions were developed by the USNPS in 1985, in collaboration with the American Society of Landscape Architects and other professional organizations. Additional designations such as "memorial landscapes," "folk landscapes," and "landscape setting" are also used in different regions of the country. The USNPS will be revising these definitions in 1991.
 5. Malcolm Carins and Gary Kesler, "Protecting a Prototype," *Landscape Architecture* (Vol. 77, No. 4), July/August 1987, pp. 62-65. Many of the design principles used by Olmsted in Riverside (as well as most of his other projects) were also used by other landscape architects working during this era, establishing a recognizable landscape design style and historical context for evaluating landscapes from this period.
 6. Kathleen McCormick, "The Garden, History Unearthed," *Historic Preservation* (Vol. 42, No. 4), July/ August 1990, p. 58.
 7. William Kelso, "The Archaeology of Thomas Jefferson's Monticello Landscape," paper presented at the Conference on Landscape Archaeology held in Charlottesville, Virginia, 1986.
 8. William Fisher and Gerald Kelso, "The Use of Opal Phytolith Analysis in a Comprehensive Environmental Study: An Example from 19th-Century Lowell, Massachusetts," *Northeast Historical Archeology* (Vol. 16), 1987, pp. 30-48.
 9. Bulletin #18, "How to Evaluate and Nominate Designed Historic Landscapes" (1987); Bulletin #30, "How to Identify, Evaluate, and Register Rural Historic Landscapes" (1989); and Bulletin #38, "Guidelines for Evaluating and Documenting Traditional Cultural Properties" (1990).
 10. Linda McClelland, "Inventory and Evaluation: Historic Landscapes in the National Register," Proceedings of the Landscape Preservation Seminar, University of Massachusetts at Amherst, March 25-26, 1988, pp. 15-17.
 11. *Ibid.*, pp. 18-19.
 12. The planning process articulated by the National Register incorporated much of the work done earlier by Melnick and others. This is especially true for Bulletin #30, which focused on rural landscapes and was co-authored by Melnick. Other bulletins drew on the professional experience and expertise of Timothy and Genevieve Keller (Bulletin #18), and Dr. Patricia Parker and Dr. David King (Bulletin #38).
 13. The current initiative by the U.S. National Park Service has been going on since 1989, and is being coordinated by Laurin Meier, Historical Landscape Architect in the Preservation Assistance Division in Washington, D.C. Earlier concepts and efforts to develop standards for landscape treatment can be found in David Streatfield, "Standards for Historic Garden Preservation and Restoration," *Landscape Architecture* (Vol. 59, No. 3), April 1969, pp. 198-204; Lisa Kunst and Patricia O'Donnell, "Historic Landscape Preservation Deserves a Broader Meaning," *Landscape Architecture* (Vol. 71, No. 1), January 1981, pp. 53-55; and Christine Capella Peters and Kathleen Maloney, "Standards and Guidelines for Preservation Treatments of Designed Historic Landscapes," developed as an academic project for Cornell University and the State University of New York, in coordination with the State of New York's Office of Parks, Recreation and Historic Preservation (unpublished report), 1989.



National Heritage Corridors



Redefining the Conservation Agenda of the '90s

Rolf Diamant

*Frederick Law Olmsted National Historic Site
Brookline, Massachusetts*

When we look back at the accomplishments of the 99th Congress of the United States in the field of parks and conservation, the establishment of the Blackstone River National Heritage Corridor and the Great Basin National Park present an interesting study in contrasts. Great Basin National Park, located in eastern Nevada, encloses one of the last great wild areas of the American landscape—more than 100,000 acres of desert mountains and basins. By contrast, the Blackstone National Heritage Corridor, only 40 miles in length, follows the course of the Blackstone River from central Massachusetts across the border into

Rhode Island—one of the earliest industrialized river valleys in the United States. There are only a handful of ranches within Great Basin; the Blackstone River National Heritage Corridor includes 20 communities in two states. Great Basin contains a magnificent record of geologic history, with rock formations millions of years old. Along the Blackstone, extensive historic features of 19th century industry and commerce represent a heritage of a more recent time and human scale.

But the difference between Great Basin and Blackstone is more than just size or terrain; for the U.S. National Park Service, Great Basin

quite possibly represents the close of an era—it may not be the last of the great wilderness national parks to be created, but most everyone agrees opportunities for creating more parks of this size and nature, even in the West, are fast disappearing. And while it is still too soon to tell if the number of National Heritage Corridors will grow beyond a handful, it is clear that by creating areas like the Blackstone—and now the Delaware and Lehigh—Congress has by some degree broadened the definition of heritage and landscape values which deserve national recognition and protection. And in creating the National Heritage Corridors, Congress has also crafted a new approach for cooperative planning and resource management a world apart from the traditional park management model of Great Basin and its predecessors.

A contemporary landscape preservationist, Robert Melnick, has written:

There are places in this country that we look at every day, but we never really see. They are the landscapes of heritage; places that seem so natural that they often go unrecognized, misunderstood, unprotected and mismanaged.¹

The heritage landscape of the Blackstone Valley is more than the sum of its individual historic homes, mill structures, canal locks, and towpaths that still survive along the river. Rather, the landscape of the Valley is a tapestry; though frayed, often covered up and in some places torn, it still reveals a remarkable pattern of early 19th century mill vil-

lage life and the transition from farm to factory. The tapestry of the Blackstone Valley is very much a living landscape—mills are being renovated for elderly housing as well as for a variety of light industries—company-built row housing is still in use, in some instances occupied by a new generation of immigrants. Many of these resources cannot and should not be managed or cared for isolated from the larger valley community.

Heritage corridors are American prototypes of a new international category of conservation areas, referred to as "protected landscapes." Protected landscapes" are defined by the International Union for the Conservation of Nature and Natural Resources (IUCN) as "places of outstanding significance where traditional community values and ways of life endure and evolve in harmony with the environment."²

The first National Heritage Corridor legislation, for the Illinois & Michigan Canal in Illinois, was developed by Congress in the early 1980s as an alternative to national park designation and the long-term financial and operational commitments associated with federally managed parks. Fiscal considerations aside, the new corridor legislation, by focusing on a formula of technical assistance and regional cooperation rather than single agency ownership and management, offers a more appropriate strategy for responding to the unique circumstances and pre-

¹ Robert Melnick, *Cultural Landscapes: Rural Historic Districts in the National Park System* (Washington, D.C.: USNPS, 1984).

² *Protected Landscapes—A Guide for Policy Makers and Planners*, Proceedings of the Conference on Protected Landscapes, Lake District, England, 1987 (Cambridge, U.K.: IUCN, 1987).

servation needs of many cultural landscapes.

Heritage corridors include populated productive lands under multiple ownerships and jurisdictions where extensive acquisition and administration by a single agency is both impractical and counter to the objective of preserving the land's cultural diversity and indigenous character. In defining this new "partnership park" concept, the Congress is articulating a national interest in the conservation of these landscapes, while at the same time recognizing the legitimate stewardship responsibilities of state and local governments and private organizations and individuals. This new partnership approach appears to be gaining momentum, as Congress has subsequently established national heritage corridors in the Blackstone Valley and along the Delaware and Lehigh Canals.

A key ingredient of the corridor model is the federally appointed Heritage Corridor Commission. The role of the commission is to define common ground among landowners, various participating parties and units of government in developing a program that integrates heritage and conservation objectives with regional planning and economic development.

The role of the USNPS is primarily that of a catalyst providing national recognition, technical assistance, and support. The National Park Service neither owns nor manages land within the corridor, but has the responsibility of coordinating other federal activities in the corridor to encourage maximum consistency with the program objectives of the commission.

The corridor concept draws much of its original inspiration from Lowell

National Historical Park and the success of the Lowell Historic Preservation Commission in facilitating economic revitalization outside the boundaries of the park. Lowell is a much-studied example of how heritage preservation can become a driving force in tourism and urban economic development.

Heritage corridors have also been influenced by the USNPS's successful State and Local River Conservation Assistance Program, where levels of government and the private sector are encouraged to work together in cooperative projects to conserve nationally important river values.

Ultimately the most important ingredient for the lasting success of this effort will be a strong sense of community responsibility and a willingness on the part of partners to link their destinies with those of their neighbors. Historic preservation and conservation must be perceived as a long-term investment in the future.

Perception is the first and most crucial battleground. In the case of the Blackstone, there is a clear need to build a shared perception of the valley's natural and cultural significance as a region, given years of economic decline, negative self-image, and the nature of its fragmented administrative and political jurisdictions.

High-visibility special events and demonstration projects can serve to enhance regional pride and identification with the distinctive character of the area. The importance of tangible, small successes cannot be overstated. For in a larger sense the corridors themselves are national demonstration projects where new working relationships between federal and state agencies, local communities, private individuals,

groups, and businesses are being tested.

Heritage conservation and environmental quality can serve to diversify economic opportunity, providing a more broadly based and sustainable future in contrast to the boom-and-bust cycle these corridor areas experienced in the 19th and early 20th centuries.

As the remaining unprotected vestiges of American wilderness disappear, along with the potential for more parks like Great Basin, most conservation opportunities in the 1990s will occur in places like the Blackstone and Delaware and Lehigh Valleys—where natural, cultural, and recreation resources are integrated into the fabric of existing communities. USNPS professionals, working in the challenging environments of heritage corridors, can gain new skills in building public support for conservation. This experience is directly transferable to some of the toughest management issues confronting National Parks today, particularly where the success of regional planning and cooperation between them and their neighbors is essential to ensure long-term protection of park resources from outside threats.

There may be times as you begin your planning for the Delaware and

Lehigh that you find that agreement is difficult to reach and progress seems slow, as it will involve the cooperation of many parties dealing with complex issues. But stay the course, for cooperative planning, like democracy itself, is not valued so much for its efficiency as for its eventual success in achieving consensus and a long-term commitment to the future.

I wish you well with your work along the Delaware and Lehigh canals and your new National Heritage Corridor. You have come a long way so far and have much to be proud of. We are all indeed a long way from Great Basin, but the challenge of preserving the beauty and heritage of America is wherever you find it—whether it is in mountains of Nevada or the valleys of Pennsylvania.

—

This paper was originally presented as the opening remarks to the Conference on the Delaware and Lehigh Canal National Heritage Corridor, Lehigh University, Bethlehem, Pennsylvania, March 1989.



Heritage Areas: A Policy Perspective

Sally G. Oldham
Scenic America
Washington, D.C.

America's landscape heritage distinguishes one region from another and shapes our national character. A series of grassroots and public-sector efforts to identify and preserve regional landscapes is resulting in new alliances between environmental, conservation, historic preservation, recreation, and business interests. These projects are termed "heritage areas" in this paper.

The "living landscape" is a term used to refer to regional landscapes, including communities and natural areas which have been shaped by human activities as much as by natural processes. They are referred to as "living" landscapes to acknowledge the expectation of change. The desire of citizen activists and public officials to "manage" change in the living landscape has resulted in an exciting burst of conservation, heritage, and economic development activity.

These efforts, which address the conservation of many resource types, now number 50 or 60 projects in various stages of planning and implementation. They are found predominantly in the Midwest and East. They build on citizen interest developed over the past decades in many resource types: scenic byways, trails, wild and scenic rivers, historic buildings and districts, vernacular and designed landscapes, and others.

In the 1960s and early 1970s, a series of federal laws put in place policies to identify and encourage conservation and protection of valuable resources in both public and private ownership. These laws include the Outdoor Recreation Act of 1963, the Land and Water Conservation Act, the National Historic Preservation Act of 1966, and the National Trails System and National Wild and Scenic Rivers acts, both enacted in 1968. Corollary programs to identify and designate historic resources, trails, and rivers were established by many state legislatures and local jurisdictions, in some cases in advance of federal laws.

Tens of thousands of natural, scenic, cultural, and recreational resources have been inventoried and designated by public entities at local, state, and federal levels. In many cases, nonprofit groups have formed to work hand in hand with public officials to preserve and enhance these resources. Occasionally friction has arisen, but more frequently this combination of public and private interests has resulted in creative programs, wise use of resources, and an enhanced quality of life for those in nearby communities. Some of these efforts have been called "greenways." The term, as defined by Charles E. Little in his book *Greenways for America* (American Society of Landscape Architects, 1990), refers to

a linear open space established along a natural corridor, such as a riverfront, stream valley, or ridgeline, or overland along a railroad right-of-way converted to recreational use, a canal, a scenic road or other route.

In the past decade, what may come to be understood as a new resource type has developed. These projects are generally more complex

in scope than those mentioned above and combine resource types and purposes already mentioned with an added purpose of economic improvement. In this paper, these projects are termed "heritage areas." Many, though not all, are being developed with technical assistance from the U.S. National Park Service.

USNPS staff developed a broad definition of the term "heritage area":

A Heritage Area is a regionally identifiable and significant landscape that is the focus of a cooperative public and private decision-making effort to recognize, organize, and communicate a community's natural, cultural, recreational, and economic attributes to protect important values, stimulate the local economy, and improve the quality of life.

There is no consensus on terminology as of yet. What are referred to here as "heritage areas" are actually called by several labels, such as "heritage corridor" when the resource is linear and "heritage project" if it encompasses a non-contiguous area. The USNPS refers to some of its heritage area involvements as "partnership parks," generally a mixed-ownership park where public and private lands are mingled and management structures vary. A "heritage park" usually refers to an urban park with mixed public and private ownership.

Several elements set heritage areas apart from past efforts: their size, complexity of jurisdictional oversight, and tensions created by their potentially conflicting goals. The purposes and functions of heritage areas are generally the following:

- ◆ Resource protection;
- ◆ Economic development, generally including tourism;
- ◆ Recreation; and

◆ Public education.

Heritage areas vary in size from a single city, to multiple counties, to areas spanning several states. Common characteristics among these projects include:

- ◆ Strong local effort for the heritage area effort.
- ◆ An emphasis on identifying diverse resources as a first step.
- ◆ Evaluation of the resource base within a larger, more complex context than is usually the case, with the potential to yield a sense of significance greater than the sum of the parts.
- ◆ Strong emphasis on education, first of involved citizens, then of a wide range of constituent and public-interest groups, and ultimately of the users through telling the stories (interpretation) of the heritage area.

Challenges for these projects include:

- ◆ Developing and communicating the vision of the heritage area as that of a living landscape incorporating many resources, where the significance of the whole may be understood as greater than the sum of its parts.
- ◆ Balancing protection strategies within the context of managing these living landscapes and enhancing and conserving resources while allowing for change and economic growth.
- ◆ Securing sustained funding to achieve the goals of these projects: enhancing the quality of life, protecting important values, and stimulating local economies.
- ◆ Strengthening strategies for attracting private-sector investment through understanding and integrating their interests from the start of the planning process.

A policy perspective on heritage areas can be developed by examining their characteristics in five general areas:

- ♦ Jurisdictional oversight;
- ♦ Justification for designation;
- ♦ Competing goals for protection and promotion;
- ♦ Sources of funding; and
- ♦ Education and interpretation.

JURISDICTIONAL OVERSIGHT

There is no uniform national system for evaluating heritage area proposals to determine if they are worthy of recognition and designation. There is no consensus as to whether such a national system should exist or even whether heritage areas constitute a discrete resource type.

Heritage areas are most often designated either by a state agency or Congress. There is no enabling legislation at the federal level, however, so every new area vies for congressional support and independent funding through the USNPS. Both the USNPS and Congress are studying how to create a system to provide some control over new heritage area studies. Such a system might mirror that of the Wild and Scenic Rivers Act, where the enabling legislation is specifically amended when studies of new rivers are mandated by Congress, providing a framework within which these studies are carried out.

Three national heritage corridors have been designated through acts of Congress. In each case a federal commission has been established to guide development and oversight and technical assistance is provided by the USNPS. Over 30 similar projects are receiving technical assistance from the USNPS, often in anticipation

of Congressional designation, and still others desire such assistance. The USNPS has not sought these projects; rather, Congress has imposed them on USNPS through the appropriations process. Until recent years, additions to USNPS appropriation requests were generally for construction. Last year, Congress doubled the funds that USNPS had requested to study new areas and specified 23 new studies to be undertaken.

Heritage area projects have aroused considerable policy debate within the USNPS. The agency's director, James Ridenour, has been quite direct in his expressions of concern about these projects, which he fears will lead to a dilution of the quality of the U.S. National Park System. He wrote in the November/December 1990 issue of the USNPS newsletter *Courier*:

I have a growing concern that we, as a nation, are "thinning the blood" of our national park system. . . . I am concerned that we are spreading our limited resources over a growing base and that, as a result, we may suffer the possibility of sliding into mediocrity rather than continuing to enjoy the prominence that we have long received.

The perspective from the local level is quite different. There, leaders see the USNPS as a source of funds and expertise for projects they consider worthy. The issue as to what criteria should be used to determine merit for Congressional funding has not been resolved. The USNPS's assistance to these projects is often channeled through its Rivers and Trails Conservation Assistance Program, which grew out of the old Bureau of Outdoor Recreation and which deals with resources outside USNPS ownership and control.

In contrast to the USNPS's sometimes reluctant participation in plan-

ning, the states which have created heritage area programs have moved aggressively to develop them. Also in contrast, economic development purposes have been a strong motivating factor in state-based programs. An issue for further study is whether non-federally designated heritage areas can achieve their goals as well as those that are, and vice versa.

Lowell, Massachusetts, was first developed as a heritage park in the early 1970s and funded by both the state and federal governments. It led to a State Heritage Park system with urban renewal as an important goal. The Pennsylvania State Heritage Parks program was created in 1989 to preserve the industrial heritage of the state, enhance regional economies through tourism and employment opportunities, and provide new corridors for recreation. Designation is determined by an inter-governmental task group working under the direction of the state's Department of Community Affairs.

In other instances, local citizens have organized nonprofit corporations and created their own designations, as with the Lexington-Frankfort Scenic Corridor. The corridor encompasses 95 square miles and 60,000 acres of rolling countryside—Kentucky's famous bluegrass—crossed by two-lane roads and home of the state's finest thoroughbred horses. This heritage area was initiated by the owners of several horse farms who were concerned about the depressed state of their industry, how to channel tourism interest, and how to encourage support for thoroughbred horse racing. Although not a party to the designation of the scenic corridor, local and state government officials have become important partners in the effort. Three

rural historic districts encompassing some 9,000 acres have been listed on the National Register of Historic Places and an even larger area is under survey now.

Other issues addressed by every group that sets out to create a heritage area include multiple forms of land ownership and formats for initial planning and ongoing management. Ownership of land and human-made resources within heritage areas comes in every possible form, often with all levels of government as owners, as well as private and nonprofit organizations. Inventorying lands and resources and profiling this multi-jurisdictional ownership is one of the first tasks for any group interested in establishing a heritage area.

Approaches to initial planning vary widely. They range from grassroots planning, to studies undertaken under federal programs with the USNPS as the lead agency, to detailed studies by commissions authorized and funded by Congress. There is a great emphasis on inter-jurisdictional planning with complex formats for public involvement and review. In many instances, planning seems to move more quickly when the USNPS is involved, no doubt because of staff experience with heritage area planning.

Management also varies depending on local circumstances and the jurisdiction. One of the best models is that of the Illinois and Michigan Canal National Heritage Corridor, where a nonprofit Canal Corridor Association acts as a catalyst for planning and a federal commission does macro-scale planning and gives advice. The Canal Corridor Association board includes the heads of many of the major industries in the area and is invaluable in providing

advice, funding, and access to assist with the corridor efforts. The commission includes representatives of local and state government as well as nonprofit and business interests. Yet another group, Friends of the Canal, includes the grassroots network that supports the development and enhancement of the corridor.

Massachusetts' State Heritage Parks are managed by the state government, while Pennsylvania's Heritage Parks contemplate a local management entity. An important aspect of the feasibility study for these latter parks is identifying local leadership and recommending the creation or designation of an existing organization to manage the project. In the Kentucky case, management is in the hands of a nonprofit organization. In others, management may rest with a coalition.

Although the USNPS is involved in providing technical assistance to the vast majority of heritage area projects, attitudes toward USNPS involvement vary greatly. In some instances, federal involvement is eagerly sought. In others, local leaders want federal funds and little involvement otherwise. The quality of USNPS technical assistance depends greatly on the skills and enthusiasm of individual USNPS personnel. Where USNPS staff work is strong, as noted above, planning seems to move more quickly than when a group sets out by itself.

JUSTIFICATION FOR DESIGNATION

The determination of whether heritage areas constitute a distinct resource type will not be resolved until a detailed study is made to verify, in relation to existing criteria, whether the significance of the resources in

the living landscape do in fact exceed the sum of their parts. If heritage areas are determined to be a discrete resource type, the merits of a national system should be debated. As a separate issue, it would then be possible to explore how to establish the overall significance of a heritage area, just as the USNPS now has established a framework to evaluate the significance of historic resources.

A policy determination that heritage areas constitute a distinct resource type would then allow discussion about whether a federal designation parallel to that of the National Register of Historic Places, but encompassing the pertinent range of resource types, should be created. Such a designation would allow the federal government to establish standards to recognize the importance of heritage areas without the expectation of federal investment and management. This would provide a mechanism for targeting federal, state, and local protections and incentives as is now done with state enterprise zones.

USNPS judgments regarding heritage areas currently are made in the context of evaluation systems developed to apply to specific resources. Yet a heritage area is a unique grouping of resources with a potential significance greater than the sum of its parts. This greater significance has as much to do with how the resources are perceived as with how they are evaluated within their geographic context. In combination, a bigger picture can be seen. The interpretation of historic sites, for example, is linked with a variety of natural features.

One of the great strengths of heritage area planning from the viewpoint of those interested in conservation is the attention paid to invento-

rying existing resources—natural, ethnographic, historic, and recreational. Surveys are available from many sources. As has been stated, however, there is no model for evaluating holistically the significance of hundreds, or even tens of thousands, of acres. The USNPS, which provides technical assistance from a variety of regional offices and Washington, is reportedly inconsistent in its evaluations of resources in heritage areas. Since there is no USNPS policy acknowledging heritage areas as a resource concept equivalent to a historic district or wildlife preserve, the agency has not attempted to create a holistic means of evaluating these areas.

A system to evaluate the significance of heritage areas would help immensely in developing themes and modes of interpretation. It would also provide a sound basis for establishing protections. Protection is one of the toughest policy issues. As in many other arenas, it is far more acceptable to designate than to protect. Protections depend almost entirely on local government action, although certain federal and state designations (Wild and Scenic Rivers, National Register listings, State Trails) are relevant.

COMPETING GOALS OF PROTECTION AND PROMOTION

Evaluating (1) management plans as a means to encourage the adoption of local policies consistent with protection goals, (2) the success of various protection mechanisms, and (3) methods to generate and assess economic returns, are all fruitful areas for future study.

Inherent in the concept of heritage areas is the desire to both protect and promote them. While the goals of

many of the programs used within heritage areas are protection and enjoyment of resources, the added goal of economic development results in the need to seek a delicate balance between use and abuse of resources. The key issue is whether resources are likely to become degraded, and to what extent, by heavy recreational and tourism uses.

Interest in heritage areas varies widely but most often originates with a group of local citizens. Their primary interests generally determine the focus of efforts in heritage area planning. The importance of economic development as a goal is the greatest variable and the issue most likely to create friction among interest groups. In some instances it is an overriding goal, in some a goal to be balanced, and in yet others something subordinate to conservation interests.

The issue of wise management of resources needs to be explored. With most heritage areas still in their infancy, there is little experience on which to draw regarding models of wise management, but proven concepts for given resource types should be assembled to guide planners.

In certain cases, organizers have found that environmental groups are slower to support planning efforts than are conservation and preservation groups. They are not as likely to have formed alliances with the business interests and are wary of abuses in opening resources to use.

Preservationists have recently strengthened alliances with tourism interests, but working relationships are still often tentative, each group not quite trusting the other's support. Conservation and environmental groups generally have had fewer reasons to develop alliances with tourism interests. Much work needs

to be done to adopt policies that are mutually supportive of promotion and protection goals and to develop more understanding and trusting relationships.

Protection policies regarding the effects of public actions in heritage areas are scarce. The three congressionally created national heritage corridors have language in their statutes to specify that officials responsible for projects carried out by a federal entity "shall consult" with the appropriate federal commission, take into account approved plans for the corridor, and, "to the maximum extent practicable," conduct activities in a manner "which will not have an adverse effect on the corridor." No new federal process or regulations have been created to enforce this requirement, however.

No heritage areas examined for this paper appear to have a review mechanism for state-funded projects. While there is a precedent in some states for protecting certain resources from the effects of publicly supported actions, protection from the effects of private-sector actions is more problematic. A number of heritage areas have developed or intend to develop management plans addressing land-use issues. Organizational leaders can then seek to have these plans adopted by affected jurisdictions to guide decision making in licensing and otherwise approving private actions. Adopting land-use ordinances involves a political process, not just a planning one. This may well be the most difficult task that face heritage area leaders, one which is complicated by these areas being composed of living landscapes. Such landscapes consist not of isolated resources but of a continuity of related features which most people have come to take for

granted, often seeing them as having no special value.

The implementation of far-sighted policies regarding land use of development parcels adjacent to heritage areas is critical to maintaining the quality of their environment. In areas being developed for increased tourism, it is essential that policies and regulations regarding setbacks, design standards, and sign standards be put into effect in advance of development pressures.

Heritage areas are so new that little information is available to evaluate economic return. Surprisingly, at Lowell, the forerunner of heritage areas, economic success came so quickly that a method for evaluating economic impacts was not developed as the project got underway. Massachusetts' boom and bust economy provides important lessons, however. Gardner, site of one of the state's most successful heritage parks, now has the state's highest unemployment. Nevertheless, Gardner's business leaders are vocal about the importance of the park to the community.

A mechanism for tracking economic performance should be part of the design of any proposed heritage area. The USNPS manual *Economic Impacts of Protecting Rivers, Trails, and Greenway Corridors: A Resource Book*, can be a useful guide. A method for assessing economic impacts of aesthetic regulations—currently being developed by Scenic America and the Government Finance Research Center, with funding from the National Trust for Historic Preservation—will also be of assistance when it is published next year.

SOURCES OF FUNDING

There is no consensus on how much federal funding is warranted to

develop heritage areas. Questions also revolve around the proper role for the philanthropic community, which has played a relatively small role in funding.

Funding for initial planning most often comes from a public body. Congressional funding is generally allocated on a first-come, first-served basis. Limited congressional funds, taken together with USNPS attempts to force priority evaluations, however, are likely to result in somewhat more systematic criteria for funding in the near future.

Some efforts are university-sponsored or supported by membership contributions. Some groups consciously seek funding and support only at the state and local level to avoid a federal presence. Other groups have found their efforts to secure USNPS funds and support thwarted because so many are seeking the agency's assistance.

One group has obtained an Economic Development Administration grant to inventory businesses that can serve as support industries to increased tourism. The America's Industrial Heritage Project (AIHP), a nine-county heritage area in southwestern Pennsylvania, currently receives the most generous federal funding—\$15 million this year alone—for its plans. Of this amount, \$4-5 million is being spent at USNPS sites. The remainder will be used as seed money for a wide variety of projects. The federal funds must be matched by state and local government and private funds. It is unclear whether the AIHP is a model for future funding or a one-of-a-kind undertaking.

Many heritage areas involve management by nonprofit groups. Foundation grants and corporate contributions are important sources of fi-

nance. Most funding to date, however, has been for planning. Many organizers admit they are insecure in their knowledge of private-sector finance mechanisms and in their ability to attract investment, yet long-term success depends heavily on the confidence and participation of private investors.

INTERPRETATION

Education is one of the principal goals and benefits of heritage areas. Generally, initial planning appears to have been tremendously successful in educating those directly involved in it as well as citizens who would be affected by the plan. It is a significant challenge, however, to develop and then communicate a clear rationale for creating a multifaceted heritage area. Attention needs to be paid to developing ways of assessing the success of interpretive efforts and of deciding which interpretive framework works best to achieve various goals. If interpretation is well-defined and clearly articulated, it will be far easier to get public support and cooperation. Just as important, a strong interpretive framework will also make it easier to instill private investor confidence.

It is not now possible to assess interpretive planning in heritage areas. In most, interpretation is not yet fully implemented. Much interpretation is done on a strictly private basis—by galleries and historical museums, for example. Primary interpretive goals are to identify themes, give consistent messages, and establish links that occur naturally among the cultural, natural, and recreational resources. Policies regarding signs are another important area for evaluation.

CONCLUSION

Viewed in the context of the early 1990s, the grassroots response to create heritage areas is both heartening and not surprising. Federal conservation and historic preservation programs have suffered through nearly a decade of retrenchment. The tightening wrench around the federal pipeline has only recently been loosened slightly.

Conservation and environmental causes have strong popular support. The burgeoning popularity of heritage preservation in the 1980s, fueled by the celebration of the nation's Bicentennial, has reinvigorated heritage education and activism. At the same time, the economic base in many regions has changed dramatically over the past two decades, leaving abandoned and underused buildings and structures in hundreds of communities, especially in the Northeast and Midwest.

Changes in the tourism industry make its professionals willing partners in heritage area developments. As competition within the tourism industry has increased, marketing has become more sophisticated, targeting segmented audiences with recreation, environmental, and heritage interests. In addition, recent studies have pointed to tourism as a potential economic development tool in rural areas.

Nonprofit groups, with undiminished zeal but in many cases with diminished resources, have become strong proponents of creative partnerships. Public entities have espoused such partnerships for some years as their federal pass-through resources dried up. And now the private sector, with economic downturn a fact of life in many parts of the U.S., is beginning to appreciate the

potential benefits of becoming partners in heritage area developments.

National policy proposals pending in the 102nd Congress could, if enacted, reinforce heritage area efforts. A new National Scenic and Historic Highways Program is proposed as part of the Surface Transportation Assistance Act of 1991. Actually, several proposals are pending, some of which provide for designation of scenic roads without establishing minimum criteria; others which do.

The broader policy debate about the design of the federal highway and mass transit programs is in full swing with a strong proposal from a broad coalition of conservation, environmental, and preservation groups to create a better planning process for highway corridors, thus assisting heritage area planning. A National Rural Tourism Foundation is also being proposed in the current Congress.

The 1990s are a ripe time for the development and enjoyment of heritage areas. The determination of whether these areas achieve their many goals will not be apparent for some years. Many policy issues need to be addressed now, however, to ensure that heritage areas reach their full potential and to allow for evaluation of failures and successes.



A version of this paper was originally presented at the National Trust for Historic Preservation's Midwest regional conference on Cultural and Linear Corridors, Toledo, Ohio, April 1991.



To Examine a Place in Time and Space: The Integrative Approach of Landscape Ecology

Robyn Myers

*National Aeronautics and Space Administration
Ames Research Center
Moffett Field, California*

WHAT IS LANDSCAPE ECOLOGY?

Landscape ecology is a new name for what, to many, is a familiar way of looking at Earth processes. Often, the first time someone hears the term "landscape ecology," it conjures up images of a planting design for your front yard, or of food chains and energy pyramids. In reality, landscape ecology is a way to study the biological, physical, and human elements of a geographic area emphasizing (1) the spatial relationships among landscape elements or ecosystems; (2) the flows of energy, mineral nutrients, and species among the elements; and (3) the ecological dynamics of the landscape mosaic through time (Forman 1984). Instead of the traditional separation and focus of scientific disciplines, landscape ecology provides a synthesized, interdisciplinary approach to environmental research. However, that means looking at the Earth with a new perspective.

Imagine, for a minute, watching the Earth rise slowly over the surface of the moon. You see the blue and white fullness of the Earth emerging from behind the grey lunar landscape. For thousands of years we have gazed at the heavens and wondered about the Earth. Our earth-bound perspective limited our views. Those first pictures of the Earth from space quietly enlightened its wholeness. Suddenly we realized that, instead of seven seas, there is only one ocean. The boundary lines so familiar on the globe did not exist as we saw the entire Earth for the first time. Great rivers and mountain ranges were seen for the first time in their entirety. Astronaut Sultan Bin Salman al-Saud of Saudi Arabia described experiencing this new perspective over time: "The first day or so we all pointed to our countries. The third or fourth day we were pointing to our continents. By the

fifth day we were aware of only one Earth" (Kelly 1988).

The development of science and technology provided us with this new picture of the Earth. The individual sciences, such as geology, wildlife biology, landscape design, physics, sociology, and geography, have each provided us with a per-

spective of different Earth systems. Looking across the boundaries and dimensions of time and space, landscape ecology focuses on the relationships between patterns and processes. It provides an integrative method of examining the whole along with the sum of its parts.

HISTORY AND PHILOSOPHY OF LANDSCAPE ECOLOGY

In 1939, the German geographer Karl Troll found that aerial photography provided a "new perspective" of the land. He noted that the photographs allowed observation of an area in sequential time. He is credited with having introduced the geographic discipline of landscape ecology. The concept developed across northern Europe, primarily evolving out of the need to plan urban areas. It evolved as an integrative device for the planner, taking information from scientists and integrating the information so planners could make sound decisions. As a result, landscape ecologists in Europe looked primarily at human-defined units rather than natural landscapes or ecological communities (Golley 1990).

The United States approach to landscape ecology has evolved more recently to examine natural landscapes, looking at ecological communities and systems, as well as natural boundaries within the overall landscape. Traditionally, environmental land areas are divided into study units. Landscape ecology takes an entire heterogeneous landscape area and looks at the relationships between and among homogeneous units. Landscapes can be defined operationally as a series of contiguous ecosystems, or as homogeneous pieces of a heterogeneous whole—it all depends on scale. Scales of time and space should be defined and organized to meet the objectives of the landscape being examined.

PLACE, TIME, AND SPACE

For example, let's look at a well-known and highly visited landscape: Great Smoky Mountains National Park. Spatially, at a *micro-scale* level, we could identify a particular watershed in the park to examine. Broadening our examination to a *meso-scale* would take in all of the Great Smoky Mountains, while a *macro-scale* would look at the entire Blue Ridge Mountain Range. Finally, the *mega-scale* would include all of North America. Temporally, we could examine any one of these

spatial areas in terms of *seconds to hours, days to seasons, decades to centuries, or thousands of years to millions of years.*

Once the scale of time and space have been defined, landscape ecology uses an ecosystem approach to look at the *inputs* and *outputs* of elements in the landscape such as energy, water, nutrients, vegetation, wildlife, and economic factors. Elements that are not traditional commodities can then be quantified. Landscape ecology is also a way of

looking at the causes of *patterns* within a landscape, such as environmental gradients that create patchiness, disturbances that create patterns, and the natural succession of communities as they change through time. It also provides a method for assessing the *effects of those patterns* and, recognizing humans as the primary manipulators of landscapes, serves as a basis for making sound choices and decisions.

The goals of landscape ecology are to: (1) quantify the *significance* of the

effects of landscape patterns; (2) observe *changes through time* at all stages within the entire landscape; (3) characterize landscapes with detailed *mapping*; (4) characterize landscapes with *patchiness of mosaic ratios*; and (5) *identify the effects* of the landscape mosaic on the spread of disturbance, maintenance of viable population sizes, recovery rate after disturbance, and resource quality (Knight 1990).

APPLICATIONS OF LANDSCAPE ECOLOGY IN RESOURCE MANAGEMENT

With the new trend toward management of multiple ecosystems within regional areas, rather than just individual specific resources, resource managers and scientists need integrated information to do their jobs. Both must know the resource systems in detail and be prepared to communicate and cooperate with other local agencies, the scientific community, and the public. Managers are also being asked to update or initiate baseline inventory data, as well as maintain a monitoring plan with fewer human and financial resources. The landscape ecology approach provides a method for accomplishing all these things.

Landscape ecology links the resource basic inventory, geographic information systems, current research activities, and past studies in an identified landscape area to present an overall picture of the landscape in its regional setting. Landscape ecology recognizes disturbance regimes, such as fire, as persistent and important processes. Disturbances drive the interactive dynamics of landscapes and create component patches. Landscape ecology integrates inter-

disciplinary and holistic perspectives and approaches with the specific disciplines of scientific research. It also infuses the human social element into resource management issues. Effective management of local ecosystems requires attention to individual detail as well as the entire landscape context in which they are located. Landscape ecology takes the sum of the parts of a place, and through the perspective of time and space presents a whole.

In the preface to their book *Landscape Ecology*, Richard Forman and Michel Godron describe the unique role landscape ecology plays in our lives:

When we focus on the heterogeneity in a landscape, we sense how intertwined its ecological systems are. An action here and now produces an effect there and then. Since the system is interlocking, it is critical to understand the spatial relationships among the landscape elements; the flows of species, energy, and materials; and the ecological dynamics of the landscape mosaic. Thus, an understanding of the whole—landscape ecology with its practical tools for scholars, citizens, and decision makers—emerges.

Since the beginning of time, humans have studied the Earth and its processes. We've taken it apart, assigned theories of explanation, examined the pieces, dissected the parts, and given them scientific names. It is only recently that we

have begun to realize and recognize the interconnected unity of our planet. As John Muir said decades ago: "When we try to pick out anything by itself, we find it hitched to everything else in the Universe."

REFERENCES

- Allen, C.D. 1989. "Changes in the Landscape of the Jemez Mountains, New Mexico." Ph.D. Dissertation, University of California, Berkeley.
- Forman, R. 1984. "An Ecology of the Landscape." *BioScience*.
- Forman, R., and M. Godron. 1986. *Landscape Ecology*. John Wiley & Sons, New York.
- Golley, F. 1990. "Basic Concepts of Landscape Ecology: Landscape Analysis." Paper presented at the symposium "Ecology and Planning: The Landscape Dimension," University of California, Davis, October 1990.
- Kelly, K. 1988. *The Home Planet*. Addison-Wesley, New York.
- Knight, D. 1990. "Basic Concepts of Landscape Ecology: Function and Change." Paper presented at the symposium "Ecology and Planning: The Landscape Dimension," University of California, Davis, October 1990.
- National Aeronautics and Space Administration (NASA). 1988. *Earth System Science: A Closer View*. Report of the Earth Systems Sciences Committee, NASA Advisory Council. NASA, Washington, D.C.,
- Naveh, Z., and A. Lieberman. 1990. *Landscape Ecology: Theory and Application*. Springer-Verlag, New York.



A Response to

“The Global Change Research Program and the U.S. National Park Service: Six Essays”

Sarah G. Bishop

Partners in Parks

Henderson, Nevada

The U.S. National Park Service has a very important role to play in the Global Change Research Program (GCRP). Six authors in a recent issue of *The George Wright Forum* [Volume 7, Number 3, 1991] described various aspects of that role. Almost everything they said was right on target, but there is a bigger and more exciting opportunity for the USNPS to contribute to global change research, the hot scientific topic of the 1990s.

What the USNPS can uniquely offer the global change research community are baseline studies to answer the question, “change from what?” (S. Bishop 1989; W. Bishop 1989). The USNPS must join the

global change research community and give its full commitment to answering this question of critical national concern. In assuming this role the USNPS goes beyond its stated mission of serving only the needs of the parks.

The Committee on Earth and Environmental Sciences (CEES) [formerly the Committee on Earth Sciences, or CES], the coordinating committee for the GCRP, has not adequately addressed the question, “change from what?” (CES 1990a). To approach an answer, there must be units of land that are managed to maintain their natural state. There must be a diverse set of units with forests, deserts, swamps, etc. to be

examined. The units must be large enough to be observed and monitored from space. What must be prepared in these units is a scientific baseline—a snapshot of what is there on the ground today.

Arguably, the USNPS is the only land management agency that has the charter as well as the diversity of sites not being managed for extractive resources, to provide this snapshot. And the USNPS has a number of units that might be large enough to be baseline sites or the cores of such sites. There are some 70 units in the National Park System larger than 50,000 acres. The GCRP was begun in the mid-1980s by the National Science Foundation (NSF), National Aeronautics and Space Administration (NASA), and the National Oceanic and Atmospheric Administration (NOAA) (McCauley 1989). It has grown from three agencies talking with each other to 21 departments and agencies with an FY1991 budget of \$950 million to support studies, program development, major satellite systems—everything perceived to be necessary to manage a multifaceted research program.

Until 1991, the USNPS was not recognized by the CEES as an active player in the GCRP (CES 1989; 1990b). Plainly put, USNPS was not in line to receive any funds earmarked by the CEES for the GCRP. The only agency within the Department of the Interior to receive funding from the beginning was the U.S. Geological Survey. Its administrator, Dallas Peck, heads the CEES. In 1991, USNPS was written into the CEES budget at \$3.6 million—a very small pittance in comparison with the overall 1991 CEES budget (CEES 1991). USNPS is now on the GCRP playing field, but it has not assumed

its proper role yet. It is time for the USNPS to go to the CEES with plans to establish baseline studies in at least 50 parks. The CEES, Office of Management and Budget, and the Congress will readily support such an ambitious program (Bradley et al.), but only if the USNPS will boldly promote its important role in the GCRP.

That said, let me comment on what some of the authors said in "The Global Change Research Program and the U.S. National Park Service." Stephen Nodvin (1991) points out that a monitoring program without analysis is not worth much. Granted, but we really are not at the analysis stage yet. What is in parks? What is its current condition? Those are the fundamental questions for USNPS managers. Prepare the laboratory; gather baseline information. Once that is done, invite others to set up and conduct the necessary long-term monitoring.

Maury Nyquist (1991) is right on target with his observation that parks are the perfect natural laboratories for answering the question, "change from what?" His suggestion to tie the Inventory and Monitoring (I&M) program more closely to the USNPS's GCRP is equally on target. Here the USNPS can produce the unified database to support the needs of other research agencies. It can analyze some of the information it gathers to support its priority needs. Let others analyze the rest (and share their findings with the USNPS for their purposes).

Robert Stottlemeyer (1991) makes a persuasive case for the ecosystem approach to long term I&M. Such an approach should appear most desirable to the USNPS. Producing comprehensive inventories and funding them fully so that consistent monitor-

ing programs may be established should be the USNPS's highest GCRP priority.

Jill Baron (1991) asks the right questions; but, look at them in a different order. 1) How valuable are our resources to the rest of the world? The answer to this question points the direction of the agenda the USNPS should prepare as a response to question 2), What can we offer to the international global change research community? With a clear understanding of what the global change research community needs and will therefore "pay" the USNPS to produce, the USNPS can then focus its own funds on the answer to the third question, 3) What questions do we need to address regarding our resources *that no one else will address for us?* (emphasis hers).

David Parsons (1991) points out that USNPS now has some opportunities thrust upon it that could push it into the mainstream of science. Where we disagree is at his suggestion that the USNPS should develop the ability to answer all questions concerning parks, such as, for instance, the consequences of alternative climate scenarios on park ecosystems. Unless the USNPS is the only one interested in such matters, entice someone else to do that work by preparing and supporting an attractive laboratory for climatic research. I heartily agree with him that national parks have the opportunity to be an integral (I would say pivotal) part in carrying out baseline studies for the GCRP. He also encourages cooperative research programs with other land management agencies and with other scientists, which will be the payoff to the USNPS for its investment in the GCRP. In summary, the USNPS is not an agency chartered to do research. But it needs a

strong research component (National Parks and Conservation Association 1989). In the near term the USNPS can join the mainstream of one major branch of American science by accepting a critical role in the U.S. GCRP—a role for which the USNPS is uniquely qualified and prepared. That role is to manage the laboratories that can answer the question "change from what?"

In accepting that role and the concomitant challenge, the USNPS commits to a role well beyond its tradition. It is a commitment to manage the laboratories, know what is there, and make them available to others for their research. In so doing, the USNPS will acquire for its own purposes a baseline inventory of a majority of its larger units (and some of the smaller ones), a richer understanding of the processes within those units, a means of attracting significant research of other agencies, and a major funded research program of its own. A good budget target might be 50 units with an average budget of \$1 million per year per unit for inventory and monitoring, or \$50 million per year for the USNPS program. Such an investment is certainly justified for answering the question "change from what?" as it represents only 2% of a program that will soon reach over \$2 billion per year.

The USNPS will be richly rewarded for putting the GCRP needs ahead of its own. Not only will there be comprehensive inventory and monitoring programs established in a number of parks, the park-based research the agency has so little money to support and so great a need for will become highly attractive to agencies that do have funds for research. In short, by putting the needs of the GCRP ahead of its own,

the USNPS will not only enter the mainstream of science, it will advance its own research agenda manyfold as well.

REFERENCES

- Baron, J. 1991. Addressing global change—from a global perspective. *The George Wright Forum* 7(3):37-40.
- Bishop, S. G. 1989. Promoting partnerships: the new USNPS challenge. *Park Science* 9(5):11.
- Bishop, W. P. 1989. Global change and Park Service research. USNPS Desert Parks Workshop, Tucson, AZ.
- Bradley *et al.* Private communications with J. Bradley, R. Byerly, J. Fellows, D. Peck, S. Tilford, and others.
- CES [The Committee on Earth Sciences]. 1989. Our changing planet: A U.S. strategy for global change research. The U.S. Global Change Research Program. Office of Science and Technology Policy, Washington, D.C.
- _____. 1990a. Our changing planet: The FY 1991 research plan. The U.S. Global Change Research Program. Office of Science and Technology Policy, Washington, D.C.
- _____. 1990b. Our changing planet: The FY 1991 U.S. global change research program. The U.S. Global Change Research Program. Office of Science and Technology Policy, Washington, D.C.
- CEES [The Committee on Earth and Environmental Sciences] 1991. Our changing planet: The FY 1992 U.S. global change research program. The U.S. Global Change Research Program. Office of Science and Technology Policy, Washington, D.C.
- McCauley, Laura Lee, Ed. 1989. The U.S. global change program and the Committee on Earth Sciences: an interagency effort. *Earthquest* 3(1):20. Office for Interdisciplinary Earth Studies of the University Corporation for Atmospheric Research, Boulder, CO.
- National Parks and Conservation Association. 1989. *National parks: from vignettes to a global view*. A report from the Commission on Research and Resource Management Policy in the National Park System. National Parks and Conservation Association, Washington, D.C.
- Nodvin, S. C. 1991. A model for global change research. *The George Wright Forum* 7(3):25-28.
- Nyquist, M. 1991. Is the USNPS prepared for the global change program . . . GIS-wise or otherwise? *The George Wright Forum* 7(3):28-31.
- Parsons, D. J. 1991. Global change: an opportunity for the 1990's. *The George Wright Forum* 7(3):40-42.
- Stottlemeyer, R. 1991. An ecosystem approach to long-term inventory and modeling. *The George Wright Forum* 7(3):31-37.

USNPS Science:

The Five Most Important Issues

Dan Huff

*U.S. National Park Service
Rocky Mountain Regional Office
Denver, Colorado*

1. More important than anything else is our lack of an effective, competitive organization. The ad hoc approach to science seen in many U.S. parks and all ten of USNPS's Regions contributes to a provincial approach which spends much energy competing among its diverse components for severely limited resources rather than among all other USNPS functions (e.g., construction, cyclic maintenance, etc.) for its "fair share." In addition, the lack of a comprehensive approach to science organization and integration with park operations contributes to sub-standard programs

and lower grades for researchers and research administrators in some areas. In the past, the USNPS science program's lack of cohesiveness has guaranteed its poor visibility and resultant stagnation among other "upwardly mobile" USNPS programs.

In the past two to three years a more active role by the USNPS Washington Office has helped reverse this trend. However, this more active role in energizing new initiatives has further demonstrated the limitations of the USNPS organization for adapting to program en-

hancements. For example, the increased number of meetings to discuss these initiatives results in a wide range of representatives (e.g., from students to Regional Chief Scientists to Associate Regional Directors), all shouldering similar responsibilities for their respective Regions. Also, concurrent meetings on different initiatives will be poorly represented by some Regions, since the same person is often responsible for both.

The wide disparity among Regional science programs is destined to get wider as those with available expertise are better able to answer "calls for proposals" for new initiatives—which are often reviewed by a technical board consisting, primarily, of non-USNPS professionals. The "call for proposals" approach persists, even though this process often results in funding the *best documented* or *most convincing* park proposal rather than the best areas for the program from a strictly scientific basis. Since "capability" and "track record" are parameters often used in ranking proposals, the "have" parks continue to get the lion's share of resources and the "have nots" continue to be bridesmaids.

The independence of some park science programs, often the largest programs, precludes the direction of significant resources and expertise toward national and regional goals, not to mention the many needs of smaller, less fortunate parks. Independent park programs usually enjoy no technical oversight beyond the park organization. This situation leads to the evolution of unique standard operating procedures and perpetuation of sometimes questionable resource allocation and procurement policies. Support for the status quo leads to criticism of variant

organizations and ambitious reorganizations in other regions.

Control of regional science programs by the respective Regional Directors allows Servicewide science initiatives to be diverted toward other, "higher priority," projects on a Regional basis and impugns the Washington Office's efforts to balance programs among Regions.

I realize weaknesses can be found in any organization, but the USNPS has far too many of them to be overlooked as self-serving allegations. While there exists no perfect solution to the problem of organizational inadequacies, the best compromises, at least for the near term, are often indicated by careful analysis. An organization which

- ◆ Balances resources among Regions and individual parks and provides reasonable protection against diversion of resources to other, non-science uses;
- ◆ Provides for re-direction of resources (i.e., people and money) as science needs change;
- ◆ Addresses strategic, Regional, and Servicewide issues as well as individual park management needs and facilitates communications and program coordination across the hierarchy;
- ◆ Provides for duly earned career growth and security, as well as equitable pay scales for researchers and research administrators; and
- ◆ Is responsive to all levels of USNPS management

will, no doubt, be supported by most USNPS employees.

A significant reason for my having ranked organization over size of program is the fact that the current organization is incapable of responding effectively and efficiently to substantial program enhancements (i.e., program increases of over 100% and new programs running into millions of dollars). In such cases, individual Regions quickly move, in a variety of ways, to *obligate* all available funds rather than systematically analyze, plan, allocate, and implement new research. In fact, it is likely that all Regional science programs would not get the full amounts allocated to them through their Regional offices. Therefore, before large enhancements of the science program are implemented, the organizational problems should be remedied to ensure these enhancements are actually realized.

2. Size of the program (or "level of effort") is the second most important issue. Industry typically returns 10-15% of profits to research and development of new products or services. Most U.S. federal land-managing agencies spend 8-12% of their budgets on research. The USNPS plods along with less than 2% of its budget dedicated to research.

The size of the program has several obvious effects. First, and certainly of most significance, is the fact that the USNPS can address only the most pressing management-oriented concerns. Basic inventories, long-term effects research, and many important planning needs go wanting. Lack of scientific information means that more "best guess" or politically expedient decisions will be made by USNPS decision-makers—the potential for resource impairment notwithstanding. The relatively small size of the research program contributes to instability of the science program

and to poor morale of many USNPS scientists.

The USNPS science program would have to be immediately increased three- or fourfold just to address all current management questions and begin a systematic approach to accumulating a minimum amount of resource inventory information for *every* USNPS unit. Long-term monitoring programs to provide early warning of resource impairment will cost even more. Accumulating basic resource information into automated databases (e.g., Geographical Information Systems) to provide for efficient use and sharing of multivariate information will require much more money and people. However, if the mission of the USNPS is truly that of providing for public enjoyment without resource impairment, the task cannot be met with the current crises-oriented program.

3. Third is the lack of professional requirements for the "backbone" of the park management system—the RANGERS. In addition, there is also no professional requirement for park superintendents; in fact, most are selected from the ranger series. USNPS rangers have an outstanding institutional ethic—that is, one steeped in process—which is usually well ingrained by the time rangers are ready for a superintendency. Rangers prepare for this by holding a wide variety of positions, from those in maintenance to interpretation to law enforcement—and sometimes including a technician-level stint in resource management. However, there is no guarantee that this will produce superintendents with an overriding *professional* ethic toward preservation and management of park cultural or natural resources.

Thus, to many superintendents coming up through the ranks the traditional way, a forest is somewhat useless without a road or trail through it, a river is useless without a bridge, and a bear is fine as long as it doesn't attempt to "impair" public enjoyment of a national park. Failure to require at least a minimum level of training in ecology and natural resource management sciences results in many superintendents giving little support to science that is not directly aimed at answering their most pressing management questions in short order! Lacking respect for science and the scientific method, a superintendent will tend toward management decisions without the benefit of information derived from rigorous research. A formal education in an appropriate science would do a great deal for USNPS support for science, not to mention the advantages for implementing science recommendations.

4. USNPS "Mission Impossible" [i.e., the contradictory wording in the Organic Act which established the agency in 1916] is another cause for concern among the agency's scientists. The mission itself, i.e., promoting use of parks without impairing their resources, is virtually worthless in defining the appropriate *level* of

impact acceptable, as virtually any conceivable visitor use in certain ecosystems could integrally "impair" some natural resource. Without a more specific explanation of just how to determine impairment, individual and often arbitrary definitions will be adopted on a case-by-case basis.

The mission must be clarified to the extent that a scholarly determination of the impairment threshold may be effected. Only then will workable models be conceivable, models which could result in prediction and prevention of undesirable resource impacts.

5. Lack of a formal mandate for research in the USNPS works toward maintaining the current token science program. Other agencies enjoy legislation firmly entrenching the need to do research. If "Mission Impossible" is not rewritten, the USNPS needs legislation requiring the accumulation of inventory information, establishing a long-term monitoring program, clearly authorizing Cooperative Parks Studies units [i.e., park-oriented research centers affiliated with universities], and, perhaps, establishing a Service-wide Research Center to serve as the think tank for strategic research and a guiding force for long-term efforts.



National Parks in the Eastern United States

—The Mammoth Cave Experience—

Bruce J. Noble, Jr.

*USNPS Preservation Planning Branch
Washington, D.C.*

The serene natural setting which prevails in Kentucky's Mammoth Cave National Park today acts to disguise the human history of the park area. The pastoral landscape which typifies the above-ground portions of the park suggests that few humans have ever inhabited this section of the Earth. The U.S. National Park Service constructed most of the limited number of buildings which exist in the park today, and these remain, for the most part, discreetly hidden from public view. Primarily attracted by the underground wonders of the cave, visitors pausing to notice the above-ground world see ample evidence to imply that nature has retained uninterrupted supremacy in the park area since primeval times.

Closer inspection reveals a different story. The park includes three

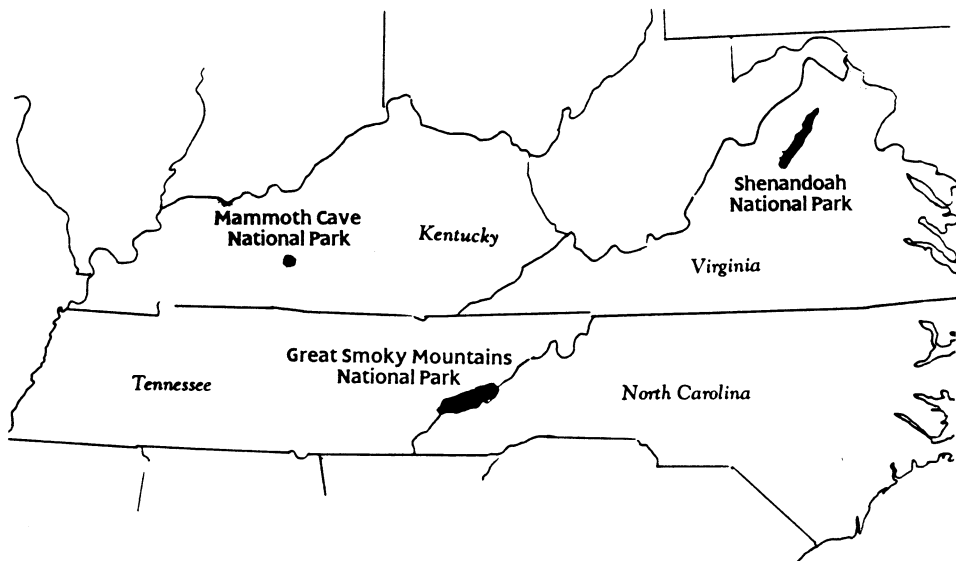
wooden church buildings and dozens of cemeteries as evidence of past human occupation which pre-dates the official establishment of the national park in 1941. Travelers who leave the main park roads might find farm building foundations, weathered fences, and an occasional small orchard as indicators that an agricultural population once inhabited the area. What led to the departure of this populace? Answering this question requires some investigation of the course of events which led to the founding of the national park.

As early as 1886, the Louisville & Nashville Railroad had begun promoting the concept of a national park as a means of increasing tourist travel on their rail line. However, serious efforts to support the idea of a national park in Kentucky did not begin until the 1920s. These efforts

began with the creation of the Southern Appalachian National Park Commission in 1925.

Established in 1916, the USNPS inherited fourteen national parks and 21 national monuments previously designated by Congress and placed under the jurisdiction of the Department of the Interior. All located in the West, these parks and monuments initially constituted the totality of the national park system. Because

most of America lived east of the Mississippi in the 1920s, the first director of the USNPS, Stephen Mather, decided it would be politically expedient for the Service to shed its image as a predominantly western organization. Thus, the Southern Appalachian National Park Commission was created in 1925 to explore the possibility of establishing national parks in the East.



Sketch locating the three national parks authorized by Congress in 1926 as recommended by the Southern Appalachian National Park Commission.

After visiting and investigating several potential park areas, in April 1926 the Commission recommended three places for national park status—Mammoth Cave, Great Smoky Mountains, and Shenandoah. The following month, Congress passed legislation authorizing the creation of all three national parks.

The Southern Appalachian National Park Commission left behind a twofold legacy which would profoundly influence the process for establishing each of the three parks.

First, each park would be created as a natural area. Second, each park would be established without the expenditure of federal funds. This meant that creative park-building methods were essential.

In the case of Mammoth Cave, the legislation authorizing the new park had designated a maximum area of 70,618 acres within which the park would have to be established. A minimum of 45,310 acres would have to be purchased and donated to the USNPS before official designation of

citizens would have to join together to lobby politicians, raise funds, and purchase land. In Kentucky, a newly formed organization known as the Mammoth Cave National Park Association agreed to coordinate this process.

At first, land acquisition went well. Judge Mills M. Logan, who eventually represented Kentucky in the United States Senate, owned 8,000 acres in the proposed park area which he donated to the Mammoth Cave National Park Association. The Louisville & Nashville Railroad agreed to donate an additional 3,000 acres. These initial successes quickly led to the realization that not everyone wanted to voluntarily sell. Many local residents appeared intent on fighting efforts to acquire their land.

In 1928, the Kentucky legislature adopted measures designed to circumvent local opposition to the establishment of Mammoth Cave National Park. The legislature created a new group called the Kentucky National Park Commission and granted them the power of eminent domain. Now land could be acquired through legal condemnation proceedings.

Although condemnation power provided a formidable tool, certain impediments remained. Perhaps the most significant obstacle proved to be the local court system. The local courts, and more importantly, local juries, tended to sympathize with their fellow citizens whose land had been condemned. This sympathy frequently meant that the courts would award sums of money to the land owners which greatly surpassed the market value of the land. This hardly proved to be a cost-effective way of acquiring land for the new national park.

Problems with the condemnation process and the perception that the federal government had not done enough to support Kentucky's quest for a national park both contributed to some amount of unrest. One spokesman said that Kentucky national park supporters had begun to feel that "the Mammoth Cave National Park is a step-child and isn't quite getting what they expected, in view of the fact that Mammoth Cave is one of the seven wonders of the world, [and] is known in every civilized country that never heard of the Great Smoky Mountains nor the Shenandoah." Perhaps responding to such concerns, in May 1934 federal legislation granted the Secretary of the Interior authority to accept monetary donations to use for land purchases. The legislation provided the USNPS with an opportunity to assume the lead role in the land acquisition process.

With the Depression now in full swing, land acquisition had evolved into a rather volatile process which pitted park supporters against impoverished rural families. Some of the more difficult cases involved farms within the proposed park area that were occupied by tenants. Even in situations where the land had been condemned, court proceedings held, and the land owner paid, tenants sometimes lacked the financial wherewithal to vacate their rented farms.

Recognizing that they would become a permanent presence in the Mammoth Cave area, and thus hoping to avoid undue irritation of the local citizenry at the outset, USNPS officials opted to remain behind the scenes and allow the Kentucky National Park Commission to deal directly with owners and tenants in the park area. In extreme cases

directly with owners and tenants in the park area. In extreme cases involving either steadfast owner opposition or financial inability to vacate, the Kentucky National Park Commission resorted to physical removal. Personal belongings would be removed from the property and placed in storage. Finally, Civilian Conservation Corps laborers would be brought in to tear down houses and barns before they could be reoccupied.

Not surprisingly, this process sometimes led to clashes. In one case, an overly aggressive employee of the Kentucky National Park Commission—who later became a USNPS superintendent—dumped a farmer's plow into a river. The employee ultimately paid a fine for trespassing. In another case, a USNPS ranger received a minor gun shot wound in the shoulder. Although the shooting evidently had no direct connection with land acquisition efforts, the incident provides further evidence of the elevated tension in the area.

Ultimately the hostility diminished and the land acquisition process began operating smoothly. Formal USNPS involvement in land acquisition meant that condemnation proceedings could be conducted in federal—rather than local—courts. The federal court system tended to award property owners a sum of money roughly commensurate with the appraised value of the land. The general efficiency of the federal court system accelerated land acquisition and in 1941 the necessary amount of land had been acquired to allow for formal establishment of the new national park. The onset of World War II delayed the completion of official park dedication ceremonies until September of 1946, twenty

years after enactment of the authorizing legislation.

With the exception of a few remaining cemeteries and churches, the present natural appearance of Mammoth Cave National Park would not suggest to contemporary visitors that a sizeable human population once occupied the park area. Although an exact estimate regarding the number of people who once lived within the park is not readily available, the acting superintendent of the park estimated in June of 1937 that 2,500 buildings had already been razed and another 2,500 awaited future demolition. While the USNPS certainly hoped to avoid the appearance of insensitivity when creating the park, present-day observers might want to characterize the destruction of 5,000 buildings as an insensitive act. However, we should resist the temptation to view the establishment of this park strictly in present-day terms.

Concerns about the negative consequences of urbanization and industrialization influenced the actions of the founders of Mammoth Cave National Park. In the early twentieth century, the proliferation of factory jobs attracted more and more citizens to America's urban areas. In response to this trend, the leaders of the park movement in Kentucky believed that the preservation of natural places like Mammoth Cave National Park would provide a sort of "escape-valve" for people in need of a respite from the oppression of city squalor.

In addition, the Dust Bowl had left the American public with vivid images of clouds of topsoil blowing across the Plains states. At least part of the Dust Bowl phenomenon resulted from the extension of agricultural pursuits into regions of the

tive measure, natural parks would serve as bastions of correct conservation practice where the virtues of conserving timber and preventing topsoil erosion could be publicly demonstrated. Given the perceived magnitude of such environmental threats during the 1930s, Mammoth Cave National Park advocates proceeded on the assumption that they were serving the larger interests of society by promoting the conversion of marginal Kentucky farmland into a natural preserve.

It is also important to bear in mind that the establishment of Mammoth Cave National Park falls within the context of initial trial efforts to develop national parks in the eastern United States. Earlier efforts to establish national parks in the West had encountered fewer complexities as Congress simply decided to set aside park lands within certain unsettled areas of the public domain. In some cases, these western parks were created with land that the nineteenth-century public perceived to have no economic value for farmers, ranchers, miners, or lumbermen. In the case of Mammoth Cave—and Shenandoah and Great Smoky Mountains as well—the USNPS first confronted the challenge of creating a park in an area with an existing white population. Lacking tested procedures to follow, the rules simply had to be made up and implemented with hopes for the best possible outcome.

Although contemporary perspectives should not distort our view of the past, the Mammoth Cave National Park story does contain some relevant lessons for today's USNPS.

The agency still struggles with its dual mandate to preserve both natural and cultural values in the national parks. Perhaps because of the growing urgency to safeguard the few natural areas that remain, the national park system frequently places greater emphasis on natural values. This can result in unintentional adoption of an institutional philosophy predicated on belief in the ascendancy of nature over culture.

The history behind the founding of Mammoth Cave National Park illustrates how the ambition to emphasize natural values superseded any concerted efforts to preserve the cultural values of the human population which once occupied the park. Particularly in parks established as "natural" areas, the desire to portray a natural appearance to the visiting public can sometimes overshadow recognition of the important roles played by prehistoric peoples, early settlers, and Native Americans who traditionally inhabited national park areas. While the scale still sometimes tips toward the natural side of the equation, the growing popular interest in cultural diversity suggests that park managers, policy-makers, and public interest groups must remain cognizant of the mission to conserve both natural and cultural values within our national parks.

—

This paper was first presented at the annual meeting of the Society for History in the federal Government, Washington, D.C., April 1991.



Partners in Stewardship ♦ Research and Management

THE 1992 GEORGE WRIGHT SOCIETY CONFERENCE

The Seventh Conference
on Research and Resource Management
in Cultural and Natural Parks and Equivalent Reserves

A First Look and Call for Papers

Dates: Sessions begin Monday evening, November 16, 1992, and end with a close-out luncheon on Friday, November 20.

Location: The Marina Hotel at St. Johns Place, 1515 Prudential Drive, Jacksonville, Florida 32207. The hotel is located on the St. Johns River in downtown Jacksonville, and is part of the city's "Riverwalk." You can reach the hotel by calling 904-396-5100; by fax, 904-396-7154.

Conference Theme: "Partners in Stewardship: Research and Management."

What's in Store: As currently envisioned, the week's activities will include the following:

Monday: The conference will begin with a significant keynote address by a well-known speaker in the field of heritage education.

Tuesday: Sessions will focus on "500 Years of Change—Human Manipulation of the Environment." Some suggested topics (not all-inclusive):

- ♦ *Wildlife issues in historical parks*
- ♦ *Planning for the 21st century*
- ♦ *Cultural resource issues in natural areas*
- ♦ *Landscapes*
- ♦ *Native American issues*

Wednesday: A morning plenary session on non-governmental partners in conservation, followed by a late-morning departure for field trips. Some possible destinations: Cumberland Island National Seashore, Okefenokee Swamp National Wildlife Refuge, Osceola National Forest, Fort Caroline National Memorial and other local sites in Jacksonville, Castillo de San Marcos National Monument and St. Augustine, Fort Matanzas National Monument, state historical sites and parks.

Thursday: Sessions on "Heritage Education: A Blueprint for Survival."

Friday: Plenary session on "The 21st Century: Getting Ahead of the Curve." There will be an optional field trip Friday afternoon.

Special Events: For Friday's plenary, we are working on putting together a panel discussion involving the directors of the major land-managing agencies. Tuesday, Wednesday, and Thursday mornings will begin with "Breakfast with the Director" of a land-managing agency—an informal question-and-answer session over the morning meal. A number of invited, refereed sessions will be held, resulting in selected publications. Tuesday evening will be a "Jax Fest" social event. On Thursday evening, the George Wright Society Awards Banquet will feature an address in the field of conservation. Friday's close-out luncheon will also be highlighted by a keynote speaker.

Papers: The 1992 conference will have fewer concurrent sessions than in years past. We are doing this to streamline events and minimize the number of times conferees are forced to choose between two sessions of interest. This means there will be fewer papers presented than at past conferences. Proposed paper titles and abstracts are due to the Society's office by February 15, 1992 (see below). The Conference Committee will choose papers to be presented from among the abstracts. This will be done and authors notified by April 15; authors of papers not chosen will be invited to present posters instead. The Society is planning on publishing a volume of a selected number of papers from the conference; more information on this will be available later.

Poster Sessions: Posters will receive special attention at the 1992 conference. There will be two evening opportunities for presenters to meet with conferees and discuss their work. Each poster session will have presentations arranged by category.

Abstracts: Abstracts for both papers and posters must be no longer than 150 words. Shorter is better; those longer will be edited. The abstract should clearly explain what the paper or poster is about and state the conclusions. Format is optional, but the *abstracts must contain the name, affiliation, full mailing address, and phone number of each author or presenter* (not counted in the 150 words). A list of participants, along with the paper and poster abstracts, will be published in the conference program.

How and When to Submit: *To receive consideration for inclusion in the conference, abstracts for both papers and posters must be faxed or postmarked by February 15, 1992. We strongly urge authors to submit abstracts on computer disk in ASCII format (no high-density disks, please)—hard copy must accompany. Abstracts, paper and poster submissions, and all other correspondence related to the conference should be sent to: The George Wright Society, P.O. Box 65, Hancock, MI 49930 USA. Telephone: (906) 487-9722; fax (906) 487-9405.*

Registration, Hotel Reservations, Etc.: Members and those on the Forum mailing list will soon receive a conference brochure, which will include details on registration fees, field trips, how to make reservations, etc., and a call for papers.

New Membership Brochure Out

For the first time, the Society has produced a full-color membership brochure. It will be a useful tool for introducing people to the Society's aims. We are planning a membership drive for this fall. As part of this, all current members will receive two or three brochures along with a request to give them to friends and colleagues. Word of mouth is often the best advertising!

By the way—although we omitted the recycled logo from the brochure, it is printed on glossy recycled stock, albeit stock composed of only 20% post-consumer content. Our policy is to use recycled paper for as many GWS publications as possible.

1992 Forum Issues to Look at Conservation in the Pacific Region; Power Generation & Protected Areas

As you have noticed, the last several issues of the Forum have had themes. This is a practice which, though not invariable, we would like to continue for the majority of issues to come. Our plan is to try to have a group of theme papers supplemented by other articles in most issues.

To do this at all effectively, we need to enlist the help of people willing to serve as guest editors. We would be happy to hear from people who want to suggest themes for future issues and are willing to round up papers to make them happen. Please contact Bob Linn or Dave Harmon at the Society's Hancock office for more information.

So far we have two themes lined up for 1992:

Conservation and Protected Areas in the Pacific. A fascinating variety of conservation issues faces this vast oceanic region. Species invasions threaten endemic island plants and animals. Native people are

demanding a role in running protected areas—and offer alternative models for doing so. Unique natural events, such as the El Niño phenomenon, pose special challenges for protected areas. We plan to devote one, and possibly a second, issue to this topic. Papers are welcome; the deadline is February 15, 1992. For more information, please call the Guest Editors: Kheryn Klubnikin, USNPS Washington office, 202-208-5126, FTS 268-7120, fax 202-208-4260; or Lloyd Loope, Haleakala National Park, Hawaii, 808-572-1983; fax 808-572-1304.

Hydropower Generation and its Effect on Protected Areas. In the USA, many dams affecting parks and reserves—or which form an integral part of them—are up for relicensing. This makes it a good time to consider the effect dam-building has had on protected areas. The famous struggle over the Hetch Hetchy reservoir in Yosemite National Park gives us one end of the spectrum, but on the other hand many

recreation areas are built around reservoirs which form part of a hydropower system. Such systems can affect huge areas, as Hydro Québec's plans for the St. James and Hudson bays attest. We would like input from all sides on this issue. The deadline for submissions is March 15, 1992. For more information, call the Guest Editor: Stephanie Toothman, USNPS Pacific Northwest Regional Office (Seattle), 206-553-0791; fax 206-553-4896.

We are also considering theme issues devoted to *Economics and Protected Area Conservation* (for more information on this, contact Kheryn Klubnikin at the numbers above), *Data Gathering for Parks and Reserves*; *Disaster and Crisis Management*; and the differing views of *Alien Species*. If you'd like to contribute papers or volunteer to superintend such issues, let us know.

Random Jottings. . . .

The *Global Biodiversity Strategy* is due to be released at the Fourth World Congress on National Parks and Protected Areas, to be held in Caracas this February. The Society was among the more than 500 individuals and groups who commented on the draft. Also in its final stages is the compendium *Global Biodiversity 1992: The Status of the Earth's Living Resources*. This book will detail the status of biodiversity and the trends affecting it.

The *GWS Strategic Plan* is rounding into final form. The Plan will give direction to the Society's activities in the years to come. It incorporates the ideas that emerged from the El Paso conference and adds others as well. GWS Vice President Gary Davis and Board Member

Kheryn Klubnikin are co-chairing our Long-Range Goals Committee, which also includes Board member Steve Veirs and President Melody Webb. We will present the Strategic Plan to the membership in a future *Forum*.

Occasionally, members ask for a copy of *the Society's By-Laws*. As a registered corporation, the Society's affairs are governed by the by-laws, a legal document that must adhere to the statutes of Delaware, the state in which we are incorporated. Gary Davis, Steve Veirs, and Executive Director Bob Linn have reworked the by-laws with the advice of others on the Board and legal counsel. We plan to publish the revised by-laws in full in the next *Forum* so members can have a ready reference copy.

About the GWS . . .

The George Wright Society was founded in 1980 to serve as a professional association for people who work in protected areas and on public lands. Unlike other organizations, the GWS is not limited to a single discipline or one type of protected area. Our integrative approach cuts across academic fields, agency jurisdictions, and political boundaries.

The GWS organizes and co-sponsors the foremost U.S. conference on research and management of protected areas, held every two years. We offer the Forum, a quarterly publication, as a venue for discussion of timely issues related to protected areas, including think-pieces that have a hard time finding a home in subject-oriented, peer-reviewed journals. The GWS also helps sponsor outside symposia and takes part in international initiatives, such as the Global Biodiversity Conservation Strategy.

Who was George Wright?

George Melendez Wright (1904-1936) was one of the first protected area professionals to argue for a holistic approach to solving research and management problems. In 1929 he founded (and funded out of his own pocket) the Wildlife Division of the U.S. National Park Service—the precursor to today's science and resource management programs in the agency. Although just a young man, he quickly became associated with the conservation luminaries of the day and, along with them, influenced planning for public parks and recreation areas nationwide. Even then, Wright realized that protected areas cannot be managed as if they are untouched by events outside their boundaries.

Please Join Us!

Following the spirit of George Wright, members of the GWS come from all kinds of professional backgrounds. Our ranks include terrestrial and marine scientists, historians, archaeologists, sociologists, geographers, natural and cultural resource managers, planners, data analysts, and more. Some work in agencies, some for private groups, some in academia. And some are simply supporters of better research and management in protected areas.

Won't you help us as we work toward this goal? Membership for individuals is US\$25 per calendar year, and includes subscriptions to both the Forum and the GWS newsletter, discounts on GWS publications, and reduced registration fees for the GWS conference. *New* members who join between 1 October and 31 December are enrolled for the balance of the year and all of the next. A sign-up form is on the next page. Other membership options are available; please call or write to get a brochure with full details.

GWS Membership

You may use this form to sign up for membership or to renew.

Or, pass it along to a colleague or friend who might be interested in the GWS. Annual membership dues are US\$25.

Please send a check or money order to the address below.

Thank you for supporting the George Wright Society!

Name

Affiliation

Address

Zip/Postal Code

Phone
(work)

Phone
(home)

Fax

Occupation & expertise (optional)

**The George Wright Society
P.O. Box 65**

Hancock, Michigan 49930 U.S.A.

☎ (906) 487-9722

•

Fax (906) 487-9405

Submitting Materials to the Forum

The editorial board welcomes articles that bear importantly on the objectives of the Society—promoting the application of knowledge, understanding, and wisdom to policy making, planning, management, and interpretation of the resources of protected areas and public lands around the world. The Forum is now distributed internationally; submissions should minimize provincialism, avoid academic and agency jargon, and aim to broaden international aspects and application. We actively seek manuscripts which represent a variety of protected area perspectives, and welcome submissions from authors working outside of the U.S.A.

Language of Submission Current readership is primarily English-speaking, but submissions in other languages will be considered; in such cases an English summary should be prepared.

Form of Submission We strongly urge authors to submit articles on computer disk. This eliminates troublesome re-keying. Almost any Apple Macintosh disk can be read in its original format (please indicate the version of the software). Otherwise, send an ASCII-file disk; both 3.5" and 5.25" double-density formats are acceptable. (No high-density disks, please.) A double-spaced manuscript must accompany all submissions in case there are compatibility problems.

Citations The Forum contains articles in varied fields, e.g., history, geology, archeology, botany, zoology, management, etc. Please follow your field's conventions for citations and bibliographies. Normally these will be retained in our pages.

Editorial Matters Generally, manuscripts are edited only for clarity, grammar, and so on. We contact authors before publishing if major revisions to content are needed. The Forum is copyrighted by the Society; permission for additional publication is freely given as long as the article is attributed as having been first published here.

Illustrations Submit line drawings, charts, and graphs as nearly "camera-ready" as possible. If submitted in a size that exceeds the Forum's page dimensions, please make sure the reduction will still be legible. The preferable form for photographs is black-and-white (matte or glossy) prints. Medium contrast makes for better reproduction. Color prints and slides may not reproduce as well, but are acceptable. We particularly welcome good vertical black-and-whites photos for use on the cover.. Half-tones from newspapers and magazines should be avoided if at all possible. Please secure copyright permissions as needed.

Correspondence Send all correspondence and submissions to:

THE GEORGE WRIGHT SOCIETY • P. O. BOX 65

HANCOCK, MI 49930-0065 • USA

☎ (906) 487-9722. Fax (24 hours a day): (906) 487-9405.