

THE JOURNAL OF 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

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THE GEORGE WRIGHT FORUM

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Society News, Notes & Mail

Letter to the Editor: Mountain Connections Slighted

To the Editor:

The otherwise excellent article by Pisanty-Baruch et al. ("Reporting on North America: Continental Connections," Vol. 16, no. 2) omitted a very important set of connection initiatives-those involving mountain ranges. As Vice-Chair for Mountains in the World Commission on Protected Areas for IUCN, my mountain hackles rose up. How could you, folks? In addition to birds and butterflies in migration flyway connections, and the marine pathways used by pelagic fishes and marine mammals, surely the great mountain spines of the western USA, Canada, and Mexico are continental connections that facilitate the flow of genes and species through wild and semi-wild mountain lands. These cross borders, and have suggested corridor initiatives such as Yellowstone to Yukon, Sky Islands of the Southwest and links to the Sierra Nevada Oriental, the greater northern Cascades, and so forth-transborder connections, which even permit movement of large carnivores, such as wolf and mountain lion, and hosts of other terrestrial animals. And let us not forget plants. As global warming occurs, these terrestrial pathways are an essential part of North America's continental connections.

> Lawrence S. Hamilton Island and Highlands Nature Consultancy, Charlotte, Vermont

The Canon National Parks Science Scholars Program: New Round of Scholarships

The Canon National Parks Science Scholars Program will award scholarships to eight doctoral students in 2000. Each student selected will receive \$25,000 per year for up to three years to conduct dissertation research in the national parks. In addition, four Honorable Mentions will be awarded a one-time scholarship of \$2,000. The competition will focus on four research topics within the biological, physical, social, and cultural sciences. The research topics are of critical importance to the management of the National Park System and are selected by the National Park Service. Students applying for 2000 scholarships must submit dissertation proposals that address these topics. For an application and guidelines, contact Dr. Gary Machlis, Program Coordinator, Canon National Parks Science Scholars Program, Natural Resource Stewardship and Science, National Park Service, 1849 C Street NW (MIB 3127), Washington, DC 20240; email gmachlis@uidaho.edu, or visit www.nps.gov/socialscience/waso/acts.htm. Applications are due 1 June 2000. Winners will be announced shortly after 7 August 2000. The Canon National Parks Science Scholars Program is underwritten by Canon U.S.A., Inc. Additional partners are the National Park Service, the National Park Foundation (the official non-profit partner of the National Park Service), and the American Association for the Advancement of Science.

Krumenaker, Soullière Returned to Board

Incumbents Bob Krumenaker and Laura Soullière will each serve a second three-year term on the Society's Board of Directors after they went unchallenged in this year's round of elections. No nominations were received in response to the call published last spring in the FORUM. Because of this, the Board decided that it would be a waste of the Society's (and our members') time and money to go through the motions of sending out ballots simply to confirm a foregone conclusion. Therefore the Board decided to cancel the balloting and return Bob and Laura for a second term, after consulting the By-Laws and finding nothing to prohibit this course of action. (However, for the future the Board feels it would be best to formalize this procedure within the By-Laws—see next item.) Bob is deputy associate regional director in the NPS office in Philadelphia; Laura is superintendent of Cane River Creole National Historical Park in Louisiana. Their second term runs from 1 January 2000 to 31 December 2002.

Two Proposed Changes to Society By-Laws

At the 1999 Board of Directors meeting, held in Halifax in October, the Board decided to propose to the membership two changes in the By-Laws. The first would allow (though not require) the Board to expand from the current set number of nine (six elected and three appointed) to as many as twelve (with a majority elected and no more than five appointed). The intent of this change is to give the Board latitude to introduce a broader range of expertise and experience to its ranks. The second change formalizes a procedure whereby the Board may cancel the annual elections in cases where incumbent elected directors face no opposition (for further explanation, see the item above). We ask all GWS members to read the following proposed changes carefully:

FIRST PROPOSED CHANGE: Revision of Article X—Board of Directors, Section 1, Number, Election and Term of Office, paragraph 1a

CURRENT WORDING:

(a) The business of this organization shall be managed by a Board of Directors consisting of nine (9) directors, a majority of whom must be

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elected, and as many as three (3) of whom may be appointed. The terms of office of the directors shall be for three (3) years. These terms shall be staggered in such manner as will allow three (3) directors to be elected or appointed each year.

PROPOSED NEW WORDING:

(a) The business of this organization shall be managed by a Board of Directors consisting of no fewer than nine (9) and no more than twelve (12) directors, a majority of whom must be elected, and as many as five (5) of whom may be appointed. The terms of office of the directors shall be for three (3) years. These terms shall be staggered in such manner as will allow no fewer than three (3) and no more than four (4) directors to be elected or appointed each year.

SECOND PROPOSED CHANGE: Addition to Article X—Board of Directors, Section 3, Nomination and Elections

PROPOSED NEW SECTION 3 (f)

(f) In instances where one or more incumbent Directors are running for re-election, and no additional nominations of candidates to oppose the incumbents are received by the deadline as detailed in Section 3 (a) of this Article, the Board may, at its discretion, issue a finding that the intent of the Membership is for the incumbents to be re-elected. Based on this finding, the Board may then, at its discretion, cancel the election procedure detailed in Section 3 (b) of this Article and declare the incumbents to have been re-elected. This declaration shall have the same effect as if the election procedure detailed in Sections 3 (a-b) of this Article had been fully carried through. The Board shall publish and send to the Membership both its finding and its declaration in accordance with Section 3 (e) of this Article.

The Board will hold a special meeting to decide whether to enact these changes after considering comments from the membership, which we welcome and encourage. Please send them to Dave Harmon at the GWS office: by mail, P.O. Box 65, Hancock, MI 49930-0065 USA; by phone, 1-906-487-9722; by fax, 1-906-487-9405; or by e-mail, gws@mail.portup.com. *The deadline for receipt of comments is March 15, 2000.*

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Box 65: Commentary from the GWS Office and Our Members

The USNPS Natural Resource Challenge: It's Not About Money, It's About Priorities

he USNPS *Natural Resource Challenge*, announced by Director Bob Stanton in August 1999, is now off and running. We have high hopes of major budget increases to enhance natural resource management within the Service, perhaps as high as \$100 million over five years. We can wait for the new money and wait for top-down directives, but now is the opportunity to transform the way we manage the national parks and the way the public views its responsibility to them. It's not Washington's responsibility—it's ours.

That responsibility is twofold – stewardship and education.

There's no doubt that increased funding will allow us to add more natural resource specialists, acquire more data sets, contract for more research. But no amount of additional funding can make a manager *use* scientific information; that's something we need to believe in. Fortunately, there are many good examples of parks that have found creative ways to build scientifically sound natural resource management programs without huge base increases. Hats off to superintendents Alan O'Neill of Lake Mead, Jack Linahan of Buffalo River, and Roy Weaver of Bandelier, who made science-based resource management their priorities because they needed to have the facts on their side when they went out into the public arena to defend their parks from new threats. The best park managers of the next generation will know what scientific questions to ask before their parks are on the brink of another threat – or, more likely, will have a trusted chief of resource management at their decision table who they turn to regularly and who is involved in all facets of park management.

The Organic Act requires the USNPS to *conserve … unimpaired for the enjoyment of future genera-tions.* The Congress and the federal courts have consistently told us that our first priority must always be to conserve, and to provide for visitors within that context. The *Challenge* is about making the commitment to resource preservation *so that* parks will always have unimpaired resources for future visitors to enjoy. That commitment to preservation means that sometimes we'll need to prepare our publics for hard choices,

and that we'll have to face political pressure which wants more development or accommodation at the expense of a wetland, a few old growth trees, more fragmented habitat, or more air or water pollution. We'll have to be prepared to work with neighbors and partners to develop acceptable alternatives and come to the negotiating table with scientific information that backs up our position.

The American public loves its national park system. We have not done, however, a very good job of educating that same public about what it takes to keep park ecosystems functioning in an increasingly fragmented landscape. Rather than spell out forecasts of gloom and doom, parks can build understanding and support by inviting the public to participate actively in preservation. Resource seminar series at Acadia and Shenandoah, for example, have built committed park supporters, many of them neighbors, who now understand that parks are complex, functioning, and vulnerable biological systems providing beautiful scenery as well. The All Taxa Biological Inventory project at Great Smoky Mountains has generated tremendous excitement and support because it is a bold idea that welcomes participation, challenges people's assumptions about their park, and says, in effect, "together we can learn and by learning we can protect the place we love." The national parks are the best places for Americans to learn about our natural heritage and the way nature functions, and yes, wonderful places where people from all parts of the world community enjoy themselves on vacation.

For the *Challenge* to be successful, we have to share our enthusiasm about park natural resources with the public, our partners, and government officials at all levels. We need to tell our stories widely, and invite our political delegations and the media into our parks so they better understand our issues. We need to talk in every park about the Service and the System, not just about our park, and share stories of where having access to professional resource expertise has made a positive difference. We need to create learning centers with our partners as places where scientists, educators, park staff, and the public of all ages exchange information and ideas. While the *Challenge* may specifically be about natural resources, in reality it encourages an environment where we emphasize resource stewardship regardless of discipline. The first steps have already begun on a parallel program for cultural resource stewardship. In fact, our commitment to natural and cultural resource inventory, monitoring, and the use of scientific/scholarly information to support management decisions is *required* by the 1998 Thomas Bill. It's also the only way to protect parks in the future and ultimately it is the public's responsibility to protect public parks.

The *Challenge* strongly supports park-based resource protection and interpretation, not just resource

management programs. It encourages an integrated vision of parks that collectively make up the fabric of America's natural and cultural heritage. We can and must consider the resources first in each and every decision we make as park managers. That doesn't require any more money or staff than we have now. Ironically, however, if we make that commitment and demonstrate its wisdom through success in protecting parks and building park supporters, we will be that much more likely to see reliable, recurring base increases proposed in the *Natural Resource Challenge*. How's that for incentive?

Ed. note: For more on the Thomas Bill, refer to David Harmon's article "The New Research Mandate for America's National Park System" in Vol. 16, No. 1.

Karen P. Wade is regional director of the U.S. National Park Service Intermountain Region. Previously she was superintendent of Great Smoky Mountains National Park.

Reminder: this column is open to all GWS members. We welcome lively, provocative, informed opinion on anything in the world of parks and protected areas. The submission guidelines are the same as for other GEORGE WRIGHT FORUM articles—please refer to the inside back cover of any issue. The views in "Box 65" are those of the author(s) and do not necessarily reflect the official position of The George Wright Society.

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ARCHAEOLOGY AND THE NATIONAL PARK IDEA: CHALLENGES FOR MANAGEMENT

AND INTERPRETATION

Guest Editor: John H. Jameson, Jr.

John H. Jameson, Jr.

Introduction

What This Theme Issue Is About

• n January 1999, I organized a symposium during the fourth World Archaeology Congress (WAC-4) meetings in Cape Town, South Africa. The title of the symposium was "Archaeology and the National Park L Idea: Challenges for Management and Interpretation." During this international session, we examined the unique challenges and problems of managing and interpreting archaeological resources in national parks and similar protected areas. Eight presentations from four countries examined the relevance and effectiveness of differing strategies for management and public presentation as well as the primary motivations for management and public interpretation strategies (e.g., compliance with laws and regulations, preservation, tourism, politics, etc.). According to feedback received during and after the session, the symposium was useful for the South African members of the audience in recognizing the effectiveness of a variety of management approaches and in not "reinventing the wheel." This special issue of THE GEORGE WRIGHT FORUM includes several papers that were delivered at the symposium (Jameson, Mulvaney, Powell, Fowler and Harte, and Blockley) plus four contributed papers (Church, Gojak, Mytum, and Magne).

While the focus is on national parks, the authors also discuss and give examples of other protection designations where archaeology plays a key role in understanding the importance of places and episodes in the human experience. What is significant or worthy of protection and public concern can be defined in a myriad of ways according to social, political, cultural, geographical, and empirical criteria. Some are formal designations, such as in defining and laying out the boundaries of a national monument; others are less absolute, such as in the identification of the "Dreaming Places" among the indigenous peoples of Australia

(Mulvaney). We hope that these discussions provide relevant and useful comparative information in terms of what has worked (and what has not) in the physical protection of sites and in programs to promote public interpretation and appreciation—the *raison d'être* for conservation efforts around the world.

Setting of the WAC-4 Symposium

That WAC-4 met in Cape Town is particularly significant. The congress was formed in 1986 as a consequence of the international rift in the discipline that followed a worldwide boycott of South Africa during the latter years of apartheid. In South Africa today, as in many parts of the world, attention to "new ethnicities" at the turn of the millennium is resulting in a renewed discovery of archaeology as a source of information on a wide variety of national and cultural heritage issues (SAAS 1998).

In archaeological circles, South Africa is best known for the fossil man discoveries of the Leakeys and others in the Transvaal region. Much hoopla was made of the discovery in 1997 of a trail of fossilized footprints left more than 100,000 years ago by an anatomically modern human on the shore of a South African lagoon. South African archaeology has indeed made major contributions to the understanding of Early Man and African prehistory. Unfortunately, in South Africa, as in many other places of the world, archaeological knowledge has sometimes been used for political purposes. Because of the years of limited academic freedom under apartheid, any link to the "old establishment" archaeology as a discipline is seen by many in the country as a tool of racism and exclusiveness. This has resulted in a limited popular base for archaeology (SAAS 1998).

Although special conservation areas have been set aside in South Africa since the 1890s, serious problems have always existed in carrying out effective management. These problems are exacerbated today with the turnover of politics and government. However, impressive efforts are now being made in South Africa to challenge and overcome persisting stereotypes of the country's past; archaeologists and archaeology educators are working hard to more effectively engage the public. These efforts are presenting archaeology as something more than just a sterile and academic pursuit. More and more in contemporary South Africa, archaeology is seen as a tool for discovering the unwritten heritage of the country from the earliest hominids to the material traces of the recent past (SAAS 1998). Our "hats are off" to our South African colleagues who bravely embrace the difficult issues of park management in the new and rapidly evolving politi-

cal and socioeconomic climate of their country.

The Nature of National Protected Area Systems Worldwide

In many countries at the national level, a variety of designations is used for resource conservation. Inevitably, the same designation may mean different things in different countries, and different designations in different countries may be used to describe the same category of protected area. Because of this, an internationally recognized system of categories, defined by management objectives rather than depending on titles, is in use (IUCN 1994). This category system was devised by IUCN-The World Conservation Union—a union of governments, government agencies, and nongovernmental organizations working at the field and policy levels for worldwide conservation-through its World Commission on Protected Areas (WCPA). The WCPA works "to promote the establishment and effective management of a worldwide, representative network of terrestrial and marine protected areas as an integral contribution to the IUCN mission." In performing this mission, WCPA strives to establish itself as "the world's recognised source of guidance, support and expertise on protected areas" (WCPA 1996). The category system is intended to operate in the same way in all countries in order to facilitate the collection and handling of comparable data and to improve international communications. IUCN uses the categories to update its authoritative *United Nations List of National Parks and Protected Areas,* which is revised about every three years. There are about 9,900 protected areas worldwide (WCMC 1999).

Definition of a Protected Area

IUCN's definition of a protected area is: "An area of land and/or sea especially dedicated to the protection and maintenance of biological diversity, and of natural and associated cultural resources, and managed through legal or other effective means." IUCN defines nine purposes for protected area management:

- Scientific research;
- Wilderness protection;
- Preservation of species and genetic diversity;
- Maintenance of environmental services;
- Protection of specific natural and cultural features;
- Tourism and recreation;
- Education;
- Sustainable use of resources from natural ecosystems; and
- Maintenance of cultural and traditional attributes.

IUCN defines a "national park" as a protected area managed mainly for ecosystem protection and recreation,

including maintenance of ecological integrity, exclusion of resource exploitation, and preservation of spiritual, scientific, educational, recreational values (IUCN 1994).

Problems in International Comparisons of Protected area Designations

One of the problems in making international comparisons is the widely varying types of protected area designations. For example, in the USA, several categories exist for units of the National Park System that contain archaeological sites: national park, national monument, national historic site, etc. Meaningful international or cross-cultural comparisons are difficult without detailed understanding of the cultural and sociopolitical atmosphere surrounding a particular resource or issue. The location of a resource within the boundaries of a protected area does not remove it from both artificial and natural forces that might degrade it. We can hope that "important" sites, however they are defined culturally or politically, are experiencing less degradation and enhanced public appreciation by their inclusion in national parks and other protected area designations.

Archaeology and Conservation

Archaeology, as a sub-field of anthropology, is the study and reconstruction of past human lifeways as reflected in material culture and artifacts. In many instances, archaeological sites represent the sole source of new information on a particular cultural group or time period. Professional archeologists use scientific methods to identify and analyze the residue of human behavior. Data collected by archaeologists are used to supplement, modify, and correct humanity's written record. Historical archaeologists blend existing historical accounts with archaeologically derived information to produce new interpretations of history.

Archaeologists study material remains within the cultural system that produced them. A common misperception of archaeological sites is that they are "invisible" and therefore should be treated as separate entities from the aboveground or "built" environment. While we often must, in fact, look under the present-day ground surface in order to study and evaluate archeological remains, archaeological materials can be both below and above the ground surface as part of the cultural landscape.

Archaeological sites are nonrenewable: once they are disturbed or destroyed they cannot be brought back. Even the scientific methods of archaeology, such as systematic excavation, are destructive in the sense that they remove archaeological materials from their original physical context. In recent years, a conservation ethic has developed where archaeologists usually sample

only a portion of a site, leaving the remainder for future archaeologists armed with more advanced methods and procedures that can yield more accurate interpretations.

Archaeology Conservation and Interpretation in the U.S. National Park Service

The U.S. National Park System contains a great variety of archaeological sites from early prehistoric times (+10,000 BC) to nineteenthcentury battlefields and twentiethcentury settlements. Of the approximately 380 units of the System, nearly all contain archaeological resources. U.S. National Park Service (NPS) programs provide national leadership and coordination for the protection, preservation, and interpretation of America's archaeological resources inside the National Park System and beyond. Programs seek to broaden public understanding, protect and preserve sites and artifacts in place, and strengthen community relations while recognizing cultural diversity (NPS 1999). Knowledge gained from archaeological research in the parks is used to evaluate and protect threatened sites and to broaden knowledge as background to enhanced public interpretation programs and exhibits.

While the archaeological sites protected by NPS may number in the hundreds of thousands, some are internationally known for their prehistoric importance. For example, Mesa Verde National Park, established in 1906, contains elaborate stone villages or "cliff dwellings" in the sheltered alcoves of a steep canyon in Colorado. The culture represented at Mesa Verde reflects more than 700 years of history (approximately AD 600 through 1300). Ocmulgee National Monument in Georgia is an example of a park unit that owes its existence to work done by the Works Progress Administration in the 1930s. One of the primary attractions at Ocmulgee is the reconstructed earthlodge dating to about AD 1100.

Ninety Six National Historic Site and Fort Vancouver National Historic Site are examples of parks that rely heavily on archaeology to supply details in the interpretation of significant events and periods of U.S. history. Ninety Six contains the remains of an eighteenth-century frontier outpost, including a reconstructed stockade fort (Figure 1). From 1825 to 1849, Fort Vancouver in Washington state was the western headquarters of the Hudson's Bay Company's fur trading operations and the center of political, cultural, commercial, and manufacturing activities in the Pacific Northwest. A major program of reconstructions has followed comprehensive archaeological work.

Since the 1930s, NPS architectural historians, archaeologists, and interpreters have debated the validity and appropriateness of reconstructions, whether on-site or off-site. Although they can be very useful tools



Figure 1. Reconstructed Stockade Fort at Ninety Six National Historic Site, South Carolina.

in public interpretation, reconstructions have long been a source of controversy in NPS and have nearly always been allowed only when substantial archaeological and architectural details are known (Jameson and Hunt 1999).

The practice of archaeology, as well as archaeologically derived information and objects, can inspire a wide variety of artist's conceptions ranging from straightforward computer-generated reconstructions and traditional artists' conceptions to other art forms such as poetry and opera (Finn 1999; Ehrenhard and Bullard 1999). Although some level of conjecture will always be present in these art forms, they are often no less conjectural than technical interpretations and have the benefit of providing visual and conceptual imagery that can communicate contexts and settings in a compelling way. We can look at archaeology's connections to art and music as a different way of valuing and defining the resource and making it more meaningful to the public. The National Park Service has used artistic renderings of archaeological findings, such as original oil paintings and other forms of interpretive art, as public interpretation tools. Such art works are used in conjunction with interpretive wayside exhibits, public

Figure 2. Interpretive rendering of the burial of a Confederate prisoner-of-war; details of the scene are based on archaeological evidence. Fort Pulaski National Monument, Georgia.

awareness posters, book covers, and other presentations as eye-catching, educational devices (Figure 2).

A unique program to cross-train archaeologists and interpreters in

NPS is the newly developed archeology-interpretation shared competency curriculum. Archaeologists, interpreters, and educators are trained together in the "basic tools"

for developing effective presentations and programs that meet federal standards and agency missions. Stressed in the curriculum is the need for cooperative communications between disciplines, the importance of teamwork, and the need for accurate and sensitive interpretation to multicultural audiences. The goals of this program are to strengthen the relationship between archaeology and public interpretation and ultimately to improve how archaeology is presented to the public (Jameson 1999).

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Warren B. Church

Loving it to Death: The Gran Pajatén Predicament

Itical, economic and social reorganization and recovery during the 1990s, caring properly for natural protected areas and archaeological heritage is not always a high priority. In Peru, the search for revenues during the past decade has taken a significant toll on the nation's natural and cultural resources, a trend that culminated in the recent controversy over the Lima government's plans to expand tourist infrastructure at the Inca "palace" of Machu Picchu, arguably South America's greatest tourist attraction. Yet while a political storm drawing international interest raged over Machu Picchu, a quieter but similar dilemma had begun emerging decades earlier at another remarkable ancient settlement in the eastern Andean cloud forests of northern Peru. The equally spectacular Chachapoyas site of Gran Pajatén was targeted for tourism development soon after its 1964 discovery.

The site has so far been spared development by virtue of its remote location and difficult access, and its incorporation in 1983 within a protected area, the Rio Abiseo National Park (Figure 1). This is indeed fortunate, as the political forces seeking to turn Gran Pajatén into an economic asset have so far failed to understand the fragile nature of this cultural resource. Several articles have highlighted threats to the Rio Abiseo National Park as a protected area (Leo 1992; Young et al. 1994), but the following article details problems distinguish that the conservation status of the park's archaeological resources. My perspective is derived from participation in archaeological investigations within the park since 1985, and from avid observation of political developments affecting both research and conservation. Most of Gran Pajatén's problems epitomize a single dilemma facing cultural resource managers in national parks and preserves around the world. How can we facilitate public access to fragile archaeological sites without fatally compromising their historical and scientific integrity?

Gran Pajatén

The archaeological site of Gran Pajatén is a prehispanic settlement perched on a high terraced ridge top



Figure 1. Map of the Rio Abiseo National Park.



Figure 2. Map of archaeological site of Gran Pajatén. Note the helicopter pad and campsite used in 1966 and 1990.

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overlooking the Montecristo River Canyon (Figure 2). The Montecristo lies within the Abiseo River drainage, which empties into the Huallabamba tributary of the Central Huallaga. At 2,850 m, Gran Pajatén lies deep within the tropical Andean cloud forest where temperature averages between 6 and 12 degrees Celsius, and annual precipitation ranges from 2,000 to 4,000 mm. Rain and thick mists are almost daily occurrences, even during the dry season between May and October. Dense forest covers masonry constructions at Gran Pajatén and other archaeological sites within the surrounding valley. This region is mostly uninhabited today, as the rugged terrain, high humidity and unstable soils of the upper forests have been unattractive to Andean farmers. Government agencies responsible for evaluating natural resources describe the upper forests as virtually useless economic from an standpoint (ONERN 1976). Consequently, both scholars and lay persons tend to assume that the region has always been uninhabited, perhaps utilized only sporadically by temporary or transient populations.

Gran Pajatén has been known to science only since the American explorer Gene Savoy (1965) publicized its discovery by local villagers from Pataz. Most extraordinary about the site was the unexpected sophistication of its architecture given its remote location within one of Earth's most

hostile environments. The complex of at least 26 stone buildings. most of which are circular, crowns a crescentshaped ridgetop hewn into ascending terraces, skirted by staircases, and entirely paved with slate slabs (Figure 3). Ornamenting the building walls are inlaid slate mosaics depicting a variety of geometric shapes, bird motifs, and rows of human figures each with sculpted sandstone-tenoned heads (Figures 4 and 5). The mountain slopes below the settlement are also terraced, giving the entire built complex a total extent estimated at 50 ha. The exact size of the settlement remains unknown, but it does not exceed 2 ha.

The interest awakened by the discovery of this "lost city" brought about two government-sponsored expeditions during 1965 and 1966 led by high government officials, including several from Peru's tourism industry Peruvian sector. The military, especially the Air Force, had a celebrated role in clearing the forest from the ridgetop, building a landing site, and providing helicopter access for the government officials. A popular image of Gran Pajatén subsequently reproduced in widely distributed posters and pamphlets shows the Peruvian flag flying atop the ridge where it was planted within Building No. 1, the most prominent construction at the site. As news of the spectacular discovery spread around the globe, Gran Pajatén became a source



Figure 3. Gran Pajatén's Building No. 1 and its staircase entryway in 1985. Slate-paved plaza and stela in foreground.

of great national pride. Its discovery coincided with then-President Fernando Belaúnde Terry's social programs to promote colonization of the jungle. The site was regarded as monumental testimony to the fortitude and indomitable spirit of the ancient Peruvians who conquered an environment which has repeatedly thwarted contemporary attempts at colonization.

During their brief visits, expedition personnel and supporting Pataz villagers cleared vegetation over an estimated area of 6,000 sq m and neatly stacked the collected masonry rubble lying within and around the buildings. The helicopter-landing site was built on top of buildings at the north end of the site, and a camp with latrines was established along the northeastern edge. Expedition personnel produced several magazine articles, a few brief scientific reports (Pimentel 1967; Rojas 1967), a TV documentary by the British Broadcasting Corporation, and, most importantly, one monograph (Bonavia 1968) describing the results of concurrent archaeological investigations at the site. Always one of Peru's most outspoken scholars, Bonavia was especially critical of expedition activities that damaged the site's constructions. The plan to prepare Gran

Pajatén for use as a tourist attraction was quickly forgotten in Peru's shifting political landscape.

Between 1966 and 1985, numerous expeditions of tourists and archaeologists visited Gran Pajatén and reported other archaeological sites (Deza 1976; Kauffmann 1980; Leo and Ortiz 1982). Largely due to the efforts of Leo, Ortiz, and other dedicated Peruvian naturalists, the region was set aside as a national park in 1983. The creation of the Rio Abiseo National Park provided a refuge for the endangered yellow-tailed woolly monkey (previously thought extinct) and for other rare and threatened animals and ecological systems. The

park's area of 274,520 ha is delimited by the natural boundaries of the Abiseo River watershed (Mendoza and Lozano 1997). At 4,200 m elevation, its western edge coincides with the political boundary separating La Libertad and San Martín departments (technically referred to as *Regiones*), while its eastern boundary lies 70 linear km distant within San Martín's lowland tropical forest at 500 m elevation. The World Wildlife Fund has helped fund a staff of locally recruited park guards and an administrative director that succeeded in removing livestock and discouraging the frequent burning of the forest. Although the park lies completely within San Martin



Figure 4. Stone mosaic frieze with seated anthropomorphic figures on the exterior walls of Building No. 1, Gran Pajatén.



Figure 5. Stone mosaic frieze of bird on the exterior walls of Building No. 2, Gran Pajatén.

department, its administrative headquarters was established in the highland village of Pias because all access (and therefore virtually all threats) to the archaeological sites is exclusively through the highland villages of La Libertad. Topographic barriers in the lower Abiseo valley have so far thwarted twentieth-century attempts to create access to Gran Pajatén from San Martín by means other than helicopter.

In 1985, scientists from the University of Colorado–Boulder, Yale University, the University of Trujillo, the Asociación Peruana para la Conservación de la Naturaleza (APECO),

and the National Agrarian University-La Molina began a much publicized, long-term multidisciplinary research project in the park that included the identification of more sites, as well as test excavations at La Playa, Gran Pajatén, Manachagui Cave, and several others (Lennon et al. 1989; Church 1991, 1994, 1996, 1999). The new data undermine accepted theories that characterize cloud forest sites such as Gran Pajatén as latefifteenth-century agricultural colonies established by highland populations who were forced into the forest by environmental or demographic stress or were seeking access to lowland crop

production zones (e.g., Bonavia and Ravines 1967; Bonavia 1968; Kauffmann 1992; Moseley 1992). There is now overwhelming evidence that indigenous cloud forest societies (1) have utilized the forests since 8,000 BC; (2) settled deep within the forest at Gran Pajatén as early as 200 BC; and (3) built many settlements far larger than Gran Pajatén, indicating that a thriving population numbered in the many thousands on the eve of the Spanish conquest. Yet despite the scientific theories devised to explain cloud forest settlement, an aura of mystery, mostly perpetuated by the Peruvian media, continues to surround Gran Pajatén.

Historical Perspective

In response to several different factors, a predicament began to emerge at Pajatén during the early 1990s. An undercurrent of tension between scientists and administrators on the one hand, and local politicians and developers on the other, had already become evident owing to the Ministry of Agriculture's closing of the park to public access in recognition of the region's environmental fragility. Consequently, Gran Pajatén and the Colorado-led research project became "political footballs." During the 1989 elections, political candidates from Pataz drew attention to themselves by denouncing the looting of Gran "foreigners with Pajatén by backpacks." Simultaneously, several original members of the 1960s

government expeditions publicly decried the site's "abandonment" and claimed that the foreign research project had done nothing (e.g., Mejía 1990). Antagonisms escalated as ecotourism entrepreneursteamed with San Martín politicians to undermine APECO's credibility by publicly accusing the association of embezzling research funds (e.g. Radio Programas del Perú 1990). Further, the prodevelopment faction repeatedly claimed that plant regrowth was destroying Gran Pajatén's buildings, which urgently required cleaning.

The mounting clamor culminated in a 1990 re-enactment of the "conquest" of Gran Pajatén, led again by the Air Force and facilitated by a television crew from the Peruvian weekly television news magazine *Panorama*. Soldiers again cleared the 1960s helicopter pad and other portions of the site, set up camp in the same location, and scraped vegetation off of the building walls with machetes, hands and fingernails. These loud proceedings were witnessed from a distance by Peruvian biologists attempting field studies in the valley below Gran Pajatén. The television spectacular aired on 10 August 1990. Shortly afterward, newspapers informed by the biologists reported the illegal intrusion into the national park, and noted that the expedition not only lacked proper authorization, but failed to notify park administrators (Expreso 1990).

To assess the new damage done by

the 1990 expedition, the National Institute of Culture (INC) office in Trujillo sent an archaeologist to join park administrators at the site. Among the damages reported at Gran Pajatén, it was observed that some sculptures were indeed missing, and that the sandstone-tenonedheads were eroding rapidly without the cover of vegetation (Briseño 1991). It was also observed that every cleaning of the mosses and lichens removes surface grains from the moist sandstone sculptures. There were, on the other hand, some positive developments about the same time, most notably UNESCO's recognition of Rio Abiseo National Park as a World Heritage Site, first in 1990 for its natural features and again in 1992 for its cultural attributes. In 1991, the University of Colorado and the Fundación Peruana para la Conservación de la Naturaleza (FPCN) jointly published a management plan for Rio Abiseo National Park (University of Colorado and FPCN 1991). This was followed by an international symposium in Lima sponsored by APECO and the World Wildlife Fund. There, scientists and administrators united to discuss the results of the research undertaken since 1985, and make recommendations for the future (Aguilar 1992). Despite these developments, however, Gran Pajatén was increasingly viewed as an untapped economic resource, especially by politicians in San Martín who felt more strongly than ever that their

departmental authorities should be guiding the destiny of the site and the national park.

The dismemberment in 1992 of the Sendero Luminoso and Tupac Amaru revolutionary movements cleared the way for a national economic expansion that further stimulated entrepreneurs and politicians to seek access to the park. Intense political pressure now originated from the department of San Martín, where the regional economy has long been isolated and depressed. Beginning in 1996, the Ministry of Agriculture's Institute of National Resources (INRENA), under the auspices of Peru's National Fund for Natural Protected Areas of the State (PROFONANPE), held a series of meetings and workshops in Lima and San Martín (including both politicians and scientists) aimed at developing a plan for public use of the park (INRENA 1996). The meetings were accompanied by "fact-finding" expeditions to examine Gran Pajatén (Mendoza 1997). These activities culminated in two government-sponsored studies conceived to analyze of all of the factors involved with creating responsible, sustained public access (i.e., tourism) to the park. These were contracted to the nongovernmental organizations ANDESTUDIO (to study the easternmost portion of the park; ANDESTUDIO 1997) and APECO (to study the westernmost portion). I participated in the latter study (APECO 1999) in which I

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advocate a landscape conservation approach (Church 1999).

The Pajatén Predicament

One might hope that Gran Pajatén's dual World Heritage status as a cultural and natural site, protected by both the Peruvian INC and INRENA, would ensure the site's integrity in the face of a wide variety of threats. However, the INC and Ministry of Agriculture have not communicated effectively with one another with regard to granting access archaeological sites and to development planning. The Ministry of Agriculture, in the form of INRENA with PROFONANPE, has taken the lead in terms of planning because it is simply better equipped to do so. This seems appropriate since Gran Pajatén has certainly benefited from the park's underdeveloped, but nominally protective, infrastructure. Due to lack of governmental support, Peru's INC central office with its appointed staff of archaeologists has historically been unstable, and therefore unable to maintain long-term conservation initiatives. However, neither INRENA nor the INC's San Martín office maintain staff archaeologists, and there is no clear legal mechanism to govern the quality of the cultural resource management so critical to the process underway. Finally, a latent threat exists in Peru's own Ministry of Industry and Tourism's 1997 mandate to generate revenue from the nation's cultural resource assets.

Some conflicts that threaten site conservation in the Rio Abiseo National Park are more imagined than real, yet even false perceptions can inflict damage. Many people and institutions see the problem of prohibited public access as residing in a small, selfish group of APECO and FPCN conservationists trying to prevent the public from enjoying its rightful access to the park. Actually, the founders of APECO foresaw the park's tourism potential (Leo and Ortiz 1982), and conservationists now struggle mostly to prevent the kinds of thoughtless atrocities committed by past expeditions. The event with greatest potential for negative impact was the 1997 relocation of the park's administrative headquarters from highland Pias, La Libertad, to Juanjuí, San Martín, at the behest of San Martín politicians. As a consequence of weakened vigilance at the western boundary, consulting scientists in 1998 encountered cattle grazing among the archaeological ruins at 2,650 m elevation, deep within the park (APECO 1999).

San Martín and its regional INC office views itself as engaged in a struggle for control of the park with the INC's La Libertad office. The conflict is one manifestation of the wide political rift between these two departments which were to be administratively joined in the early 1990s under Peru's "regionalization" plan —until San Martín reasserted its autonomy in a public referendum.

Opponents of the plan argued that the administrative coupling made no sense given the lack of economic and transportation linkages. In this politicized context, Mendoza's (1994, 1997) repeated assertions that the ancient inhabitants of Gran Pajatén spoke the language of early historic lowland (San Martín) Cholón Indians seems to be a reaction to the perception of La Libertad's historical domination of political, economic, and cultural affairs. Mendoza's assertion contradicts more popular interpretations of cloud forest occupations as colonization by highland Quechuaspeakers (from La Libertad). The desire to lay claim to the site's ancestry, as well as to its present administration, reflects the intense feelings of national and regional pride connected with Gran Pajatén. Actually, the INC La Libertad office has traditionally administered projects in the Rio Abiseo National Park at the request of investigators because research projects are based at coastal universities in La Libertad and Lima. Most importantly, however, scientists are forced by geographic reality to enter the park from the western (La Libertad) side. From the coast it takes four travel-days by air, car, horseback, and foot, not counting days necessary for staging activities in Pataz or Pias. Construction of a road into the park is out of the guestion for reasons well-known to all the most obdurate but prodevelopment advocates. The upper

Montecristo Valley's high altitude, capricious weather, lack of appropriate landing locations, and fragile ecology preclude systematic helicopter access. It remains to be seen how San Martín will administer conservation activities and regulate entry while being denied direct access to Gran Pajatén by immutable topography.

From a technical standpoint, Gran Pajatén's predicament is even thornier. Pro-development factions, backed by the popular media, have perpetuated the idea that it is better to cut the vegetation off of the ruins rather than let it recover from its 1965-66 shearing. However, botanist Kenneth Young, who is familiar with the park, observes that the secondary regrowth is dominated by crowded stands of bamboo and light-demanding shrubs with voluminous root systems. These systems tend to penetrate and burst the masonry walls of archaeological structures. Presently, Gran Pajatén's primary constructions are in dire need of emergency stabilization. Subsequent maintenance may require that a resident caretaker cut the bamboo and shrubs constantly, allowing only the growth of strategic tree species that will restore the forest canopy. However, maintaining an individual and his or her family in such an isolated place for extended periods of time may not be practical for many reasons. Strategically important sectors of the site must be covered with roofs that can withstand exposure to severe weather.

With a slate pavement and an elaborate covered drainage system, Gran Pajatén was built to shed water efficiently. The drainage system might be restored, but the site's slate covering is brittle, and the deterioration of passages and stairways is accelerating with the passage of visitors with heavy footgear. Further damage might be avoided by constructing alternative access or elevated walkways.

Most troublesome of all, how will access and visitation to the sites be effectively controlled if vigilance is not based at the point of greatest threat to the park's resources (i.e., highland La Libertad)? The recently televised scientific recovery of Chachapoyas mummies from cliff tombs at nearby Lake of the Condors has stimulated great public interest in cloud forest antiquities. Fortunately, looters have so far overlooked many of the park's vulnerable antiquities that remain *in situ*. What has kept looters at bay, and what will most likely keep significant numbers of tourists away indefinitely, is the park's remote location. The question then remains: Who will provide the large sum of money required to deal with Gran Pajatén's urgent conservation needs given the complex political landscape and the unlikely probability of recovering the investment through a viable tourism concession? Without the immediate implementation of a cautious conservation program, Gran Pajatén will suffer inevitable disintegration through a tragic combination of neglect and more of the same kinds of abuse that have characterized its recent history.

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Denis Gojak

The Battle for Sydney Harbour

I was much surprised at the fortifications of Sydney Harbour. Fortifications, unless specially inspected, escape even a vigilant seer of sights, but I, luckily for myself, was enabled specially to inspect them. I had previously no idea that the people of New South Wales were either so suspicious of enemies, or so pugnacious in their nature.... But in viewing these fortifications, I was most especially struck by the loveliness of the sites chosen. One would almost wish to be a gunner for the sake of being at one of those forts.

—Anthony Trollope, *Australia*, 1873

he 2000 Olympics will bring unprecedented international attention to Sydney, the largest and oldest city in Australia. A key feature of the proposed creation and selling of Sydney's media image is an emphasis upon the harbour, even though it will only be a venue for yachting and the main Olympic venue will be some kilometres away. In preparing for this new level of scrutiny, great effort has been made by public agencies, state and local government, and corporations to present the best possible picture for visitors and international media viewers. By doing so they are making choices regarding what image they emphasise and what characteristics they downplay. This is not new, as the process of selection and emphasis has been going on for more than a century and remains a strong structuring principle for park management in its social and political context in Australia.

Former defence lands around Sydney have been taken into public ownership, notably incorporation into Sydney Harbour National Park. The defence lands form a significant proportion of the land surrounding the harbour and, because they have escaped development, are generally well-vegetated with native and exotic vegetation, standing out from suburban sprawl and industry. Since acquisition, the National Parks and Wildlife Service of New South Wales (NPWS) has managed the land primarily for its natural values, but has been far more tentative in deciding how the major cultural sites within the park should be managed. This paper focuses upon one area within Sydney Harbour National Park, the headlands known as Middle and Georges Heads, and examines the

management history of its cultural heritage, especially the defence heritage of the area.

This paper contends that, although the bulk of Sydney Harbour National Park is made up of former defence reserves and contains nationally significant historic coastal defences, this fact has been underplayed in the debates and decisions about the long-term management of the land at the expense of its natural heritage significance. The solution remains to be offered, but the role of NPWS in drawing attention to the greater significance of cultural heritage of the park through interpretation and education needs to be enhanced. Initial steps in that direction have been taken, but whether they are effective will only be revealed with time.

National Parks in Australia and Parks Around Sydney

National parks have a history in Australia almost equal to that of North America. In each continent, early national parks sought to achieve two goals: reserving outstanding scenic landscapes from development, and encouraging tourism and recreation as a social good. The first Australian national park was the Royal, to the south of Sydney, dedicated in 1879. It combined what was then undeveloped coastal forest and river valley land with heavily modified areas forming picnic grounds and artificial boating lakes, scenic drives and picnic spots. There was no apparent ambiguity or uncertainty in presenting nature in both its untouched and completely artificial forms and representing that under the single heading of a "park." The creation and promotion of national parks in Australia at the end of the nineteenth century can best be understood as part of a Victorian ideology which held that nature existed both as a backdrop against which civilisation operated and developed and as a contrast to the degradation of city living which provided renewal and revitalisation (Ashley et al. 1991).

Around Sydney there were a number of similar parks established to provide an escape from the perceived congestion and pollution of the city. Trains and ferries allowed cheap and regular access to these sites. Formal recreation favoured picnics, fishing, boating, walks, and rides, while informal recreation included the establishment of artists' camps, surf and river bathing, and camping. The archaeology of early park planning consists of large "flats"—terraces defined by substantial retaining walls next to rivers where picnics and festivities could be held—kiosks and shelters, rockeries and gardens, pavilions and lookouts. Most tracks built were so robust they are still in regular use decades later (Ashley et al. 1991).

Within the broader ambit of recreation the reserved lands were also

an important setting for escape from the city in other ways. During economic depressions many reserves were occupied by the unemployed, who built small shanty towns, such as "Happy Valley" at La Perouse, eking out a subsistence living from fishing or hunting rabbits and growing vegetables. When sea bathing was forbidden in daylight hours, secluded coves were important for recreational swimmers. Along with sea bathing, many of the locations became important as "beats" for homosexual men to meet with less fear of homophobic violence. These sorts of activities were only tolerated because they took place in remote settings and form one of the undercurrents of park management even today.

In the twentieth century, national parks and nature and wildflower reserves were declared throughout the country, although most commonly in the economically marginal and rugged lands bordering the main east coast mountain range. In 1967, NPWS was established. Its formation was largely driven by politicians, senior bureaucrats and environmental campaigners who had been impressed by the successes of the U.S. National Park Service in developing natural areas as tourist attractions, and for the successful management of large land areas. The legislation establishing NPWS was strongly influenced by U.S. experience. The main reserve categories were national parks, nature reserves,

and historic sites. The latter could either be places of national historical significance, or places of importance for Aboriginal spiritual values. While it was recognised that national parks were likely to contain structures and other evidence of historic land use, they were primarily established for nature conservation and recreation, reflecting the reality of the past seventy years.

Sydney Harbour National Park and its Defence Heritage

Sydney Harbour National Park was developed as a result of transfers of Commonwealth (federal) land to the New South Wales government commencing in 1979. Military bases occupied the various locations until strategic changes in defence planning had made these uses redundant. It consists of discrete headland reservations, with some interconnection by narrow foreshore strips above the high-water mark.

The arrival of Europeans—first a sail-past by Captain Cook in the *En-deavour* in 1770, and then by Captain Arthur Phillip, at the head of the First Fleet, in 1788—marked the establishment of a major British colony at the farthest reaches of Empire. The development of fortifications to defend the harbour against enemy attack was rapid, the urgency prompted by the commencement of war against France, and exacerbated by the presence of Irish convicts with strong separatist politics.

The pattern of defence from 1788 onwards follows several general themes (NPWS 1999; Gojak 1995; Gojak, forthcoming). The first is the gradual spread of defences further out from the main settlement. The short range of guns, requiring any attacker to close in on the settlement to pose any real threat, necessitated this. As gun ranges increased through the nineteenth century, and as Sydney grew, defences needed to be located farther outward in order to stop bombardment. This culminated with the development of the Sydney Fortress in the late 1920s and 1930s. This relied upon a decentralised layout of powerful gun batteries, supported by observation posts and command stations, that allowed the entire coast around Sydney to be protected (Fullford 1994).

The consequence of the gradual movement of defences farther and farther from the city is a pattern of defence lands and fortifications of different dates in a wide range of locations. While some locations have been built upon again and again, leaving a complex archaeological palimpsest to unravel, most only represent one or two phases of construction, followed by abandonment for active defence.

The second theme of importance in understanding Sydney's defences is the mentality of the "scare." Many Australians for a very long time thought of themselves as British people on the other side of the planet from Home (meaning Britain, and always spelled with a capital "H"). While this was a satisfactory arrangement for a growing colony that was gradually maturing and discovering independence, whenever Britain got into a tense diplomatic situation with another imperial power, Australians always felt that they would be an early target for an attack. During the nineteenth century, therefore, a pattern of crises in defence preparedness took place, always in response to rising hostility between Britain and another power.

The usual colonial response in such a crisis was to hurriedly seek to complete previously unfinished gun batteries and defences or build new ones without plans or much thought. Soon enough the crisis would be over and the emergency funding would dry up. The archaeological legacy is a succession of poorly planned and hastily erected defences, some unfinished. Each marks a particular crisis and the response by the colonial authorities. An example is at Bradleys Head, where the arrival of two U.S. warships unannounced in the Harbour in 1839 provided sufficient demonstration of the vulnerability of the town from a sneak attack that a hurried round of gun battery construction took place over the next year (NPWS 1993). These constructions were unplanned and never finished, being sited more to provide reassurance for the citizens than to intimidate attackers.

A third theme that can be identified as being present throughout the entire history of the defences is the adoption and modification of designs and principles from British exemplars, and the purchase of British military equipment. This is itself unsurprising, but the two significant breaks from the pattern demonstrate how effectively it was enforced. The first was in the period from 1870, when British garrison troops were withdrawn from Australia, to 1877, when British military advisers were sent back in. The second instance was during the Second World War. At the same time as Australia's prime minister, John Curtin, was making his speech that Australia's destiny lay with the United States of America, the Army was for the first time buying bulk equipment from the USA and beginning to adopt and adapt American tactical doctrine in a range of military operations. In both of these cases the archaeology reflects a short horizon of technology and design that runs counter to the prevailing "Britishness" that is the norm from 1788 onwards.

Therefore the resulting legacy of the military defences of Sydney is more than a collection of interesting gun batteries, showing a gradual change from smooth bore to rifled barrels, and increasing gun size as the nineteenth century progressed. It represents a resource that demonstrates the gradual development of nineteenth- and twentieth-century technology, both in the form of the defences and their patterning across the landscape. Similarly, there is a clear demonstration of the psyche of the colonial mind in the response to scares, and in the interplay between growing independence from Britain and the definite sense of being part of Britain's extended empire.

Management and Conservation History of Middle Head

Middle and Georges heads, as two contiguous headlands opposite the entrance to Port Jackson, and commanding the passage down Sydney Harbour towards the city centre, had a crucial role in the defence history of Sydney. The archaeology of the two headlands spans the period of Aboriginal occupation in the Holocene, subsequent significant attempts at establishing an Aboriginal farming community, and defences and military establishments spanning ca. 1800 to the 1960s. The defences dominate the headland, having shaped nearly all of the level areas with gun batteries, parade grounds, and clear fields of fire (NPWS 1999).

Prior to the transfer of Middle and Georges heads to NPWS, the Army demolished a large number of buildings and structures in both areas (Gojak 1985; NPWS 1997, 1999). Retained were the self-evidently historic buildings and gun emplacements, i.e., those more than seventy years old. Maintenance

wound down from the mid-1970s, allowing the argument that the buildings removed were incapable of repair. Following transfer, NPWS did not undertake any substantial conservation works on any of the buildings, and only undertook minimal work that was needed for public safety and management, including mowing of the main grassed areas, repairing those buildings to be used as staff residences, and fencing some of potential danger spots. The regeneration of bushland was generally not checked, leading to a gradual loss of open space (Bourne 1999).

The first historical and archaeological survey to investigate the area took place in 1985 (Gojak 1985; Harvey 1985; Wilson 1985). This identified the complexity of the cultural remains that had been present and still survived. The survey supported the claim that the defence heritage was of national significance, and the themes that have been expounded above began to be articulated in support of the understanding of the site. From 1989, tours of the headlands—the "Tour de Forts" have been run by NPWS on a regular basis, accessing tunnels and emplacements that are normally not made accessible to the public (Cunningham 1991).

Access to the Middle Head section of the park has always been difficult, as it required finding an unformed track that led around an active Army base. Despite this, visitation has continued to increase as more people find out about the site and its scenic views. No interpretation has been installed on the site, making it difficult to understand what the concrete bunkers and pits represent. There is a general understanding that these are old gun emplacements and previous Russian and Japanese threats are involved. As well as visitors seeking either the harbour views, there has been a strong history of access by fishers, nude sunbathers, teenagers doing teenage things, squatters in vacant premises and rock shelters, and homosexual men at an established "beat." Relatively few visitors have made the trek to see the defences, and many of these come with others who know the main access points (personal observation).

In the past ten years, the majority of management work has been constrained by lack of resources to tackle the substantial amount of work required to conserve cultural sites. The majority of work has been bushfire hazard reduction, continued grounds maintenance, basic drainage and other maintenance work, and further safety. Several large capital-intensive projects have taken place on significant defence sites, notably the 1880s armoured casemate at Georges Head, plus metals conservation (NPWS 1997; NPWS Annual Re*ports* 1979–present). The funding for these has had to be found separately within the agency or from external

sources, as it has not been able to be met from the available operating budget.

Immediately adjacent to the NPWS-owned parts of Middle and Georges heads are other recently vacated defence establishments. The eventual fate of these lands has not been determined, but the current Commonwealth position is that the less developed, i.e., the more "natural," areas will be transferred to the state for addition to the park, and the remaining land which has defence housing or is developed will be made available for housing. Public debate on this position has been vigorous, and reveals that the land is still seen as being largely natural. Recognition of the importance of the cultural sites, especially the more recent defence heritage, is often absent or only developed as a minor issue (see Uren 1999 as one example of many letters to newspapers and minor editorials). At its most extreme, community arguments represent the position that the area should be returned to parkland and developed into a fully natural area, i.e., removing cultural evidence that may show that the area has not been coastal forest since the Pleistocene.

Progress in Interpretation and Management

For a park management agency which will eventually take over some of this land and be required to manage and conserve all the values, the prevalence of the "nature first" argument, if it can be so termed, is a concern. Education of the community on the important values that are present on the existing part of the park is a priority, but because of the lack of previous development of interpretative, recreational, and educational opportunities, this has had to be planned almost from the beginning. The guided fort tours are currently the only program offered by NPWS, and there are no self-guided tours or signage.

Funding was received from the NPWS internal cultural heritage research grants program to prepare a model interpretation plan for Middle and Georges Heads (Bickford et al. 1999). Consultants were engaged to prepare the plan based upon recently developed best-practice guidelines for park interpretation (DNREV 1999).

The model interpretation plan, following the best-practice guidelines, took an integrative approach to significance assessment (Australia ICOMOS 1994, 1999). Existing research on natural values, Aboriginal and non-indigenous heritage significance, and contemporary social importance was supplemented where necessary with new research. The primary structure for the interpretation is the presentation of Middle and Georges Heads as representing different scales of time, with geological time scales, Aboriginal time and a long recent past / present. Aboriginal
time, for example, is represented in relation to Aboriginal cosmological belief in the shape of the land representing spiritual activities from the Dreaming which still resonate in the present, thus tying in the geological time scale into a separate but parallel narrative based upon a different value system. The elaboration of the story of Aboriginal people on the site after European settlement also aims to ensure that it is incorporated into the historical narrative (Bickford et al. 1999, 31-34).

While the defence heritage management issues will dominate future management of the site, as the infrastructure is decaying and requires considerable conservation resources be directed to it, the interpretation aims to place it into context. The separation of conservation effort from interpretative effort is an important principle, even in such simple matters as making sure that when conservation works are being carried out they are explained and incorporated into the presentation of the site and what is being done to retain its heritage values. It also will reduce the disciplinary dominance of conservation practice, and allow community values greater scope for leading future research and management (see English and Veale 1998 for comparable issues in Aboriginal site management).

The interpretation plan, then, develops specific themes and requirements for making particular locations

safe and accessible to allow visitors to see a range of different attractions. Signage, publications, Web sites, and guided and self-guided tours are all identified as products to meet the demands of different possible users of the site. The interpretation plan offers the prospect of encouraging understanding of defence heritage in a way that gets away from a focus on guns and war to its wider context in Sydney's history (e.g., Uzzell 1989).

Conclusion

Trollope's quote at the head of this paper indicates that right from the start the defence lands were accessible to the public. The implementation of the interpretation plan will commence soon, although it will be too late for the Olympics. During the period of military occupation, gaining access to the land was far more difficult, but it remained an important place for many users.

During the course of the late nineteenth and early twentieth century clearing, military activity, and construction transformed this land. When the military moved away, it provided an opportunity for the bush and the weeds to grow back, making it superficially look like the military had never been there. With its incorporation into Sydney Harbour National Park, this process of transformation has been completed, creating a justification for perceiving the land as being primarily an important piece of bushland within the city.

The problem for archaeologists, heritage managers, and site managers has been to begin to use the tools of conservation planning and interpretation to alter the public's perception and make them more aware how many other important things there are on Middle and Georges heads.

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Management Strategies and the Component of Indigenous Sacred Places: The Dreaming and Aboriginal Involvement in Site Management within Northern Territory National Parks, Australia

The obvious absence of these features [settlements and political structure] gives the invader (settler, administrative officer, missionary) the impression that the natives are almost cultureless and that whatever he does can interfere but little with them (Elkin 1951, 165).

This time white-European must come to Aborigine, listen Aborigine and understand it. Understand that culture, secret, what dreaming. No-matter we dead but that law you got to keep it.... And you can't change it no-matter anyone, no-matter rich man whatever, no-matter is king, whatever king, but that law e can't break (Neidjie 1989, 78-80).

he government manages national parks in the Northern Territory of Australia primarily for the enjoyment of visitors. Natural beauty, biodiversity, and cultural heritage are seen as assets that can be exploited to bring tourists with their money into the region. For Aboriginal people, with their traditional country covered by national parks, there are unique issues. To the colonising population, the archaeology of Australia provides an interesting record of human adaptation and development within a hunter-gatherer society over a very long period (ca. 40,000-60,000 years). The rock art provides a spectacular vision of another culture. However, for the indigenous people, these same sites may form part of their sacred and ceremonial life. National park development strategies and the desire to impress the tourist are often in conflict with traditional appropriateness for places of religious significance.

Within the Northern Territory (see Figure 1), particular legislation exists that is intended to provide for the protection of such places and to recognise the rights of the indigenous people in the decision-making process; certain sacred sites are inappropriate for public access. However, for other places, the involvement of the Aboriginal custodians not only prevents conflict but also enhances the public interpretation and enjoy-



Figure 1. Map of the Northern Territory showing locations mentioned in the text.

ment derived from the site. Trends in the Northern Territory of Australia are toward the recognition of spiritual association and for the involvement of the indigenous people in the management and presentation of archaeological sites.

Cultural and political differences between Aboriginals and park managers has in the past resulted in the sometimes unintentional desecration of sacred sites, a situation of non-cooperation, and, at times, outright confrontation. This paper presents a background to the social and cultural circumstance of Aboriginal sacred sites, focusing on the management and public development of these places by the national parks authorities within the Northern Territory.

Historical Background

To understand the particular cultural circumstance of the indigenous people of this part of Australia, one must look at the colonial history of the region. Unlike the southeastern portion of Australia, the north is sparsely populated. The first British attempt at settlement was that of Fort

Dundas on Melville Island (1824-8). Established as a military and trading settlement, it was no more than an outpost of the New South Wales government centred at Sydney some 4,600 km sailing distance away. Prior to the permanent settlement of Darwin (Palmerston) in 1869, there were several other unsuccessful colonies established on the north coast (Powell 1982). Like Fort Dundas, they were short lived. Both Fort Wellington (1827-9) and Victoria Settlement (1838-49) were situated on the Coburg Peninsula. The fourth settlement was that of Escape Cliffs (1864-6) on Cape Hotham.

The influences on the Aboriginal people in the vicinity of these nineteenth-century settlements was limited and of no more effect than that of the Macassan trepang fleets that annually visited the north coast over the last few centuries (Macknight 1976). Exotic items entered the ceremonial exchange system and there is some linguistic evidence for the adoption of words, but little else (Mitchell 1995). It is possible that contact with other cultures occurred by way of landfalls prior to the documented exploration and mapping voyages under the Dutch (in the early to midseventeenth century) and British (from the late seventeenth century). Portuguese and Spanish seafarers may have reached the Australian coast prior to the seventeenth century. Certainly they were present in the islands to the north. It is also possible that Chinese voyages came to the shores of Australia many centuries before the Europeans, although there is only circumstantial evidence for this (Powell 1982).

In any event, it was not until the mid-nineteenth century that the interior of the Northern Territory was explored (Stokes 1839; Leichhardt 1844-5; Gregory 1855-6; Stuart 1860-2; Giles 1872-4; Gosse 1873; Favenc 1878-9; Forrest 1879-80). The survey of the route and subsequent construction of the Overland Telegraph line (1862-72) between Adelaide in the south and Darwin did much to open up the inland, each of the telegraph stations becoming outposts of white settlement. Some, like Alice Springs and Tennant Creek, resulted in the development of population centres that continue to this day. Favourable reports of the existence of extensive pastoral lands as reported by a number of the exploration parties hastened the opening up of the Northern Territory. These reports lead to the establishment of cattle enterprises over much of the Northern Territory and east Kimberley region of Western Australia from the 1880s. Such towns as Wyndham (founded 1886) in the east Kimberley were established to support the fledgling cattle enterprises. Others, such as Timber Creek (1897) with its police station, were established to lend support and protection to a stores depot that had been operating since the early 1890s

supplying the newly created pastoral stations. It was a rough and ready time: contact with the indigenous Australians was limited and often came at the end of a gun (Willshire 1896).

Within the Northern Territory, there was not the major disruption to social cohesion or the organised removal of people from land as had occurred in other parts of Australia. Of significance is that the South Australian government, in the initial development of the Northern Territory through the Northern Territory Crown Lands Act (SA) of 1890, provided to the indigenous people compensation, land reserves, and the right to hunt and otherwise utilise the land taken up for pastoral activities. By this it was hoped that the injustices and devastation to the Aboriginal people that occurred in the eastern states of Australia would not manifest itself. This is not to say that the indigenous inhabitants experienced no adverse effects from European settlement (Elkin 1951). Death occurred both as a result of punitive expeditions against them following livestock spearing and because they contracted introduced diseases. People, especially males, were removed from their communities on murder or livestock stealing charges, and taken as labour in the pearling, pastoral, and buffalo hide industries. In addition, the establishment of cattle stations not only changed people's domestic patterns though employment and food rations, but also changed the ecosystem, with the associated loss in availability of traditionally utilised fauna and flora.

Nevertheless, it was the particular European settlement and historic land use patterns of the Northern Territory that has ensured the continuity of Aboriginal laws, customs, and practises. Over much of the Northern Territory encounters with other cultures is a relatively recent event, and, until late in the nineteenth century, was spatially limited and short-term. In fact, today there remain a few people who recall their first encounters with white people, and for many the initial cross-cultural contact is only one or two generations removed. The sparse European settlements and the pastoral practises of the cattle industry have ensured that people remain on or close to their traditional lands.

Uniquely to the Northern Territory, almost 50% of the area is under direct administrative control of Aboriginal communities. The Aboriginal Land Rights (NT) Act of 1976 provides for the granting of land for the benefit of Aboriginals and affords control of mining interests and other developments on the granted Aboriginal Land. In addition, provisions within the Crown Lands Ordinance (No. 3) (NT) section 24(2) of 1978 continue to guarantee the rights of Aboriginals to enter and be on leased land and to hunt and forage for food

or ceremonial purposes.

Aboriginal Country

Unlike the popular misconception of the Australian Aboriginal as a nomadic primitive, presence on the land was not a truly random event, unconnected to economic, cultural, or religious life. True, Australian Aboriginal society was а hunter-gatherer culture, utilising stone, bone, and wood implements, and, in the main, did not establish permanent settlements (Hallam 1975; Oconnor 1987; Plomley 1966; Clarke 1994). However, people clearly identify with particular tracts of country, associate with certain features and places within the landscape, and hold to a notion of inheritance of cultural knowledge and estates. As Justice Lee commented, "Aboriginal inhabitants were distributed throughout significant areas in organised communities with elaborate and obligatory laws and customs, each having a defined area of land recognised by other groups as the homeland of the respective communities used by them for social, ritual and economic purposes" (1998, 43).

Aboriginal people, through kinship, inherit "ownership" to country for which they hold particular rights, above other persons, to access and utilise resources. Attached to those rights are the responsibilities to maintain (physically and spiritually) and protect Dreaming sites and other places of cultural significance. Certain areas and features in the landscape are held to have a sacred nature which is associated with the ascribed spiritual forces. The term "sacred sites" has come into common usage to identify these localities. Maddock (1974, 27) observed that "Aborigines regard land as a religious phenomenon. The earth owes its topography to the acts of worldcreative powers who appeared mysteriously and moved about on the surface before sinking into the ground or the water or rising into the sky, leaving a formed and populated world behind them.... The land as a whole is nameless, but the many spots at which powers acted and gave form (for example crags, waterholes, caves) are named and are religiously significant as evidence of the Dreaming." For Aboriginal Australians, the landscape is viewed as an amalgam of events acted out on the topography. The acquisition of knowledge of this metaphysical rationale of the landscape is attained, in part, through participation in ceremonies. Throughout life, a person continues to gain ritual knowledge which is placed in a topographic perspective that validates both the mythology and the bond between the person, the Dreaming, and the land.

Within Northern Territory Aboriginal society, responsibilities for the protection of Dreaming places (sacred sites) is an integral part of these peoples' lives. As Elkin (1951, 164)

observed many years ago, "imitation for the native is ... of the traditional, of the cultural, of the ways of the cult-heroes or 'Dreamings' as the Australian Aborigines call these." This is manifest in the customs and practises of these communities. For them, maintenance of the country and ritual performances are part of the linked association of the spiritual and tangible world. For aboriginal people, there is the coexistence of two domains: one of the physical world inhabited by humans and animals, the other occupied by the Dreaming figures, ancestors, and other spirits. Physical damage to places or incorrect ritual performances, even inadvertent actions, can result in sickness or death to individuals and groups responsible under Aboriginal tradition for the site or Dreaming concerned.

Sacred Site Protection

Protection of cultural heritage is enshrined in several laws of the Northern Territory. The Northern Territory Aboriginal Sacred Sites Act of 1989 establishes a procedure for the protection and registration of places of current cultural significance (sacred sites). In addition, the act provides for conditions of entry into such places and establishes a procedure for the avoidance of such places in the development and land use. The Heritage Conservation Act of 1991 provides a system for the identification, assessment, recording, conservation, and protection of places and objects of prehistoric, protohistoric, historical, social, aesthetic, or scientific value.

In the majority of instances, sacred sites comprise unmodified natural features that may include mountain ranges, waterways, or even isolated single trees and rocks. Other than by reference to the Aboriginal custodians (see Figure 2), there is no way of identifying the location and extent or the nature of significance of such places. However, in regard to those places associated with the prehistoric occupation of the Northern Territory, these archaeological places are evident by the presence of cultural material or by way of scientific investigations. Nevertheless, blanket protection is provided for both sacred sites and archaeological places within the Northern Territory, regardless of whether or not they have been "declared," "registered," or otherwise brought to official attention.

In addition to the problem of the physical setting of a sacred site, statutory rights are conferred upon Aboriginal custodians. In relation to areas that fall within the definition of a sacred site, rights under the Northern Territory Aboriginal Sacred Sites Act of 1989 include:

 The right of access to sacred sites in accordance with Aboriginal tradition, regardless of the underlying land tenure (s. 46) (see Figure 3);



Figure 2. Carlton George, a Mirriuwung man, standing against his own hand stencil, produced when he was a small boy camping at the Nganalum sacred site, Keep River National Park.

- The right to authorise other people (both Aboriginal and non-Aboriginal) to cross any land, whether it be public or private, for the purposes of entering a sacred site (s. 47-4);
- The right to refuse permission for persons to enter or remain on a sacred site (s. 43); and
- The right to determine the nature and extent of works (if any) that may be undertaken on or in the vicinity of a sacred site (s. 20).

It is also an offence for a person to obstruct an Aboriginal custodian from exercising these rights or for an individual or company to knowingly desecrate or otherwise carry out works within a sacred site area. The structure of the 1989 act accommodates the particular relationship indigenous inhabitants of the Northern Territory have with land, as well as the link between the social, cultural, and religious spheres attached to features within the landscape. Legislative framework and administrative procedures that protect sacred sites and archaeological places specifically allow for the involvement of Aboriginal custodians and the traditional owners of country regardless of the underlying land tenure. This situation is particularly pertinent in the management approaches to cultural heritage within national parks.

National Park Case Studies

Two examples of cross-cultural interaction and site management in national parks within the Northern Territory are Kakadu National Park, a World Heritage Site (declared October 1981, consolidated December 1992) administered by the Commonwealth government's Parks Australia, and Keep River National Park, controlled by the Northern Territory Parks and Wildlife Commission.

The background to Kakadu National Park is that there had been a longstanding interest in the establishment of a national park in the northern part of the territory. Following on from the Alligator Rivers Region environment fact-finding study of 1972-3, and the Ranger Uranium environmental inquiry of 1977, a park was established. Stage 1 of Kakadu National Park was proclaimed in 1979, encompassing an area of 6,144 sq km. Kakadu Stage 2, an additional area of 6,929 sq km, was proclaimed in 1984. Stage 3, which encompassed the Goodparla and Gimbat pastoral leases, was added in 1987, providing a total area of 18,960 sq km.

The National Parks and Wildlife Conservation Act of 1975, subsection 11-8, identifies the following objectives for the park:

 Encouragement and regulation of the appropriate use, appreciation, and enjoyment of the park by the public;



Figure 3. Map showing the main land tenure of the Northern Territory.

- Recognition of the interests of the traditional aboriginal owners and of other Aborigines; and
- Preservation of the park in its natural condition and the protection of its special features.

Aboriginal communities, held under provisions of the Aboriginal Land Rights (Northern Territory) Act of 1976, own much of the Kakadu Park area. It is leased back to the Commonwealth Government for the purpose of maintaining a national park. There are some ten Aboriginal residential settlements existing within the park, and several indigenous-owned enterprises assist these as well as operate tourist ventures (Press et al. 1995, 6). A majority of Aboriginals are on the board of management, with other traditional owners of the park employed as rangers. Management of the park is described as a community-based conservation project where the Aboriginal owners are given the opportunity to participate fully (Press et al. 1995, 239). Certainly the evidence is there to indicate that a cooperative and productive relationship in regard to site management issues has prevailed.

Keep River National Park, located on the Western Australia border, was established in 1979 by way of transfer of land from the existing Newry pastoral lease. An additional area was surrendered to the Territory in 1987, providing a total park area of 293 sq km. Although a relatively small area, it nonetheless includes diverse and spectacular landforms. Management of these lands is currently vested by way of the Territory Parks and Wildlife Conservation Act (NT) of 1994. Of relevance here is that there have been two plans of management drawn up, by one in 1982 and the second in 1991. Specific reference to Aboriginal rights and interests is contained within these documents. They acknowledge the particular role of Aboriginals in the management and protection of sites of spiritual and cultural significance. However, in practice, Aboriginal involvement has come at a late stage in planning and often at the insistence of the indigenous custodians. Very recently (24 November 1998) a federal court finding held that native title exists over Keep River National Park, in essence recognising that Aboriginal land interests in the area have remained intact since prior to the Crown claiming sovereignty (as part of the colony of New South Wales in 1825). It is too early to assess what, if any, effect this will have on the management of the park.

Since the park's inception, five community living areas have been established in or adjacent to the park. The park management raised much opposition to these settlements, with attempts made to restrict traditional practises such as hunting and foraging and burning of country. Although a board of management is

required under provisions of the park, it rarely convenes. There is only one Aboriginal representative on this body, a person who was chosen not by the Aboriginal people but appointed by the park management. In essence, the planning and management of Keep River have been without Aboriginal input. The Northern Territory Aboriginal Sacred Sites Act of 1989 has been the only means that custodians have had to ensure restriction of inappropriate access or development of areas within the park.

Cross-cultural Acceptance

Despite the existence of legislation intended to protect Aboriginal cultural places, and national park management practices that mandate the involvement of indigenous people, conflicts do arise. Often it is the park managers' recognition of the spiritual value of places and acceptance of the Aboriginal wishes for them—or lack thereof—that determine the process and outcome. In specific cases, such as with mineral extraction, political intervention and public opinion impinge on or sway management practices.

Several park developments within Keep River have been proposed that have brought park managers in direct conflict with the Aboriginal custodians of sites within the area. In many of the instances, the park managers intended to open for public access a number of locations that contained rock art. For the Aboriginal people, these locations were of important religious significance. In one case, the Nganalum site, not only are some of the images on the rock wall of ritual importance and belong to the Dreaming, they are also directly linked to known people. In addition, certain physical features at the place are associated with a Dreaming tradition. Construction of walkways, barriers, and interpretive signs were in place before Aboriginals were aware of the development. The Mirriuwung people view these as inappropriate works. Some adjustment to what was in place has been requested, but to date nothing has changed. Custodians also expressed their willingness to assist the park management in providing additional interpretive material, placing the site in a wider context of the mythological nature of the location and assisting with understandings of much of the rock art. It would seem that such cultural perceptions about a place could only be of interest and benefit to visiting tourists. Not only is the intransigence of the park managers at odds with accepted practise, their current action may be seen as desecration of a sacred site.

Misconceptions about the nature and reality of sites of sacred significance are often at the root of any development conflict. One letter to the editor of an Australian newspaper in regard to the Jabiluka mining proposal expressed not only a total lack

of understanding of Aboriginal culture, but also the attitude that the Aboriginals, not the development, must give way. The writer remarked that "mining has to take place where the ore body is located, on the other hand Dreaming should be possible just about anywhere. It would be wrong and irresponsible for any government to forego the tangible benefits of a mining operation for the very dubious value of primitive superstitions" (Canberra Times, December 1998).

Unfortunately, attitudes like this are not that uncommon. Ten years ago, a similar debate was focused on Coronation Hill, a proposed gold mine in the southern area of Kakadu National Park. For the Jawoyn, the location is an important sacred site; for the government and mining company, it was a source of mineral wealth (Figure 4). In this case, the cultural values of the site and the natural heritage values of the area won out.

Conclusion

The non-Aboriginal settlement history and land use structure of the Northern Territory has ensured the maintenance of a vibrant and cohesive society in which attachment to land and the link between the spiritual and physical world are important elements.

Legal and administrative structures to protect indigenous heritage places have been developed that acknowledge the particular situation of traditional cultural integrity. The legislation empowers the Aboriginal owners to participate in the manage-



Figure 4. Cartoon appearing in the *Northern Territory News* during the time of the Coronation Hill confrontation, Kakadu National Park, amply parodying the divergent views. (August 15 1990, p. 8. Used by permission.)

ment process and to determine what is appropriate. However, as evidenced with the two case studies, attitudes of park managers have a bearing on the process. It can either be harmonious and cooperative, or it can be acrimonious. Nevertheless, the prevailing situation is that places of sacred significance are protected under legislation and the Aboriginal custodians do have the controlling voice.

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Judith Powell

Expanding Horizons: Environmental and Cultural Values within Natural Boundaries

ndigenous communities have much to teach heritage professionals about the identification and management of cultural heritage values. A holistic approach to cultural heritage has long been promoted by indigenous communities: recent discussions in the professional heritage world about social and aesthetic value and debates about cultural landscapes all have precursors in indigenous concepts of cultural heritage.

Since 1992, a number of states in Australia have been engaged in regional assessments of the environmental, heritage, social, and economic values of forests. These assessments aim at providing expert advice upon which decisions about the future use of these forests will be made. The inclusion of cultural heritage assessments as part of the overall resource assessment is notable. Regional resource studies such as the regional forest agreement (RFA) process (incorporating assessments of natural, cultural, social, and economic values) provide an opportunity to adopt a more "holistic" approach to cultural heritage management. In this as in other matters, indigenous communities appear to be leading the way, with the development of catchment resource management models and co-management strategies. As part of the RFA process

in Southeast Queensland, two projects have identified principles and protocols concerning the management of cultural heritage values in the forests.

Natural and Cultural Values in Protected Area Management

Many years before I had any involvement in heritage issues, I spent a week walking the 129-km White Peak Way within Peak National Park in the United Kingdom. The park, declared in 1951, was the first area of Britain to be designated a national park, and the White Peak Way traverses some of its most beautiful parts. It also, much to my astonishment, passes working farms and towns and settlements. Indeed, the walk is planned to allow walkers to spend each night in a Youth Hostel and the published guide to the walk includes a pub tour! This all came as a shock to someone

raised in Australia, for whom the concept of a national park involved "natural" and "untouched" landscapes with natural features and examples of vegetation being interpreted for those traversing park tracks. By contrast, the symbolic feature of the White Peak was the patchwork of fences. the styles in farm "chequerboard of light-grey drystone walls" (Haslam 1982, 8). Although nature is celebrated in Peak National Park, people have a place there: they live and work within the park and no one in the U.K. is surprised by this. The "landscape" of the Peak District is a cultural one and continues to be SO.

Australia has one of the oldest national parks systems in the world: the Royal National Park near Sydney was declared in 1879 as a place of recreation and for nature conservation, and was modelled more on the British urban park system than the American Yellowstone model (Frawley 1989, In 1880 in Queensland, a similar reservation of land occurred at Mount Coot-tha close to the capital city of Brisbane. In all parts of Australia, it was the forests that were first considered for reservation, either because they were considered suitable areas for health and recreation, or because concerns were felt at their impending disappearance. Today, although only 5% of Australia's land is still forested, forests and woodlands account for 25% of the country's national parks and conservation reserves (Young 1996, 84).

Southeast Queensland's Forests

For thousands of years, the forests and woodlands of Southeast Queensland have been the home of indigepeoples. Subtle landscape nous changes are clearly demonstrable over time and include, in particular, those relating to the use of fire. Two distinctive vegetation types are patterned in the landscape, both as a result of fire management. Hardwood (mostly eucalypti) forests are interspersed with softwood (native pine) and rainforest "scrubs." Regular burning by indigenous people encouraged the former and reduced the extent of the latter. In the process, more open forests were created with grassy groundcover attractive to kangaroos and other game.

In particular areas, the forests and trees were the focus of religious activity. In the Bunya Mountains and Blackall Range to the north and northwest of modern Brisbane, triennial festivals attracted Aboriginal groups from throughout the Southeast. The massive bunya pine trees *(Araucaria bidwilli)* belonged individually to Aboriginal groups, and only members of that group could climb the trees to harvest the pine cones that were an important source of food and feasting at the time of these festivals.

When the surveyor John Oxley entered the Brisbane River in 1823 investigating potential sites for a new convict settlement, he commented favourably on the stands of hoop pine (Araucaria cunninghammii) lining the banks of the river. Timber, whether for building or export, was one of the earliest commodities exploited in the new settlement of Moreton Bay, and the search for timber supplies influenced early exploration and expansion from the settlement. Cedar cutters had already opened up areas along the coast between Sydney and Brisbane; Andrew Petrie reported on the stands of bunya pine found on his exploratory trips with Aborigines north of Brisbane to Fraser Island and the Mary River. All along the coastal strip timber was rafted and floated eastwards down rivers to the Pacific for shipment south to milling centres in Brisbane and Sydney; it can be argued that the decentralised nature of Queensland's settlement reflects in part this pattern of early timber transportation.

Forests and timber have had a profound effect on the development of Queensland, influencing settlement patterns, transportation networks, building styles and aesthetic sensibilities. At the same time Queenslanders, like settlers in other areas of Australia, had a profound antipathy to the forests, often seeing them as "wastelands." Settlers followed timber getters, attracted by what they assumed (often incorrectly) were rich soils beneath these stands of timber (Figure 1). Clearing and ringbarking (i.e., girdling the trees to kill them) were government-sponsored policies aimed at "taming" the forests and making the land "useable" for introduced forms of pastoralism and agriculture, and this decimation soon far exceeded the extent of forest destruction associated with the extraction of timber. The wastage of timber was particularly extreme when distance from rivers and coasts made the movement of logs to milling centres uneconomical.

Two conflicting strands in government policy are clear in Queensland. On the one hand, regulations on timber cutting began as early as 1839, prohibitions on the cutting of bunya pine were declared in 1842, and timber land began to be reserved in the 1880s. A conference on forest conservancy was called in 1873 and reported to Parliament in 1875. On the other hand, the government actively pursued a policy of expanded land settlement and selectors on resumed land were required to undertake "improvement" such as clearing. The creation, in 1900, of a Forestry Branch within the Department of Public Lands underlines this conflict, that is, those charged with preserving and managing the forests were working within a department whose primary aim was the expansion of agri-

culture and settlement, often at the expense of those same forests.

In 1906, the State Forests and National Parks Act created a situation unique in Australia, whereby pro-



Figure 1. Clearing for settlement. (DPI Forestry Library G1) ductive forests (state forests and timber reserves) were administered by the same organisation that administered national parks. By 1930, when the National Parks Association was founded by Romeo Lahey and other conservationists and bushwalkers, over 330,000 acres of national park had been declared in the state (Figure 2). The early parks movement in Australia and Queensland was influenced by issues of public health, recreation, and enjoyment, and was often eager to "improve" on nature in much the way that the acclimatisation societies aimed to improve the quality and variety of Australia's fauna and flora through the importation of ex-

otic species. By the late 1950s and 1960s, however, the concept of biodiversity was becoming more widely understood, and it was now recognised that an important function of national parks should be to "reserve permanently typical examples of all the main environments, including the less scenic" (Annual Report of Director of Forests 1963-64, 15).

What role did people play in national parks and state forests? The principle of "multiple-use," espoused since the 1930s, allowed for a range of activities besides timber harvesting within state forests, including grazing, bee-keeping, recreational pursuits such as horse-riding, and other ac-

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tivities. Although there may have been little recognition, or conservation, of cultural heritage, people were a common part of the landscape. National parks, on the other hand, were seen to be places for "retreat," where "the greatest charm ... lay in their primitiveness.... [A]ny development of the Parks should be based on the principle that they must be preserved as far as possible in that simplicity and unspoilt beauty that make them unique" (Anonymous 1969).

It is now widely recognised, of course, that this "unspoilt" quality so desired in national parks was never "untouched." The work of Pyne (1997) and others has clearly shown the extent to which the landscape of Australia was shaped by humans, in particular by the fire management regimes developed as part of Aboriginal land management. Fire exclusion, however, was the foresters' creed, and not until the 1960s did prescribed burning regimes come to be widely practised. It has taken time for a recognition that the country has been managed in some form or another for thousands of years, and that therefore "passive management of fauna and flora results in a decline in the conservation values of parks and reserves" (Baker and Mutitiulu Community 1996, 65).

After their separation from the



Figure 2. Field naturalists club, McPherson Range, 1918. (Environmental Protection Agency 11/28)

Department of Public Lands in 1957, state forests and national parks were the responsibility of the Queensland Forest Service until 1975 when the **Oueensland National Parks** and Wildlife Service was established. For the first time since 1906, national parks and state forests were managed by separate authorities. In the mid-1990s, the Forest Service underwent a series of changes leading to a situation whereby the Department of Primary Industries became responsible for the commercial aspects of forestry (plantations and native hardwood), and the Department of Natural Resources became responsible for the non-commercial aspects of state forests. Three government departments are now, therefore, responsible for the management of public forests.

The bureaucratic separation of aspects of forest management in many ways reflects concerns that a conflict of interest might exist if the managers of productive forests were also responsible for the management of national parks. It also reflects a desire to separate economic values of forests from the conservation or recreational values. If the conservation and production values of forests were seen as divergent, with the potential for conflict, it is interesting to consider where the cultural values of forests might fit.

Cultural Landscapes

By the 1960s, a conflict between natural and cultural values had re-

sulted from "the dominance of ecological criteria in the assessment of environmental values, and the broadening of our historical perception of landscape from isolated sites to whole cultural patterns" (Griffiths 1991, 17). Deep ecology and "wilderness" movements stressed the natural over the cultural and were, in one sense, "misanthropic" (Griffiths 1991, 18). The idea of "cultural landscape" protection, however, threatened to become the vehicle by which specialinterest groups could seek to promote exploitative and destructive land management practices (Frawley 1989; Russell 1993).

Although the idea of cultural landscapes is not new (see, for example, Ross 1996; Taylor and Tallents 1996; Lennon 1997) and derives from a long tradition of historical geography, the idea that cultural landscapes should be considered as part of cultural heritage management is a relatively recent phenomenon. Just as taxonomy and taxidermy gave way to dioramas and finally to the idea of community museums, and the study of individual species gave way to the investigation of complex ecosystems, site-specific heritage concerns have given way to the current recognition of the broader "landscape" within which heritage values reside. Characteristically, disciplines undergo such expansions of definition as levels of complexity and inter-connections with related disciplines are un-

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covered, and cultural heritage management is no different.

The World Heritage Committee adopted the concept of "cultural landscape" in 1992, and the Asia-Pacific Regional Workshop on Associative Cultural Landscapes (Australia 1995) "recognised that the consideration of properties of outstanding universal value needs to be contextual (recognising a place in its broader intellectual and physical context) rather than specific (as in the limited approach to viewing heritage solely as monuments or wilderness)" (ICOMOS 1995). Uluru Kata-Tjuta National Park in the Northern Territory is now included on the World Heritage List for its associative cultural values, in addition to its prior listing for natural values. The cultural landscape work undertaken in the Wingecarribee Shire located between Sydney and Canberra is a model for the identification, assessment, and management of historic cultural landscapes (Taylor and Tallents 1996).

The argument over cultural landscapes is by no means at an end, however. As recently as 1988, the Australian National Parks Council carried a resolution to "increase the awareness of, and provide a united opposition to, the continuing campaign by organisations promoting cultural heritage issues to incorporate into National Parks activities incompatible with the conservation of natural values" (cited in Griffiths 1988, 30). Given that many past settler activities within the landscape were exploitative or destructive (e.g., pastoral activity on marginal lands), maintenance of such practices in the name of preserving cultural landscapes is seen by many commentators as questionable (Frawley 1989)

The National Forest Policy Statement, Ecologically Sustainable Forest Management, and the Montreal Process

Forests are the subject of intense debate. In Australia, three-quarters of the forest estate is on public land, so any controversy over the use of the forests has powerful political dimensions.

In 1992, Australia endorsed a series of principles and objectives articulated at the United Nations Conference on Environment and Development in Rio de Janeiro. Agreements at this conference related to biodiversity, climate change, deforestation, and forest management, and the succeeding Montreal Agreement established criteria and indicators against which forest practices could be measured in order to determine the extent to which forests were managed in a sustainable way. The Commonwealth, states, and territories jointly signed the National Forest Policy Statement in 1992 and since then a series of RFAs have been initiated in Tasmania, Western Australia, Victoria, New South Wales, and

Queensland (Department of Natural Resources et al. 1998).

In 1998, a framework of regionallevel criteria and indicators of sustainable forest management covering national parks, state forests, Crown leasehold, and freehold land was developed and agreed to by the states participating in the RFA process (Commonwealth of Australia 1998). Three sets of indicators (the first immediately reportable, the other two requiring further research and development) will be used to report on the implementation of a national approach to sustainable forest management. Of the 37 indicators, 20 relate broadly to issues of biodiversity, water catchments, or ecosystem health. Six indicators relate to timber production and forest products, seven relate to socioeconomic forest values, and three relate to cultural values. Although 10% may not appear a representative number, the recognition of cultural values in overall resource management and planning is a key component of the process; indeed the Commonwealth is keen to stress that indigenous issues in particular are paramount. The current native title debate is recognised as relevant to this process and there is a recognition that "native title issues need to be addressed in implementing management strategies" (Commonwealth of Australia 1998, xii).

As part of the RFA process, Comprehensive Regional Assessments (CRAs) of environment, heritage, and socioeconomic issues (theoretically across all tenures) are meant to provide the framework for political decisions concerning the development of conservation reserves and the use of forests. Criticisms of the process certainly abound. According to the pre-eminent forest historian, John Dargavel, time constraints have severely limited the assessment process, indigenous rights have generally been ignored, and community consultation has been poor. Private land has been largely ignored in the process and the Montreal indicators on sustainability will be difficult to apply to freehold tenure. Finally, while the assessment process has been a visible one, the decision-making process, he argues, is "opaque" and prone to criticisms that decisions are the result not of scientific assessment but of political trade-offs (Dargavel 1998a, 28, 29).

Nonetheless, the RFAs constitute "the largest environmental planning and management endeavour in Australia" (Dargavel 1998b, 24). In environmental terms, the fact that cultural heritage has been incorporated in the identification and assessment phase is significant. Whereas historical data can be used to illustrate disturbance history and other forest processes (Lennon 1998, 40), the full range of interdisciplinary projects has not yet been fully realised. Still, for the first time in Queensland, natural and cultural values are being identified in

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a regional survey as part of the same process.

Comprehensive Regional Assessment—Cultural Heritage

The cultural heritage component of the CRA of Southeast Queensland comprised a series of reports, targeted field work, community workshops and consultation, and the development of a set of management guidelines and protocols to cover indigenous and non-indigenous cultural heritage values (Table 1).

The non-indigenous projects were undertaken by staff in the Department of Environment and Heritage, along with external consultants (Forest Assessment Unit 1998a and 1998b; Powell 1998; Kerr 1998). Field work in Southeast Queensland identified over 800 historic cultural heritage sites, of which 76 were considered of potential National Estate (NE) significance. Community workshops identified 455 places of social value, of which 25 were of potential NE significance (Figure 3). The study of places of aesthetic value considered 163 places, of which 47 were considered of potential NE significance.

The indigenous projects were managed by the three native title representative bodies responsible for areas within Southeast Queensland—namely, FAIRA (Foundation for Aboriginal and Islander Research Action), Gurang Land Council, and Goolburri Land Council. Indigenous

Table 1. Heritage values in the CRA of Southeast Queensland

Indigenous Cultural Heritage

- Data audit of known places of cultural heritage value in Southeast Queensland
- Management guidelines

Non-Indigenous Cultural Heritage

- Background contextual studies: Overview Thematic History, Travel Routes, Forest Towns and Settlements, Sawmills and Tramways
- Studies of potential National Estate (NE) significance: places of historic value, social value, or aesthetic value
- Management guidelines



Figure 3. Community workshop, Bundaber. (Environmental Protection Agency)

groups were not desirous to identify places for a variety of reasons, most notably because of concerns about confidentiality. Many of the sites of significance in Southeast Queensland are sacred and secret places and knowledge of them is retained by traditional communities. What limited archaeological survey work has been undertaken in the region has not always been done with appropriate authorisation from traditional owners and has usually been undertaken as part of the EIS (Environmental Impact Study) development process. Although communities are keen for cultural surveys to be undertaken,

they want to ensure that appropriate protocols are applied.

Management Guidelines (Non-indigenous and Indigenous)

The guidelines for the management of non-indigenous cultural heritage were developed by an independent consultant (Lennon and Associates 1998). A workshop of land managers from the three government departments responsible for forest management provided input. The conclusions of the process highlighted the need for:

• Further studies to identify cultural heritage places and make land-

scape assessments;

- A co-ordinated approach to heritage management; and
- Improved training of field staff in identification, assessment, and management of cultural heritage places.

Table 2. Specific principles outlined by indigenous communities during workshops

- Recognition of the holistic and evolving nature of Aboriginal cultural heritage and indigenous cultural landscapes.
- Preservation of native title rights.
- Acknowledgment of Aboriginal associations with forested land, whether that association is traditional or historic.
- Guaranteed access to places of cultural importance.
- Ongoing direct involvement in planning and management of forests across all tenures.
- Traditional stories, knowledge, and management practices influencing how the land and forest resources are cared for (because "clean water, fauna and flora, medicine plants and other resources are cultural resources").
- Expansion of plantation forestry in preference to logging native forests, especially if this can be done on cleared or degraded lands where cultural heritage will not be damaged.
- Management of cultural heritage places "as part of the whole forest landscape, and the spiritual, social, and economic environment in which they exist."
- Cultural surveys under the supervision and control of traditional owners.
- Identification and protection of cultural heritage of the forests, with surveys as part of long-term land use decision-making.
- Cultural clearances (i.e., approval by traditional owners) for development activity.
- Involvement of the appropriate people from an area in negotiation and management.
- Importance of forests in educating children and others about Aboriginal cultural heritage.
- Employment of Aboriginal people as part of this process.

Guidelines for the development of protocols and principles concerning the management of indigenous cultural heritage interests were also developed by an independent consultant (Sullivan and Associates 1998). A total of 34 formal and informal community workshops were held with indigenous communities throughout the biogeographic region and management protocols and principles were developed (Figure 4). Many of the issues raised by indigenous communities (Table 2) parallel those raised in the social values (non-indigenous) community workshops. Some of the views expressed by both communities correspond to developments at the theoretical level concerning cultural landscapes, social value and other broad cultural heritage issues.

Indigenous communities make no distinction between types of land tenure or the government department responsible for decision-making. Nor does flora or fauna. Forests rely on water; land and sea are indivisible. It makes no difference whether geographic or responsibility demarcations between government instrumentalities or agencies exist or not-indigenous communities see these as irrelevant. The boundaries that indigenous communities do recognise are geographic and natural; many of these have determined traditional land ownership or use.

It is easy to highlight differences in the approaches taken by indigenous and non-indigenous communities to cultural heritage issues. Indigenous communities are concerned with confidentiality and ownership issues regarding traditional knowledge, and with how to identify traditional owners and the "right" people with whom to negotiate. Non-indigenous communities are, in general, keen to identify sites and places and are less concerned with the release of such information.

Far more useful, however, is to recognise areas of similarity. There are many of these, reflecting perhaps the concerns of the broader community as regards heritage conservation.

- The need for a broad definition of • cultural heritage. At the non-indigenous community workshops, people identified "heritage" in its broadest sense (it was considered to be about "lifestyle," "leaving some of yesterday for tomorrow," "past and present," "education"). Similarly, indigenous people stressed the "holistic" nature of cultural heritage (it was considered to be about "land," "stories and oral history," "teaching children," as well as sites).
- Ownership issues. Heritage is seen as belonging to people; it is not separate or static. Indigenous communities see heritage as living; non-indigenous communities also

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see cultural heritage as an on-going process ("keeping alive the old skills"; Forest Assessment Unit 1998b, 183). Cultural heritage places often are best preserved through use—as the non-indigenous guidelines plead, "Don't turn it into a museum ... if it's a building use it, get some one to occupy it and care for it" (Lennon and Associates 1998, 42). Ownership and context are connected.

- Recognition of both expert and community knowledge. Expert and specialist knowledge is welcome, but not when it is imposed from outside or is out of touch with community perceptions. This is not to suggest that expert opinion cannot influence communities—indeed this happens commonly. But the relationship needs to be a negotiated partnership.
- **Co-ordination**. Communities seldom take into account artificial or governmental boundaries, even when they fully understand them! There is broad community support for better co-ordination between government departments and communities.
- The need for community involvement in management and planning. This is commonly stressed at all levels.

Other Regional Models of Cultural Heritage Management

One of the aspects of the RFA process in Queensland that appears to provide the most useful prospect for future planning and management of land is the interdisciplinary nature of the environment assessment (including both natural and cultural values) and the regional approach involving a range of government departments. In both these instances, however, there is much to be learned from indigenous communities. Two recent examples in Southeast Queensland show how indigenous communities can provide excellent lessons in the co-ordination of natural and cultural heritage management.

Quandamooka. The area known as Quandamooka includes Moreton Bay, the islands of the bay, and everything within it. Aboriginal people of Quandamooka have lived and managed the sea and land resources there since the beginning of time. To the people of Quandamooka, cultural heritage is "the sustainable use of the resources of the land and waters that make up Quandamooka.... An impact on one element of Quandamooka adversely affects other components of Given that the system.... the management of food resources is a significant element of Quandamooka heritage, cultural heritage management therefore requires conservation of the catchments of that resource" (Ross and Members of the



Figure 4. Indigenous workshop, Landsborough. (Environmental Protection Agency)

Quandamooka Aboriginal Community 1996, 1, 5). In 1998, the Quandamooka Land Council established the Quandamooka Land and Sea Management Agency. The key objectives of this agency are: maintenance of a clean and healthy environment, recognition of the Quandamooka community as indigenous custodians in a modern world, and maintenance of a unique lifestyle (QLSMA 1998).

The agency takes what it calls a "bottom-up" approach to resource management, and promotes the concept of collaborative management of all resources within an integrated catchment area. The guiding principles upon which the agency operates are almost exactly the same as those enunciated by indigenous communities during the RFA process-namely, native title, connectedself-determination, evolving ness, process, future generations, participation, common ground, unity of purpose, negotiation, expertise, social and economic development, living culture, and respect for others.

Currently, members of the Quandamooka community are involved in environmental monitoring programmes with the Brisbane River Management Group. These include water quality monitoring and assessing how water quality affects seagrass levels and therefore dugong numbers. Community members are involved in the identification of endangered freshwater and marine creatures.

Fitzroy Basin. At the other end of Southeast Queensland, similar moves are underway to develop organisations that can monitor the heritage of the Fitzroy River catchment.

Over the last few years, the Queensland Mining Council, the Australian Heritage Commission, and the Department of Environment and Heritage have jointly sponsored the in-

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volvement of Aboriginal groups within the Bowen Basin area in the identification and protection of cultural heritage sites (Brown, Godwin, and Porter 1998). The Bowen Basin is rich in mineral products and numerous development projects are either underway or planned. Previous archaeological work in the area, undertaken as part of Environmental Impact Assessments, had solicited little or no involvement from Aboriginal communities. Since the advent of native title, there is "a legal basis, founded in both common and statutory law, for involving Aborigines above and beyond other interest groups (e.g., conservation groups) in the planning process" (Brown, Godwin, and Porter 1998, 400).

In 1997 an Aboriginal Steering Committee was established to undertake a range of tasks relating to cultural heritage work, and in the course of this work it became clear that "there was a real need for a strong body of elders to continue the regional dialogue with other resource users about resource management problems" (Gummoowongara Newsletter 1998). The Fitzroy Basin Elders Committee has been the result. Their concern is "to make sure that the land, the rivers and all of the natural and cultural resources of the Fitzroy Basin are managed properly for all future generations" (Gummoowongara Newsletter 1998). The priorities of the Aboriginal communities within the Fitzroy Basin are no different from those articulated by the people of Quandamooka, or by the communities involved in the RFA process. They include:

- Involvement in key regional planning activities;
- Protection of cultural heritage;
- Keeping the waters and the environment healthy;
- Responding better to new developments;
- Resolving native title conflicts; and
- Improving social and economic conditions for the community.

Conclusions

The RFA processes underway throughout Australia are a response to political controversy at the International, National, and Regional levels. Despite the difficulties of reaching agreed solutions to the problems of forest use, some of the processes undertaken along the way may provide positive models for future land and resource management.

Indigenous communities have a holistic view of their environment and do not separate cultural, environmental, social, or economic issues. In many different places and through a number of different processes, indigenous communities are articulating this view and attempting to work across what they see as artifi-

cial boundaries. The adoption of a "catchment" or "natural boundary" approach to resource management is one that the broader professional community could usefully adopt.

A regional resource approach that recognises and welcomes community input is the one most likely to succeed. Whether state forest or national park, management that includes local people will safequard the broad cultural heritage values within those boundaries. Conflict will never be entirely removed from the management of protected areas, and differing views will always exist on the balance between cultural and natural values, whether they be on the question of indigenous hunting in national parks (Ross 1994), the presence of historically significant pastoral activity (Frawley 1989; Griffiths 1991), or the presence of exotic vegetation associated with important past activities. But without community involvement, any such conflict will be exacerbated.

Cultural heritage is, itself, a cultural construct and as such it should come as no surprise that changing concepts of our heritage parallel changes in other aspects of society and culture. Multiculturalism, reconciliation, and native title are just as likely to influence our understanding of cultural heritage as concepts of ecology and biodiversity will influence our understanding of natural values. Cultural and natural heritage practitioners are learning to expand their horizons and are developing broader concepts of the interface between nature and culture. Indigenous and many non-indigenous communities already know this.

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Archaeology and Rocky Mountain Ecosystem Management: Theory and Practice

he benefits that could be obtained by a collaborative relationship between archaeological sciences and ecosystem management principles are only just beginning to be realized. Examination of current applied and theoretical directions reveals common concepts that need to be developed more firmly, at the same time that archaeology needs to express more confidence in its potential contributions as well as be more explicit about its limitations. Examples of archaeological knowledge applied to ecosystem issues in the Canadian Rocky Mountain National Parks are discussed here, indicating where substantial research is yet required.

Issues

Having legislated in 1988 the priority of ecological integrity in all management decisions, Parks Canada is now engaged with creating fundamental principles and standards regarding management of national parks ecosystems. I discuss here four topics central to the ongoing debates, focusing on the role that archaeological research can play. The principal topics are:

- Natural regulation versus adaptive management of the environment;
- Factoring past human interactions with the environment into contemporary management practices;
- Understanding historical variability in ecosystems; and

 Employing historical and archaeological research in a multidisciplinary context to contribute to ecological integrity.

Background

Ecological management of national parks can take two extremes: allowing "nature to take its course" with no active human management, or intervening constantly and deliberately to maintain a "slice in time." Within our national parks system, we have examples approaching each of these extremes. In between them is a tremendous range of practices and philosophies. There are, for example, many instances of various practices aimed at restoring communities, structures, or processes. The variety of management options we apply derive from real management needs as

well as political realities.

There is in our day no escaping the need to employ all our resources to understand ecosystems. A recent article in *Science* (Vitousek et al. 1997) reports that humans have modified one-third to one-half of the Earth's surface, carbon dioxide is up 300% since the Industrial Revolution, and humans use one-half of all fresh water. The paper concludes by stating that "there is no clearer illustration of the extent of human dominance of Earth than the fact that maintaining the diversity of 'wild' species and the functioning of 'wild' ecosystems will require increasing human involvement" (Vitousek et al. 1997, 499). This applies to our Rocky Mountains—without specific active interventions, they will suffer considerably; and this we know since previous interventions such as fire suppression have greatly contributed to the ecological problems the parks now face.

DeLeo and Levin (1997) state that, "in managing ecosystems, the goal should not be to eliminate all forms of disturbance, but rather to maintain processes within limits or ranges of variation that may be considered natural, historic, or acceptable." This appears to be the goal of Parks Canada's "ecological integrity" policy, a key component of which is to manage contemporary human disturbances. In Parks Canada's *State of the Parks Report* (1998), "ecological integrity" is defined as "the condition of an ecosystem where the structure and function of the ecosystem are unimpaired by stresses induced by human activity, and the ecosystem's biological diversity and supporting processes are likely to persist" (Parks Canada 1998, 23).

Yet we really do not know how resilient the mountain ecosystems are to human disturbance. There must have been some variation in the past—climatic, human, catastrophic, or all of those. Can we tell? The potential of archaeology and the paleosciences to contribute meaningfully to ecosystem management, I believe, lies in part in their ability to describe "baselines" at different points in time, points in time for which humans are a significant component. From these baselines the effects of human influence, and of natural occurrences, can be charted against particular locations, species, or systems, using more precisely documented data available for more recent times.

Mountain parks ecosystem managers have proposed significant interventions to manage wildlife and vegetation. Employing background literature studies and computer generated models, key actions are being advanced as the most feasible, and representing the least public risk, for elk population reduction, carnivore enhancement, and vegetation renewal. Archaeological information has been used in studies undertaken

by biologists and figure prominently in their conclusions, but the cultural information employed in these studies and models requires proper consideration of the roles of aboriginal peoples in past landscapes, of the limitations of the archaeological record, and an awareness of the nature of paleoenvironmental knowledge.

There is, for example, excellent anthropological evidence for Aboriginal burning in mountain environments of Alberta and British Columbia. This evidence is not voluminous but it is fairly extensive, ranging from the southern east and west slopes of the Rockies to the northern east slopes. The literature points to aboriginal burning of many different kinds: fires to encourage certain fruiting bushes, to encourage ungulate forage, to drive animals for hunts, or accidental fire from camps. Any or all of these would account for the "mosaic" observed in times past, but direct evidence of Aboriginal fires is, in fact, slim. Vegetation managers are making great use of proxy data: changes in fire regimes as indicated by tree ring studies, macrocharcoal in pollen cores, and so forth. There are three main problems here. First, attributing agency to the fire patterns is extremely difficult. Biologists and archaeologists are limited to inference, no matter how strong—we are lacking the smoking torch. Second, to date very little direct consultation with local aboriginal people has taken place about past burning practices. Third, interpretations of the 13,000-year-old pollen record are remarkably coarse and finer resolution is required to illuminate patterns or events at the 10- to 100-year level. The dendrochronological record that forest managers of the mountain parks use to infer aboriginal burning patterns is only 600 years old at the most.

Kay's Theory of Aboriginal Overkill

As a prime example, I will focus on the faunal management hypothesis held by Charles Kay (Kay 1994; Kay, Patton, and White 1994; Kay and White 1995), that aboriginal people "overkilled" elk in the mountains and were responsible for the apparent low ungulate population levels witnessed by early explorers of the West. This is highly debatable. It may on the surface appear that elk population levels were low, but there are several difficult problems in need of further investigation before this "overkill hypothesis" can be taken seriously:

- 1. Why did the elk populations not recover following the drastic decline of aboriginal populations in the early historic period?
- Why does the archaeological record not show an "overkill horizon"? If native people were killing elk in this manner, where are the bones?
- 3. Did early European hunting, or the introduction of horses, sig-

nificantly modify the environments employed by elk?

4. How can taphonomic effects be accounted for in the archaeological record that Kay cites? The different ways that people processed bones, in different places, for different reasons, in different times of the year, and the different depositional regimes in which they have lain, all have considerable effect on what we see today.

Now, I do not have the degree of faunal expertise that Lyman does—expertise that he used in his remarkable study of mountain goats and national parks policies in the Olympic Mountains of Washington state (Lyman 1995)—but, taphonomic effects aside, let us examine the Rocky Mountain faunal data from an archaeological perspective.

I had two graduate students with faunal analysis expertise re-examine the archaeological literature from the eastern slopes of Alberta and the mountain national parks and tabulate the evidence available. We derived conclusions at odds with Kay and his co-workers. From 49 sites in western Alberta and eastern British Columbia, some with multiple components, a total of 401 bison MNI (minimum number of individuals) are apparent and 54 elk. If we look at the three mountain parks and one national historic site in Canada with preserved faunal remains, including some sites that Kay et al. (1994) did not examine, the pattern is guite different from what one would expect from their findings: 125 bison MNI compared with 74 elk MNI (Table 1).

Given that we know bison were extremely populous and were the ungulate mainstay of this part of the world, and also given the robusticity of bison bone, the pattern shown above in fact indicates substantial elk populations as well. Kay (1994) may

Location	Bison MNI	Elk MNI	Ratio
49 sites in Western AI-	401	54	7:1
berta and BC			
Waterton Lakes NP	54	9	6:1
Banff NP	34	16	2:1
Jasper NP	2	13	1:7
Rocky Mountain	35	36	1:1
House NHS			
TOTAL	526	128	4:1

Table 1. Comparison of bison and elk MNI in the Canadian Rockies
believe that the evidence points to Aboriginal overkill of elk (and moose), but the archaeological record is not at all clear on this point. It may simply be evidence of bison outcompeting elk in certain environments, of differential bone preservation, or of other causes.

Kay (1994) cites some 1,600 archaeological reports from the mountains and eastern slopes as evidence of his overkill hypothesis, yet beyond the questions posed above, there are other problems with taking archaeology at face value as a source of ecosystem knowledge. These are problems that can be overcome in some instances, but one needs the awareness that they exist, not some naïve gathering of data that appears to support one's theories.

Archaeological sites are far from perfect records. If we look at what is desirable in archaeological sites for ecosystem reconstruction purposes and compare it with what is normally found, we have something like the discrepancies outlined in Table 2. Kay's studies and our own show that by far most of the bone to be found in the sites he examined is fragmentary and unidentified. Maybe it is elk? We have started work on DNA to see if we can tell. When my students looked at the Parks Canada data, we found that most faunal remains had never even been analyzed and that some had been misidentified.

At the regional level, most of the archaeological reports that Kay examined were consulting reports describing small-scale, linear projects. Very few regional studies have been undertaken in Alberta's mountains or Eastern slopes. In addition, many sites outside the national parks also have faunal remains that have never been examined. When fairly large projects have been undertaken, the guestions asked of the faunal data are those of interest to archaeologists. not to ecosystem managers, and that influences how the data are gathered in the first place. All of these constraints impose serious bias not

Desirable	Normal
Stratified	Single Component or Mixed
Bone samples	Stone only
Identifiable bone	Fragmentary bone
Pollen	No preservation
Dendrochronological wood	No preserved wood
C14 Dates	No dates or artifact types, estimates only

Table 2. Characteristics of archaeological sites

only on interpretations, but also on how anyone else can use those results. Table 3 outlines what we would like to have available for regional archaeological evidence and what is the norm.

One of the constraints with the regional archaeological evidence is in the kinds of sites archaeologists choose to investigate. These are biased, in the case of the mountain parks, toward relatively large, valleybottom campsites that probably represent late-summer-to-fall occupations. We do not have representative assemblages for other seasons.

Traditional Knowledge in National Parks

A key component of ecosystem archaeology should be traditional environmental knowledge held by aboriginal peoples. To include such knowledge is, however, quite rarely done in Canada's Rocky Mountains. Although there is increasing collaboration by government, academic, and private archaeologists, the state of information concerning aboriginal knowledge of mountain ecosystems is rather poor.

Traditional environmental knowledge of aboriginal peoples with respect to the Canadian Rocky Mountains has not been systematically attempted. Traditional environmental knowledge is only occasionally regarded as a potential management tool in the mountain parks, but is an accepted and useful component of land management in the Northwest Territories and Yukon, and, increasingly, in British Columbia. A study being completed at Waterton Lakes is the only comprehensive one ever undertaken in the Canadian mountain parks. The Waterton-Glacier Ethnoarchaeological Project by B.O.K. Reeves has resulted in a much-improved picture of Blackfoot land uses and interests there, with a focus on plants and ethnogeography. Kootenay National Park's current environmental history study includes consultations with Ktunaxa Elders concerning ungulate history and plants, and has grown to include Ktunaxa involvement in prescribed

 Table 3. Characteristics of regional archaeological evidence

Desirable	Normal
Well-described settlement and sea-	Biased settlement pattern repre-
sonality patterns	sentation
Representative universe sampling	Linear projects
Judgmental sampling	Biased sampling
Good knowledge of human popula-	Sketchy culture histories, ambigu-
tion interactions and regional envi-	ous reconstructions of environ-
ronmental effects on humans	mental effects

forest burning. The Stoney, Sarsi, Metis, Beaver, Slave, and Cree people of western and northern Alberta should also have significant contributions to make to our knowledge of ecosystem processes in the mountain parks.

Table 4 points out that we have a ways to go in integrating traditional environmental knowledge with park management. The ethnographic record is useful, but in some cases very limited to what the particular observer was interested in recording. I think it is also worth mentioning that progress with traditional environmental knowledge would have benefits beyond ecosystem management. Working together would enhance mutual relationships and serve to help preserve knowledge that is in danger of permanent loss. Dedicated research into traditional environmental knowledge may also show us where it has its limits, which is worth keeping in mind since we need to realize that a traditional way of doing something may not in fact be the best way of managing today. As Hunter (1996) has expressed it, how to apply knowledge of aboriginal management methods depends on what our objectives are: lighting fires to drive game is not the same objective as lighting fires to encourage aspen growth.

The question indeed largely remains: What roles did aboriginal peoples and early Europeans play in shaping the mountain ecosystem? Certainly, both groups were an integral part of it. But whether they had long-lasting but small-scale effects, large-scale and long-term effects, or temporary local effects are all questions we can only have opinions on at the present time.

There are positive aspects to cultural systems as environmental proxies, though, that we should learn to make the most of. Gunn (1994) points out that cultural systems can respond more quickly to climatic change than can some biological systems such as forests—there is no time lag. Cultural responses may

 Table 4. Characteristics of aboriginal relations and traditional environmental knowledge in Rocky Mountain national parks

Desirable	Normal
Traditional environmental knowledge well studied	Poor or no traditional environ- mental knowledge
Traditional environmental knowledge has direct links to archaeology and ecosystem research	Late-19th-century ethnographic data only
Close relationships with First Nations	Fair relations

be better indicators of change than pollen diagrams. Some of these responses may be captured in prehistoric patterns we see but don't recognize as such. Other patterns may be captured in knowledge retention, particularly in societies that have been in place for a long time. Examples here are Haida stories about moving across grassy areas, walking between villages that are only accessible by water now, or of moving villages when waters were rising—situations occurring 12,000 to 6,000 years ago.

What to Do?

To identify alternative models of human-environment dynamics within the larger Rocky Mountain ecosystem requires a thorough multidisciplinary programme involving the body of scientific and historical disciplines that relate to population and community dynamics—biology, ecology, anthropology, history, and archaeology. A professional workshop has been held recently to frame the key management issues within an understandable perspective and to begin testing models with regards to a longer-term perspective. Forty people came together in Jasper National Park to offer 29 discussions over three days, covering topics ranging from bison fat to marsh sampling to highway impacts. This workshop sought to reach agreement on what is "natural variation" and how this was represented in the past. It helped to delineate the bounds of our knowledge to provide focus for work in areas where information is lacking. The workshop concluded with three main recommendations:

- 1. **Policy.** There is a recognized need for development of policy in the area of recognizing human influences on ecosystems through time.
- 2. **Aboriginal peoples.** Mountain parks should make greater efforts to work with aboriginal groups towards ecosystem management goals.
- 3. **Communications.** At all levels, from senior management to the general public, more communication is required regarding what research is taking place, and why.

The mountain parks need to develop a long-term multidisciplinary research strategy to address the role of humans in the mountain ecosystem over time. This would involve:

- Working with other ecosystem researchers, historians, and park managers to identify the research questions of most pressing common interest, and to identify our knowledge gaps;
- Reviewing known archaeological site information to identify key sites with the potential to address such questions;
- Carrying out archaeological site surveys to identify new sites for time periods or environments of

interest where there are no known sites,

- Carrying out multidisciplinary excavations at selected sites;
- Analyzing results focusing on changes or lack thereof in human-ecosystem interactions through time; and
- Integrating results with other ecosystem specialist studies, and integrating results into natural and cultural resource management practices.

In several cases we are doing exactly some of those things. Archaeologists in Banff National Park have searched for and found sites with clear strata and identifiable ungulate bones; near Kootenay National Park waterlogged deposits have been found that contain an unusually rich assemblage of carnivores, ungulates, and fish remains. What we are lacking is an explicit strategy to integrate the entire suite of interests with the overriding objective of ecological integrity.

Conclusions

A key issue in parks management is the mediation of human recreational use and impact with biodiversity and ecological integrity. With the growth of public utilization of park resources, the importance of addressing the interrelationships of cultural and ecological systems will only increase. Archaeology and history are in a good position to situate human cultural systems within a more expansive environmental and ecological understanding. With such an understanding, it is possible to make more informed management decisions with regard to public impacts within a national park environment. Current trends in both ecosystem sciences and archaeology have made the time ripe to allow meaningful collaboration. Just as ecologists have tended to view humans as "stressors" on ecosystems, archaeologists have been guilty of viewing ecosystems as "conditioners" of human adaptation. We need to step outside of our disciplinary straitjackets to find solutions, and we need to teach developing professionals how to do so as well.

What should not be ignored in our efforts is what I consider to be highly misinformed criticism of aboriginal peoples' relationships with the environment. A recent Toronto Globe and Mail article (Widdowson and Howard 1998) entitled "Natural stewards or profit-makers?" is subtitled "Aboriginal peoples haven't lost their spiritual bond with the land: they never had one." The principal argument is that aboriginal people have knowingly made poor decisions or profit-oriented ones in certain instances where they have asserted their prerogatives. It is true that aboriginal people are people and that mistakes will be made, but that is not the issue with respect to their culture's long-term connection to the land. It is also true that aboriginal

people no longer live by "stone axes and snowshoes" and that contemporary resource extraction and management require contemporary solutions. But by using the alarmist method of generalizing a few cases to the entire situation, this kind of critical approach ignores the bulk of traditional knowledge, the widespread respect that aboriginal people do show for the land, and the many instances where they have opposed damaging resource management practices.

The establishment of baseline criteria for ecological integrity purposes requires very firm and defensible information on the relative stability, agents of change, and natural variability in the mountain ecosystem. Proper evaluation and application of the evidence require team approaches with full awareness of inherent scientific and cultural biases.

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Harold Mytum

History, Politics and Culture: Archaeology and Interpretation in British National Parks

hen national parks were established in England and Wales, their roles were defined as "preserving and enhancing the natural beauty of such areas and promoting their enjoyment by the public" (National Parks and Access to the Countryside Act 1949). In this regard, the assumptions behind the setting up of national parks were similar to that in North America. National parks in Britain are unusual in a world context, however, because the areas within their responsibility are not publicly owned. This has clearly restricted their ability to carry through policy, but has perhaps made them more sensitive to local as well as national public opinion. It is significant that the preserving and enhancing of natural beauty was placed alongside promoting enjoyment by the public.

The brief of national parks was to protect largely upland and agriculturally marginal areas. The basic assumption that these were largely untouched, and represented areas with limited human impact, was quickly challenged, but it took some time before the archaeological as well as the historic built environment was incorporated within policies. During period, the the same greater availability of private transport, increase in leisure time, and the widening range of outdoor activities carried out in the parks led to a redefinition by the National Parks Review Panel in which the roles should be "to protect, maintain and enhance scenic beauty, natural systems and land forms, and the

wildlife and cultural heritage of the area," but also "to promote the quiet enjoyment and understanding of the area insofar as it is not in conflict with the primary purpose of conservation" (Edwards 1991). The role of conservation had become dominant in British national parks, linked to their planning role.

National parks now operate under rather different conditions from those prevailing at their founding, and have a range of planning responsibilities which dominate much of their budgets and attention, and which have been recently extended with the latest bout of local government reorganisation. Nevertheless, the twin themes of conservation and interpretation play a part, particularly as all

the parks are heavily tourist based. With the apparently inexorable decrease in upland agricultural incomes, tourism is becoming the major factor in the economy of some national parks, and in all the need to encourage but yet control and manage visitor numbers is a critical responsibility. It is within this context that provision of and interest in archaeology needs to be considered.

Archaeology is a recognised issue in all national parks, and all but one employ an archaeologist to cover the subject within the authority (and that one exception has several archaeologically trained employees on its staff). The role of archaeology has some common threads over all national parks, but as one moves away from the most central and statutory requirements, then devel-opments relate to interests and opportunities seized by individuals, and links to other organisations and individuals.

Education has increased in importance within national parks, as this has been seen as a service needed and acknowledged by the community. Planning controversies can often lead to the parks appearing bureaucratic, uncaring, and against the individual and local community, but education helps to give the parks a positive image. Archaeological material figures in many programmes, but is often subsumed within other subjects which are specifically targeted within the national curricula.

Planning

The statutory requirements within the planning process absorb a great deal of the attention of the English national park staff, including that of their archaeologists. In Wales, the situation is slightly different, with the local archaeological units being responsible for planning control, with the Gwynedd Archaeological Trust, for example, providing the service within Snowdonia National Park, Cambrian Archaeology (formerly the Dyfed Archaeological Trust) giving such a service to the Pembrokeshire Coast National Park, and the Clwyd-Powys Archaeo-logical Trust advising the Brecon Beacons National Park. It is worth noting that within all these the parks various educational initiatives have proved possible, whilst they have been achieved in a more limited extent in most English authorities.

Many upland areas have been long recognised as repositories of great archaeological riches, but few largescale academic landscape studies have been undertaken in recent years. The most notable exceptions are those by Fleming on Dartmoor and in Swaledale in the Yorkshire Dales (Fleming 1988; 1998). The Royal Commissions have already covered some key areas (Taylor 1991) but modern methods of aerial, surface, and geophysical survey now allow far more sites to be identified, accurately

located, and non-destructively investigated.

In order to be able to carry out the planning control, particularly for extensive threats such as forestry, national park archaeologists in both England and Wales have often commissioned surveys of the archaeological resource to augment that already known. This has often involved funding from English Heritage and Cadw respectively, and has been carried out by the Royal Commission staffs, contracted archaeologists, or employees of the National Parks. In every case, large numbers of additional features have been found, ranging from Mesolithic flint scatters to World War II relics. These are then incorporated within management plans as well as local Sites and Monuments Records and the National Monuments Record. Whilst these may have a research and educational role, they are primarily used for landscape management and planning guidance. An example of survey increasing the number and range of known sites can be indicated by the work on the Brecon Beacons. The common of Mynydd Illtyd covers 625 acres, and systematic field walking increased the number of known sites (Dorling 1991).

Whilst British legislation emphasises sites in the preservation process, and many archaeological remains are scheduled ancient monuments within national parks, there is less protection for landscapes. Some areas including archaeological remains have gained some protection, however, as environmentally sensitive areas or sites of special scientific interest (White 1991). Management agreements with farmers, often with payments attached, have also provided a solution.

Conservation and Interpretation

Archaeologists have been closely involved in the conservation of major monuments within the national parks. These projects may have also included substantial elements of detailed survey, buildings recording, or excavation, or may have involved less primary study and only an input into the design and management of schemes.

At the Roman military camps at Cawthorne, Yorkshire, North attempts interpretation are at constrained by concerns over conservation and visitor management. This is a site purchased and cleared of regenerated woodland by the North York Moors National Park to ensure the most effective protection for the excellently preserved but fragile earthworks. A car park for only 20 cars some distance away minimises visitor impact, and for part of the visitor trail. Terram, a permeable membrane, has been used to minimise wear (Cartwright 1991). The site is regularly monitored and

measures taken to minimise degradation by both animals and people, and vegetation control is by both sheep-grazing and handspraying of chemicals (Lee 1994). A wide range of erosion prevention strategies have been employed in the Yorkshire Dales on sites of various periods and character (White 1994).

Industrial archaeology, particularly for quarrying and mining, abounds in the upland areas of Britain. It is therefore not surprising that some of the most extensive, and expensive, conservation and interpretation projects by national parks have been in this field. It is with the industrial heritage that it has been most easy to obtain interest and resources to combine archaeological conservation, research, and interpretation. Industrial monuments can be stabilised and displayed in a resilient state and can withstand at least small numbers of visitors. Moreover, many are located in locations that can combine other experiences expected from a national park: spectacular scenery, (at least apparent) isolation, and a confrontation with nature and the elements. Some such sites have been taken into guardianship by organisations such as English Heritage and the National Trust, but others are managed by the national parks themselves.

In Snowdonia National Park, excavation and consolidation have taken place on sites as different in date as Iron Age iron smelting structures and water-powered pumping and winding engines, and the Clydach ironworks in the Brecon Beacons was relatively early example of а consolidation on some scale (Wilson 1988). The charcoal-fired iron smelting furnaces with bellows powered by a water wheel at Duddon have been excavated, conserved, and displayed. Here, Lake District National Park obtained the site on a 50-year lease, and has sensitively carried out work but does not wish to encourage mass tourism (Lowe 1991). Management agreements have been negotiated with land-owners in the case of three lead smelting complexes, including the Old Gang and Surrender mills in the Yorkshire Dales National Park, and English Heritage has grant-aided consolidation (White 1989).

With stretched staff and financial resources, and an archaeological record both diverse and often fragile, the presumption is for preservation and no interpretation. Only key sites such as those discussed above, can be accorded sufficient attention to be resilient to attrition caused by visitors. So, recent research by Kingston (1997) has shown why Lake District National Park considers that no element of interpretation should be given to indicate the location, nature, and extent of the famous Neolithic stone axe guarries and working areas at Great Langdale. The quarry faces,

and the huge screes of debris, including rough-outs and waste flakes, are under threat from walkers others Of the and unaware significance of the site, but it was felt that any on-site or nearby notices would only attract more visitors and potential collectors. Interpretations that identify places of past human activity within the wider cultural and natural landscape are rare in national parks because of the density of visitors, and the fact that these sites often lie on private land where farmers are attempting to run viable businesses. The problems of erosion of archaeological deposits on open moorland are widespread in the parks (Griffiths 1994).

National parks have tended to avoid ownership of archaeological monuments, with all the management and interpretation responsibilities that this entails. Apart from some of the industrial sites described above, the most notable exceptions are both in Pembrokeshire Coast National Park. Here, the medieval and Tudor stone castle at Carew, and the Iron Age fort with adjacent Roman native farmstead at Castell Henllys (Figure 1), are both crucial parts of the park's publicity and identity (Pembrokeshire Coast National Park 1999). Both also play important roles in educational provision, and are discussed further under that heading below. Moreover, they are also interpreted for the general public,

with facilities to cope with many thousands of visitors each year.

At Carew Castle, a range of standing remains are available for inspection, together with a famous early-medieval cross and a postmedieval tide mill. Archaeological excavations were carried out during the 1980s to discover the early history of the site and as a planning condition prior to the construction of tourist facilities, including toilets (Gerrard 1991). These have now been completely covered over, however, and so their contribution to the understanding of the site has not been as great as they might have been. Despite being a multi-period site, the castle interpretation is primarily concentrated on the early Tudor period; having a Welsh origin, this dynasty of British monarchs links local, Welsh, and British interests, and thus appeals to a wide range of visitors (Davis 1987).

Castell Henllys Iron Age fort had already been operating as a tourist attraction, in conjunction with archaeological research and training excavations, prior to its acquisition by the national park. The style of interpretation has changed radically, and has resulted in greater investment in high-quality display panels along well-managed routes, though at the loss of flexibility and personal engagement between owner and visitor (Mytum 1999a). Excavations have continued (Mytum 1999b), with



Figure 1. Castell Henllys is an Iron Age inland promontory fort with substantial defences, well-preserved evidence of internal occupation and buildings, and a monumental gateway of stone.

the result that they play an important part of the summer period attractions, when most tourists (as opposed to schools) visit the site. Here, the linking of a project run by the University of York and the national park has allowed a large-scale project to have the continuity of planning in terms of facilities, access, and resources. This has involved the park in relatively little expense, as the research institution and principal investigator obtain most of the resources and undertake the administration of the project. The archaeological expertise has also

been vital in the interpretation of the site and reconstruction of buildings on the site, continuing the work of the previous owner. As a result of this collaboration, the richness of the information, and the diversity of experiences gained by all sorts of visitors, Castell Henllys won the Heritage in Britain award at the 1996 British Archaeology awards (Figures 2, 3, and 4).

As part of the conservation ethic, research excavation is not generally encouraged within national parks, a policy also supported by English Heritage and Cadw. There have,



Figure 2. Archaeological excavations at Castell Henllys.

nevertheless, been several notable excavations within national parks which have often involved associations with the organisations, and these have had valuable benefits for interpretation. Projects which have not involved substantial direct national park input have been excluded here.

The first notable research excavations which incorporated and then led to even greater interpretation were at Royston Grange in Peak National Park, where a long-term investigation of a particular farm was undertaken over many years by the Sheffield University, and resulted in a detailed understanding of this element of the landscape (Hodges 1991). This resulted in the Peak Park taking into ownership some of the land, and the selling off of other parts with legal conditions on its management to ensure preservation of the identified archaeological resource and access for education

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Figure 3. The Iron Age chevaux-de-frise (arrangement of small standing stones) defences, preserved under a later defensive earthwork at Castell Henllys, is the only excavated example in Europe and is now on display to the public.



Figure 4. Reconstructed structure at Castell Henllys.

and research (Smith 1991). The archaeological research highlighted the significance and potential of the site, and led to its incorporation within direct national park management. The use of a small number of low-level interpretation panels, and some building plans recovered from excavation visible on the surface, are results of this collaboration.

The Royston Grange research project has ended, but Sheffield University has begun another collaborative project with Peak National Park at Gardom's Edge. Here again, interpretation is an important element. In this case, access can be most easily gained via the Web site on the excavation (Sheffield University 1999).

Archaeological interpretation at a more general level is present in the literature for many of the parks, but is often merely the noting of sites of interest on suggested walks, such as lime kilns and promontory forts on Pembrokeshire Coast National Park's footpath guides, or within the context of general tourist literature. Most national park archaeologists have neither the time nor the specific training to interpret for the public. As the only professional archaeologists in isolated regions, however, they are often asked to identify or comment on finds made by local people of artefacts and structures, and many are involved in the support of local amateur groups.

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Education

Interpretation specifically for children is an aspect which has become increasingly important within national parks. To justify funding and to ensure sufficient demand from schools with limited time to give within a compressed curriculum, resources offered are closely linked to specified educational requirements of the national curricula for England and Wales. Within this context, archaeology can be found within the history curriculum, but can also be relevant in other subject areas, such as local studies, which link to geography, geology, and the environment.

Some national parks have a range of facilities for all age groups, though any archaeological element is often only available at keystage 2, because of the curricula. Lake District National Park offers units, lasting a



Figure 5. School party visits the excavations at Castell Henllys, with explanation by a national park guide.



Figure 6. Excavation of the Iron Age gateway at Castell Henllys, which the Pembrokeshire Coast National Park intends to interpret with a full-scale *in situ* reconstruction/simulation.

half or whole day, at the primary and secondary level, and for more advanced students in further and higher education. The range of current modules can be seen on the Web, with the Discovery walks for keystage 2 including a valley such as Borrowdale, contrasting two valleys near Glenridding (including much industrial archaeology), or considering the context of Lake Windermere. All incorporate a mixture of natural and human impacts on the landscape over time (Lake District National Park 1999).

Northumberland National Park has many assets, such as Hadrian's Wall, within its area, but many of its features are well maintained and interpreted for the public and school

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parties by English Heritage (1997). The park has concentrated on landscape issues, linking art, geography, history, and literacy in programmes for keystages 2 and 3 which contain, to varying degrees, elements which are archaeological (Northumberland National Park 1999).

Those sites owned by national parks where research excavation and interpretation have taken place have often been given particular attention with regard to education. This has been externally recognised in a number of awards, such as the Virgin Award at the British Archaeological Awards, given for Castell Henllys in 1996, and the McGregor Award for contribution to environmental education, given for the Gardom's Edge excavation in the Peak District in 1999.

At Castell Henllys, investment has been on a significant scale, with a purpose-designed education centre (Anonymous 1994) and the provision of full-time and several part-time staff to allow a wide range of schools to be taught through the medium of either English or Welsh. There is also a video and teaching pack (DCCED 1993). The main emphasis is on keystage 2, particularly the history curriculum, but also offers links to a range of other curricula (Mytum 1999a), and the experience for school parties includes elements of role play, crafts, and study of the

reconstructed buildings. The University Of York training excavation for British and European Union students (from school and universities as well as some mature students) runs every summer, as does a credit-bearing field school for overseas university students which has a wider remit (University of York 1999). The Castell Henllys training excavation is the largest of its kind running in Britain at present, and that is only possible because of the support given by Pembrokeshire Coast National Park.

The Brecon Beacons archaeologist is himself running a small archaeological education project linked primarily to keystage 2. This allows children of ages 5 and 6 to participate in excavation and finds handling at an Elizabethan manor house, as well as study standing remains, the surrounding historic landscape, and documentary sources (Brecon Beacons National Park 1999). The Snowdonia National Park archaeologist has directed training excavations, largely aimed at the adult education market, which have been conducted largely on Iron Age industrial sites.

Conclusion

There are many exciting initiatives in national parks which involve activities beyond the core responsibilities of planning control, conservation, and encouraging

tourism. Interpretation of both wider cultural landscapes and individual sites has grown considerably during the 1990s, and education programmes are now beginning to include archaeological elements where appropriate for the curricula. With so many commitments, the national park archaeologists are torn in many directions. But it is possible to gain additional staff and promote activities through opportunistic applications for funding from the European Union, English or Welsh government agencies, the lottery, and

private sponsors. Even if some such projects are inevitably temporary, many have outcomes which can last considerable periods of time. The flagship projects, such as Royston Grange and Castell Henllys, offer a lead which others may follow if the commitment is there to seize opportunities as they present themselves. Despite renewed financial pressures on recurrent funding, exciting times lie ahead for archaeology within British national parks.

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The Genius of the Place: Managing a "Mini-National Park" at Bede's World

ede's World could well become part of a World Heritage Site early in the twenty-first century, but it is not a national park, nor does it aspire to be one. It nevertheless shares much of the basic philosophy of national parks regarding purpose, objectives, and management, and finds inspiration in their existence and their doings.

Bede's World is both a place and a project, not unambiguous as a project though a very small place compared with national parks: about 80 acres (32 ha) all together. It is founded on the life and works of one man, the Venerable Bede, the genius of this place in what is now a markedly postindustrial landscape in northeast England. His was the name above all associated with the fame of Jarrow in the decades either side of AD 700. Then the monastery which he served, founded by a royal grant of land in the Anglian Kingdom of Northumbria, lay at the heart of the remarkable intellectual and artistic flowering conveniently known as "the Golden Age of Northumbria" (Blair 1970, 1976; Bonner et al. 1989; Hawkes 1996; Higham 1993). Subsequently, Bede's reputation as scholar, saint, and commentator on the Scriptures grew, and the place

where he spent the whole of his life after early childhood became one of sanctity and pilgrimage.

The small area of land encapsulated by the name "Bede's World" may look far removed from the characteristics of a national park, but it is nevertheless precious to manyscholars, local communities, and distant pilgrims, for example. The vision for its development and management as a public place of education and recreation is infused by thinking similar to that of those involved in National Parks. We also believe that a few green acres tucked into a visually scarred and socially deprived post-industrial landscape in the middle of tens of thousands of people's homes may in its own way be as important a social asset as the protected, rural spaces in rural backpack country, by definition distant from the urban milieu.

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We appreciate, of course, that we cannot re-create the spiritual or intellectual worlds known to Bede, but believe we can justifiably attempt to effect, however impressionistically, aspects of a more tangible Bede's world: his physical environment and some of its workings (Chippindale 1994, 7; Fowler 1999). That belief is in a way as much a matter of faith as was the Abbot's, Benedict Biscop, when he founded a monastery at Jarrow in AD 681.

The Site

Bede's World encompasses a complex of buildings, land uses, tenures, and expectations. At its core, physically and conceptually, is the church of St. Paul where, marvellously, the long tradition of Christian worship on this site continues.

The nave is largely nineteenth century, but it stands above the monastery's original basilican church (Taylor and Taylor 1965, 338-49). Here the famous Jarrow lectures occur each May, continuing Bede's tradition of scholarship (Sherley-Price 1955). The north aisle contains an exhibition of sculpture from the Early Christian monastery. The chancel was originally a free-standing chapel or small monastic church, dated AD 681 by its extant original foundation stone. Plausibly, it is the actual building in which Bede worshipped. Few late-seventh-century buildings stand in Western Europe. There are even fewer which are still

active places of worship rather than mere ancient monuments. Another one of them is the church of St. Peter, just 16 km (10 miles) to the south. Thirteen hundred years ago, then overlooking the estuary of the River Wear, it was the focal point of the original monastic foundation of a two-part monastery. The second part was built a few years later at Jarrow, *Gywre*, on a low-lying site overlooking extensive mud-flats where the River Don met the Tyne.

A new Benedictine monastery was built at Jarrow in the twelfth century, and it is the ruins of that, overlying the outlines of the archaeologically excavated Early Christian one (Cramp 1969), that are the obviously "old" part of Bede's World. The ruins lie beside St. Paul's, a church to which they were physically and functionally joined until the mid-sixteenth century, when the monastery was dissolved.

In addition to history and religiosity, a strong "green" element runs through the Bede's World concept and its implementation. The River Don itself has been cleaned up and landscaped. Along it, we are trying to recreate some of the former mud-flat habitat attractive to wader birds. The extensive tidal mud-flats which Bede would have looked out on are now filled in. Our efforts may be environmental gesturism, but they have helped recall the monastery's riverine connection from its harbour to the sea, and the estuarine setting in

The George Wright FORUM

which Bede worshipped and worked (Figure 1).

The secular focal point lies 400 yards slightly uphill at Jarrow Hall, a late-eighteenth-century family house (Figure 1). This held the museum until 1998, essentially to present results from the monastic excavations. Significantly, its achievement came about through co-operation—from the Church, local community, academia, outside funding, and financial and other support from the Local Authority. Essentially, those components remain in place for the twentyfirst century.

Beside the Hall (Figure 2) a multimillion-pound new museum building by architects Evans and Shalev (Singmaster 1995, 30) opens in May 2000, four years after Phase 1 (Figure 3) was opened in May 1995. This indoor part of the "Museum of Early Medieval Northumbria" presents not just the monastic excavations properly for the first time but also acts as a display case for an important phase of English history which at the moment does not benefit from a major presentation in a professional museum in the region. New to many will be Northumbria in its European context, focusing on the journeys of Benedict and Wilfred between England and Rome. This was their essential prelude to the foundation of Jarrow-Monkwearmouth monastery as a modern establishment up-to-date in its architecture, facilities, and liturgy. The references to the Mediterranean and to Late Classical antiquity in the architecture of the new museum building knowingly renew this link (Figure 3).

Landscape

All such relative sophistication in Bede's world would have been realised against the backcloth of the mundane daily life of an agrarian estate; and so is it still, for at Gywre in the twenty-first century as in the seventh we are trying to run an "Anglo-Saxon farm," not as a static stage-set but as a working "model" of what might once have been (Figure 4). It is on heavily polluted land formerly serving various industrial functions, occupied into the 1980s by huge petrol storage tanks. Vast amounts of soil were removed and replaced. The specifically agrarian landscape was conceived in 1991, mechanically shaped in 1992 and 1993, and planted up in 1993 with mainly deciduous hardwoods (attested as existing before AD 700 in northern England). By ca. 2025 the landscape with its trees and artificial stream should look as if it is a farmed valley where the fields have been cleared out of woodland. Already the setting looks old and the stream entirely natural as its babbles its way through modern but historically authentic (planted) meadow flora into its "Anglo-Saxon" pond, now with uninvited but very welcome wildlife (Figure 4).

The concept was based on a familiar archaeological landscape

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Figure 1. Plan of Gywre, the "Anglo-Saxon farm," showing Jarrow Hall and Phase 1 of the new museum building with, to their north, "pre-medieval" fields on an axial lay-out, standing oaks (cog-wheel symbol), a stream and pond, the sites of the four experimental buildings (a = Thirlings A, b = New Bewick grubenhaüs, c = Hartlepool monastic "cell," d = Yeavering hall), and a "Bronze Age" burial mound, all high above the mud-flats of the tidal River Don flowing northwards to the Tyne.



Figure 2. Careful design and landscaping has brought about a visually interesting juxtaposition between, *centre*, the "old," Jarrow Hall, now (May 1999) a restaurant, offices, archive, and library, and, *left*, the pergola fronting the neo-classical entrance to the new museum building.

model in corporating ideas of palimpsest, succession, survival, rupture, and continuity. Its design also had to bear in mind that this new and contrived landscape has to "work" in the late twentieth century and beyond as an Anglo-Saxon farm, an educational resource, and a tourist attraction. The constructed Anglo-Saxon landscape therefore had features built into it from prehistoric and Roman times of the sort demonstrably existing as relics in a Northumbrian landscape of ca. AD 700 (Figure 1; Fowler and Mills, in press). There are no problems of archaeological reference points for such landscape detail. Documentary evidence is brought into play too.

The pond and its adjacent ford, for example, lead to discussion of the topographical detail in Anglo-Saxon land charters.

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Figure 3. The atrium, the main feature of the entrance into the new museum building, is, in Mediterranean mode, open to the skies above its mosaic-lined pool. To some, a near-pure statement of Classicism creating a place of quiet and contemplation; to others, a waste of space and money badly needing to be "useful."

Buildings

We have also constructed buildings: practical ones which we have to have as farmers, and experimental ones for scientific and tourism purposes (Figures 4, 5, and 6). With the latter, we build from primary evidence and first principles, knowing that our work will at best produce a model that may or may not "work." We are constrained by having to operate on a site which is open to the public throughout the year and which must comply with several statutory requirements concerning access, safety, and animal welfare. We also have to generate revenue. Some basics are nevertheless quite clear in our construction work. We began by relating to the concept of "authenticity." That continues: but now "honesty" rather than just

authenticity is the key word, that is, being able not just to quote a reference but also to explain and be frank in interpretation and open in presentation.

So far three buildings are properly experimental, though some of the ostensibly modern buildings serve an interpretative purpose. We have carefully disguised with clap-boarding and thatch, for example, two modern steel-framed, breeze-block buildings which, complete with electricity, are necessary to meet our statutory obligations as keeper of animals (Figure 4). Interpretation of them for visitors states that the buildings have been made to look appropriate but are neither authentic nor experimental; and people seem to appreciate such honesty.

The three experimental Anglo-



Figure 4. The "Anglo-Saxon landscape" in 1999 looking south from the rush-edged pond towards the first part of the new museum building and the second part, *left*, under construction, with the chimneys of Jarrow Hall beyond. The unenclosed ground to the right is arable for cereal crops. The sheds, *centre left*, both modern and non-experimental, are respectively a pig-sty and work-shop; that to the right is a byre in a post-and-pole enclosure for the Dexter cattle (see Figure 8). All the hurdling is used in genuine animal control, but the anachronistic rope barrier and sign are statutory requirements for modern humans.

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Figure 5. Gywre in summer 1999, with home-made hurdling, genuine stream-side flora originating in 1993, and statutorily necessary modern stock buildings of "Anglo-Saxon" appearance and proportions, visually dominated by a very tall pylon and power line.

Saxon buildings are based on excavated ground plans of a hall-house (Figure 6), a grubenhaüs (sunkenfeatured building), and a monastic "cell" (Figure 7). The experiment so far is limited to putting them up in controlled circumstances, and reflects the hard reality of 1:1 experiment. An enormous amount of work, material, and skill is needed to do anything "for real"; and Bede's World simply does not command such resources as would have been available to an Anglo-Saxon estate owner (Fowler and Mills, in press). We learnt early on that such resources would have included skills in long-term silvicultural management, for straight timbers 3 m long and 40 cm in diameter—our specifications from the archaeological evidence—don't just grow on trees! In other words, we had some difficulty in sourcing our requirements. At

1999 prices, our "Anglian hall" (O'Brien and Miket 1991), a not-sosimple four-bay timber building, cost about £60,000, the price-range of a small, but new, three-bedroom house in Tyneside today. In contrast, our grubenhaüs, based on the archaeological evidence at New Bewick (Gates and O'Brien 1988), cost about £7,000. Our experience suggests such buildings could be knocked up relatively cheaply and quickly without the need for great skill or access to specialist resources. Perhaps that is why archaeologically they are so common.



Figure 6. Thirlings A: the completed building experimentally constructed on a ground plan of ca. AD 600 recovered from an archaeological excavation. Everything above ground level is, at best, sound inference; at worst, probably wrong. Practically every detail about the nearer gable, for example, is controversial except the spacing of the vertical oak posts. The proposed Yeavering hall will enclose some three times the floor area of this building. The cross in the background is a modern sculpture inspired by Northumbrian crosses of Bede's world and later.



Figure 7. Site signage on the Anglo-Saxon farm: clear, short, informative, up-todate, flimsy, cheap, temporary, and easily changed at the press of a few keys on an in-house desk-top computer.

The third building is based on one from the monastic settlement on the headland at Hartlepool (Figure 7; Daniels 1988). We now have the experience, the confidence and, remarkably, the money to proceed much quicker than expected to attempt our long-term ambition to erect a building based on the ground plan of one of the large halls at the royal site of Yeavering (Hope-Taylor 1977; Building A4). This project is in the planning stage (July 1999) with construction scheduled to continue during 2000-2001.

Management

Our corporate aspirations are somewhat dryly expressed in our mission statement:

The purpose for which the Company [Jarrow 700 AD Ltd] is established is to protect, preserve and improve for the benefit of the public the Church of St. Paul's, Jarrow, Bede's World, and the monastic remains and other historical and vernacular buildings in the vicinity and to plan, develop, maintain, manage



Figure 8. Bede's World traction-power: three Dexter cattle resting between regular stints of training to pull farm implements. Though genetically inauthentic for Anglo-Saxon stock, they are of appropriate size and proportions as indicated by archaeologically excavated cattle bones.

and improve the surrounding area as a centre of historical, religious, educational and cultural importance with a view to fostering public awareness, understanding and appreciation of the life, times and works of the Venerable Bede.

It is very much in the spirit of our own times that such a mission is pursued in partnership with others, and through marketing as much as through high ideals.

We are a small organisation. Eighteen trustees form the board of directors under a chairman (Peter Fowler). This has delegated executive responsibility to a small executive committee. both are advised by an estate committee, which also has delegated powers within board policies, and several panels covering various specialist areas such as education, community liaison and museological and academic matters. Other ad hoc mechanisms are set up and dispersed as appropriate, e.g., to deal with the concept and design of the new museum exhibition with con sultants in 1999. Apart from the

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board and executive, all the other groups include non-trustees, so our "management constituency" directly includes several dozen people bringing a wide range of expertise and interests. There is considerable interaction between these honorary managers and the 16 staff, and between both and various consultants, all guided by the single, full-time professional director (Miriam Harte).

Running a place while developing a concept like Bede's World is a major balancing act. Balancing the books is an obvious necessity, not least because we are a registered charity as well as a business and we have to earn to exist. We have not yet grown sufficiently to attain critical mass, yet are already effectively the recipient of several millions pounds sterling of capital investment. The next three years are critical financially, as returns on that investment must become apparent, not least to our many backers and the public. We are not, however, going to dwell further here on the purely financial aspects of our operation, though any reader must be as aware as we are that the bottom line really counts.

The balancing act is very much concerned with the conflicting demands, needs, requirements, objectives, priorities, and expectations of our many constituents. We know that basically there is no one single template for success, apart from constant change and self-analysis. We firmly believe that we have a strong vision and a very sound base, but how we deliver that vision and manage the many elements to it must constantly be challenged and questioned. Bede's World is compounded of healthy tension, and must thrive on it or die.

The physical management of the diverse elements of the site, and specifically the farm, is itself challenging. We are daily (and nocturnally) concerned about the safety and security of the site and the physical well-being of staff, visitors, and animals. The site is exposed, petty crime is common in the neighbourhood, there are on-site hazards (e.g., open water; Figure 4), and staffing is thin. On the other hand, if everything was behind fences and ropes, how can we hope to give people the experience of a seventh-century landscape? Indeed, how should we interpret the site? One way is to let them simply absorb it, but will they have enough knowledge to appreciate what they are looking at? To what extent should we seek to involve people actively? Or do we use signs that again can so easily be inappropriate (cf. Figure 4) and permanent? Information points tend to result in erosion hollows. We have received considerable professional criticism for our style of onsite interpretation that is based on the principle of being non-intrusive and easily (and cheaply) replaced (Figure 7); but things change on a farm, seasonally, daily, and we wish to share these changes with our visitors.

The best form of interpretation, perhaps especially here with a complex and intellectually quite demanding experience to hand, is undoubtedly guiding. This is, however, a very labour-intensive option, and we have neither the staff nor the appropriately trained volunteers to maintain such a facility every day. Nor have we yet been able to afford audio guides. They could be ideal over the whole site, and we are watching technical-and costdevelopments carefully. We are very struck not only by the efficacy of the "wands" now provided at Stonehenge, for example, but also by their remarkable effect on visitor behaviour.

Another physical conflict on our site is how to do all the work basic to an agrarian life-style while using authentic methods-methods based on a large, local, mainly free labour force that would have been available to Anglo-Saxon estate owners. And while we try to do our best in labourintensive activities like daub-production (Figure 6) and trying to plough clayland with a small wooden ard and two recalcitrant cattle (Figure 8), we simultaneously must ensure our employees' and volunteers' health and safety. We have to compromise, for example, by using a string-trimmer on a day when we are closed to the public. Provided a process is not part of our serious experimentation, managerially we conclude that the important thing is to demonstrate how something would (or could) have been done as part of the interpretation, while keeping the site looking its best by developing and working as efficiently as possible with the available workers. If we were to go indiscriminately in this direction. of course, we would deservedly lose our credibility as a place of academic study, research, education, and reliable interpretation. The trick-and it has to be a trick-is to sharply define specific activities that are kept "clean" (some aspects of the crop management and timber building, for example) while we explain and are honest about the rest.

Every day, within the context of the "big dilemmas" of the sort outlined above, small incidents raise significant issues. Recently, for example, a group of visitors had been booked in and catered for, but because they spent two hours on the farm, they had no time to go to the cafe. Should we be upset by the fact that this group was so enthralled by the farm that its members did not spend any money in the cafe? As narrow-minded "business managers" the answer is probably "yes," for we lost out financially on that visit; but in the wider context of what Bede's World is actually about, we can but be glad about our visitors' interest and hope that this might translate into a return visit.

The very diversity of the site affects visitor management. Our ideal visitor would arrive by public trans-

port at 10 AM, visit the church, enjoy a coffee, visit the museum, break for a bought-lunch in our excellent restaurant, then spend a couple of hours on the farm before buying some highquality souvenirs and books in the shop, relax over tea and cake, and finally leave in late afternoon (the order indicated may be adjusted to taste!). Only a minority attain this status of ideal visitor, for few come with sufficient time allowance for the whole experience (which minimally now needs half a day and can easily absorb six hours). But all our evidence is that most people are enthusiastic once they get over the major hurdle (physically and "informationally") of getting to Bede's World in the first place.

We know the mantra of "Location, location, location": our dilemma is that the area around St. Paul's church is the only possible location for Bede's World, yet it is almost the very last place anyone would deliberately attempt to realise the sort of project in which we are involved. The word "Jarrow" unfortunately does not immediately spring to mind when thinking of an enjoyable day out or of the great cultural icons of our age. Grand Canyon, Taj Mahal, Stonehenge, Jarrow; no, it does not quite ring true-yet. Nevertheless, Bede's World is very consciously one item in a "cultural renaissance" being encouraged along the Tyne. Furthermore, because we are actually in the only possible location, we can

sense and promulgate the "genius" of the place, while enjoying with our neighbours a sense of locality.

All that said, our major difficulty is in attracting people to Jarrow. Once we manage to entice the visitor in (which is our key need-to attract new audiences), our objective must be to keep them as long as possible and make sure they leave with a burning desire to come back soon (bringing their friends), maybe to check progress on a pet project on the farm, or to come to a special lecture or exhibition that they saw advertised when they visited. They should also leave having signed up as a Friend, if not a volunteer! That should be our ambition for every visitor, with special emphasis on family tickets for example. We must ensure that every element of the site is making this a high-quality, enjoyable experience, whatever the needs, knowledge, and aspirations of the visitor.

The delivery of this high-quality experience is entirely dependent on the people the visitor meets at every point in his or her journey, whether they be staff or volunteers. Finding, developing, keeping and motivating high-quality staff is a major challenge for an organisation such as this, but entirely possible. We do not have many of the tools of big and rich organisations, such as good pay, longterm career development, travel, and bonuses, but what everyone can have is a sense of self-worth, respect for knowledge and expertise, pride in their service to their customers, and a recognition that others are relying on them. We have to try to be creative in "enhancing" jobs with things other than money, such as training opportunities and involvement on a special project, and chances to give new insights and broaden their experience.

An example of the constant questioning and re-interpretation of our vision that is needed would be our education programme. Education is at the core of Bede's World's philosophy and its activities; it has always been a key strength, we have always been good at it, knowing what we were doing (Fowler 1999). Our education service's purpose is "to support the mission of Jarrow 700 AD Ltd by promoting and developing Bede's World as an educational centre for the study and appreciation of the life, times and works of the Venerable Bede." That includes provision of educational input to museum displays, exhibitions, historic reconstructions, publications, and interactive learning developments. Now we must look to our strengths, examine needs and unmet demands, and develop programmes that will fulfil them. If we just continue to do what we have always done, we will fail. Education must be totally re-invented.

The biggest balancing act of all is how to allocate scarce resources, people, and money among all the different activities on the site. Who should take priority? We have to ask ourselves, "What would make the single biggest difference to the visitor in the long term?" We agree about the question and about the need to ask it, but we each have different answers. Bede's World, as we said, will thrive on ideas and tension.

East across the Don is a vast park for the products of a Nissan car factory. South from the church is a large commercial timber yard. Our neighbour on the northwest is a Shell petrol storage facility with large, round, above-ground tanks. On the north, between our boundary and the Tyne, is a marine works, and the whole site is straddled by electricity supply cables (Figure 5). It is difficult to ignore this environment; and we do not, for we are part of it. Were it not that this whole area is in a post-industrial phase, with high unemployment as labour-intensive work has ceased, the sort of government and European money on which Bede's World has been initiated would not have been available. The fact that Bede's World developed where it is in the 1990s is because the opportunity to do so is itself a post-industrial phenomenon.

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Developing a Management Plan for the Ironbridge Gorge World Heritage Site

y the end of the eighteenth century, Coalbrookdale in Shropshire was famous. It had one of the largest ironworks in England—an enterprise symbolized by the renowned Iron Bridge, the first such structure ever built on a large scale (Figure 1). Abraham Darby's Coalbrookdale Company pioneered the mass production of iron following the breakthrough in coke smelting in 1709. The ironmasters of the East Shropshire Coalfield went on to make the first iron wheels, rails, boat, aqueduct, and steam locomotive, as well as early steam cylinders. The great Iron Bridge was a key step in the use of iron in construction, and has become a universal symbol of the Industrial Revolution. Other industries, based on locally sourced materials, an industrialised working population, an advantageous transport network, and local entrepreneurs, also prospered. Coalport China (Figure 2) and decorative tile ware in particular gained an international reputation.



Figure 1. The Ironbridge reflected in the River Severn. The bridge is currently swathed in scaffolding for a repaint. The Institute is using the opportunity for a detailed survey and record of the structure.



Figure 2. Bottle kilns at the former Coalport China Works, now a museum. Part of the site has been converted into a youth hostel for visiting school groups. This site illustrates the difficulties of physical access to historic buildings. The circular footings of the middle kiln raise the debate over restoration and reconstruction of historic monuments.

But this prosperity gradually ebbed away, and so did the population. As people moved away to find new jobs, buildings fell into disrepair. By the time the New Town (later to be named Telford) was created in 1963, the Ironbridge Gorge had become an industrial backwater, but many monuments to early industry survived. From the late 1960s, the furnaces and other major industrial archaeological sites were directly protected and managed by the Ironbridge Gorge Museum Trust. Other buildings and areas were protected under the powers of the planning acts.

In 1986, the international importance of the area was recognised by UNESCO through its designation as a cultural World Heritage Site. This followed a nomination by the U.K. government, which is a party to the World Heritage Convention. This provides for the identification, protection, conservation, and presentation of cultural and natural sites of outstanding universal value.

A prerequisite for World Heritage status is the existence of effective legal protection and the establishment of a management plan to ensure the site's conservation and presentation. In the U.K., legal protection is achieved through controls such as the listing of buildings and scheduling of ancient monuments, the establishment of conservation areas, and by the outstanding international importance of the site being taken into account as a key consideration by local planning authorities. A management plan enables all the agencies involved with the World Heritage Site to co-ordinate their activities and helps ensure that the site is managed to the highest possible standards.

The Need for a Management Plan

The Ironbridge Gorge today is a scenic cultural landscape, but its former industrial character has been concealed by the natural regeneration of the landscape. The tenure of the land is complex: the Gorge has an existing residential community of over 3,500, and receives 800,000 visitors annually. The management plan is intended to guide the longand short-term management of this complex landscape. It will be a working document that will complement the existing programmes of the responsible agencies, and foster partnership work by establishing for

the first time a unified framework for management of this unique asset.

A management plan is also needed to satisfy the U.K.'s obligations under the World Heritage Convention. UNESCO, through its subsidiary bodies, the International Centre for the Study of the Preservation and Restoration of Cultural Property (ICCROM), and the International Council on Monuments and Sites (ICOMOS), has produced a set of management guidelines for cultural World Heritage Sites. These guidelines stress the importance of longand short-term management plans to resolve conflicts and protect the cultural value of each site. The organisation of the Ironbridge Gorge management plan reflects the guidelines published by UNESCO.

It is intended that the management plan will provide an overall framework of objectives and actions for the site, but it is not in itself a statutory document. It does not confer any new powers; it can only advise, inform, and promote. Each individual agency has its own set of aims and priorities, but it is intended that the plan will help to foster effective partnerships (Table 1) to make best use of scarce resources. The management plan can only operate with the direct support and co-operation of all the agencies, and of the many individual residents and users of the site.

Telford & Wrekin Council	Local planning authorities
Shropshire County Council	
Bridgnorth District Council	
English Heritage	Advisor to the government on
	heritage policy
Ironbridge Gorge Museum Trust	Established 1968; manages
	most of the key industrial
	monuments
Severn Gorge Countryside Trust	Established 1991; owns and
	manages most of the
	countryside throughout the
	World Heritage Site
Ironbridge Institute	University of Birmingham
Environment Agency	
Department of Culture, Media and Sport	
ICOMOS UK	

Table 1. Key partners in the development of the Ironbridge Gorge management plan

The aim of the management plan is to:

- Express the special significance of the Ironbridge Gorge World Heritage Site;
- Encourage public discussion and commitment;
- Balance the many and varied interests and pressures in the Gorge;
- Establish a clear and sustainable framework for the future management of the World Heritage Site;
- Coordinate existing policies for the conservation and management of the World Heritage Site, and review and widen their scope as necessary;

- Encourage the integration of different agencies' management and maintenance programmes set clear objectives and high standards of management for future action in the World Heritage Site; and
- Establish a context for research, funding, and bidding.

To fulfil this brief, a number of task groups were set up to look at themes and areas of work identified by the inter-agency group as important to developing a management strategy for the Gorge. Officers from different agencies worked together and produced a series of short reports. These working papers provided a framework within which the

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core team could develop ideas and strategies. There has been a large amount of source material for the core team to draw on in the preparation of the plan. The material covers a broad range of subjects, including archaeology and historical development, planning and transport policy, woodland and countryside management, and ecology, and reports on tourism and land instability.

In June 1997, a consultation document was published. Based on key issues that reflected the areas where damage to the special qualities of the World Heritage Site could occur, the Ironbridge Gorge Initiative also highlighted the commitment to partnership working between the agencies. A copy was circulated to every home in the Gorge, to all the Friends of the Museum, and was publicised widely. Three hundred pre-paid responses were received; 89% of respondents fully supported the stated aims and actions.

The content of the first draft of the management plan is based on the consensus achieved by the key managing agencies in producing the Ironbridge Gorge Initiative, and reflects the priorities and issues expressed during the consultation. The consultation responses endorsed the proposal that there must be a more integrated approach to management of the World Heritage Site. Transport-related issues were high on the agenda of respondents. Local residents were particularly concerned about the upkeep of buildings within the World Heritage Site and about the key role played by the bridges over the river in linking communities throughout the Gorge. Many people felt that to facilitate good decisions about the management of the World Heritage Site, all those who work and live in the Gorge should have access to the fullest information. A key aim of the management plan is to both inform and involve the local community. The lead agencies have signed up to:

- Conserve the industrial heritage in its distinctive semi-natural landscape;
- Interpret it as a whole for a wide public;
- Contribute actively to the economic, social, and environmental quality of a diverse community;
- Work together to achieve high standards;
- Protect the heritage while ensuring that, wherever possible, it remains accessible to all; and
- Actively engage people and agencies in the management of the Gorge for present and future generations.

Statement of Significance —World Heritage Values

The identification of the Ironbridge Gorge as a site of cultural significance forms the *raison d'être* of the management plan. To ensure that the special value of the site is not diminished, there must be an under-

standing of why the site needs careful stewardship and management through the implementation of a management plan. The Ironbridge Gorge was inscribed as a World Heritage Site in 1986. UNESCO measured the Gorge against six criteria that assessed the universal significance and cultural importance of the area. These were identified as compelling reasons for its designation under four of the criteria:

- The discovery of coke iron in 1709 by Abraham Darby, and the first successful large-scale structural use of cast iron in the Iron Bridge of 1779, are master-pieces of creative genius.
- The techniques embodied in these advances had worldwide application and were of considerable international influence in the growth of industrialisation.
- The physical evidence of the historical evolution of mining, manufacturing processes, transport networks, and social processes that are so much a part of the existing fabric provide a fascinating summary of the development of an industrial region in modern times.
- The dramatic topography and landscape, the river, the distinctive form and pattern of the settlements, and the presence of industrial monuments such as the Iron Bridge, combine to act as a world-renowned symbol of the

Industrial Revolution for the many thousands of visitors who are attracted to the area each year.

Re-assessing Values

Since the inscription of the Ironbridge Gorge as a World Heritage Site, appreciation of its importance has evolved. Whilst the above reasons for designation have retained their force, it is the total landscape and what it contains and represents that is now seen increasingly as its singular distinguishing feature. The Gorge is a unique landscape of sites and monuments, buildings and spaces, woodlands and open land, which together manifest the processes of industrialisation in Britain and worldwide.

Although the Gorge must be viewed as a whole, it is possible to discern three principal dimensions that underpin its significance: its industrial archaeological resource, its historic character, and its natural environment.

The industrial archaeological resource. Specific technical innovations that occurred within the Gorge relate particularly to the iron industry, but other innovations found more general application, such as the pioneering application of the steam engine. With its vital geological coincidence of high-quality coal, ironstone, and clay, the Gorge also contains important mining remains. The Iron Bridge itself stands as a powerful symbol of the innovative spirit fostered in the area. Many of the products of the Gorge were of considerable artistic quality, whilst some, such as ceramic tiles and especially Coalport china, achieved international fame. Together, the buried remains and standing historic buildings and surviving products document the evolution of the Gorge from the sparsely populated mining area of the seventeenth century to the mixed residential, manufacturing, retail, and recreational functions of today.

The historic character. The combination of history, building materials, form and pattern of the buildings, layout of roads and tracks, and the relationship of the buildings and routes to the river and to areas of open space and woodlands gives the Gorge a special historic character. This historic fabric and the documentation of the activities in the area stand as a very significant resource in illustrating the effects of industrialisation on social behaviour, values, and structures. Continuity of use, with frequent adaptations but little wholesale renewal, is a recurring feature in the Gorge. It has resulted in the survival of a high proportion of the original building fabric, and there are currently seven scheduled ancient monuments and 406 listed buildings within the World Heritage Site. No one character dominates in the diverse built landscape of the World Heritage Site and each area

retains its own identity reflecting its specific historical experience.

The natural environment. The nature conservation value of the World Heritage Site woods and open spaces is significant and is strengthened by their overall size and diversity. Several nationally designated sites of special scientific interest (SSSIs) and numerous locally designated wildlife sites are present. Ancient semi-natural woodland and woodland on ancient sites are particularly important in the World Heritage Site. Many important nonwoodland habitats are also present, including valuable grasslands and heathland. The River Severn itself continues to play a major role in the local environment-it remains a relatively "natural" river, and is a prime wildlife site throughout its length.

The ICOMOS-ICCROM guidance suggests that the significance of each World Heritage Site creates important "cultural values" for the present day which need careful stewardship and management. These values have both a historical and contemporary dimension.

Historical Continuity

Historical identity. The Gorge has a clear identity as the "Birthplace of Industry." Its pioneering role in iron production and industrialisation is internationally recognised. The Iron Bridge itself is the supreme symbol of the Industrial Revolution. Archaeological richness. The evidence contained within the landscape of the Gorge for the origins and development of ironworking and subsequently for wider industrialisation is unrivalled. The survival of comprehensive documentation enhances the importance of the remains by providing a source for study that is complementary to the physical resource.

Rare character. The combination of history; the form and pattern of the settlements; the dramatic topography and river landscape; the local vernacular in building forms and materials; the relationship of buildings to the river, open spaces, and woodlands; and the intricate network of paths and roads gives the Gorge a special character. It is a unique cultural landscape which has survived virtually intact and as such has a rare and irreplaceable value.

Modern Relevance

Community roots. The history, topography, and community life of the Gorge give the area a clear sense of place and a very strong identity. This identity is appreciated locally for the sense of community and belonging that it fosters, and is an important anchor in the evolving new town and the ever-changing contemporary world. The management plan will seek to underpin the vitality of this living community.

Economic potential. The heritage of the Gorge is the foremost visitor attraction in the region, attracting over half a million visitors each year. It is estimated that the per annum direct and indirect economic impact of the visitors amounts to 1,500 full- and part-time jobs and £20 million spent within the Wrekin District alone. The identity of the Gorge as the "Birthplace of Industry" provides a significant marketing advantage, with local industry and services playing an important role in the life of the community.

Educational value. Of the 256,000 visitors to the Ironbridge Gorge Museums in 1998, 60,000 were part of formal school groups. The infrastructure provided by the Ironbridge Gorge Museum for receiving educational groups is a key aspect of the contemporary importance of the Gorge. The informal educative and learning experiences provided by visiting the area are also of immense value, with the wider ecological wealth of the area as significant as the historical associations.

Ownership

The World Heritage Site cannot be managed by one agency alone; each has certain clear ownership and management responsibilities. To date ,there has been no overall integrated plan for the Ironbridge Gorge. The local planning authority development plan remains the statutory planning framework for the area. The Ironbridge Gorge Museum Trust is drawing up a series of conservation

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plans for the individual sites within its ownership to ensure that each monument and site is managed in a way that respects its special significance and setting. The Severn Gorge Countryside Trust owns large areas of wooded slopes and grassland. It, too, is building its own portfolio of management plans for these natural sites. There are, of course, numerous other commercial and domestic property owners who have repaired and maintained historic buildings and sites, and therefore have a contribution to make in the management of the World Heritage Site. But the scale and significance of this concentration of land owned and managed by public or charitable organisations is notable.

In an area as complex as the Gorge, there are many issues to be reconciled. One of the task groups devised key issues for the preservation of the significance of the World Heritage Site. These four issues-the preservation of character, visitor management and access, land instability, and management of the rivers and their banks-formed the backbone of the priorities listed in the Ironbridge Gorge Initiative. The content of that document was agreed by consensus amongst those organisations forming the strategy group, and endorsed by the public consultation exercise. Although the Heritage Lottery Fund and European Structural Funds present new opportunities for funding, the continued economic vitality of the area is the most realistic way of assuring the resources needed to address the four key issues. The successful regeneration of the Gorge over the past 30 years illustrates that continuing economic development can be sustainable whilst preserving and enhancing the special qualities of the World Heritage Site.

Preservation of Character

Character is a combination of topography, landscape, social history and environment, with present-day uses and communities that gives a place its sense of identity. There has been a hugely successful programme of renovation and restoration of historic structures in the Gorge over the past 30 years, and the character of the Gorge today has a vitality that was lacking then. It is not only an attractive place to live, but is a place of manufacture and commerce, as well as an attractive recreational centre for local inhabitants and visitors. However, despite statutory protection, there is pressure for change through small-scale alterations and inappropriate modernisation. There are also important historic sites at the heart of the World Heritage Site that remain semi-derelict, most notably at the former tile works in Jackfield, and areas of neglected woodland and riverbanks. An over-managed or "tidying up" approach to enhancement, and "over-development," would both change the special character of the area and inhibit the natural regeneration process. Recording and understanding the resource will ensure that informed decisions are made and that the values of the World Heritage Site are protected.

Visitor Management and Access

The tourist business is estimated to contribute in excess of £11 million a year to the local economy in the Gorge, and has been a major factor in attracting the resources needed for regeneration and conservation work. But the environment has an intrinsic value that transcends present-day tourism needs. Tourism creates pressures for change through the need for physical access to sites and landscape, the need to explain and present the heritage for the benefit of all, and through the demands of transport, particularly parking and road improvements (Figures 3 and 4).

The Framework for Managing the World Heritage Site

UNESCO guidelines on management plans for World Heritage Sites advise that the plan should be based on a 30-year time span, with medium- and short-term objectives contained within the long-term strategy. The objectives set out here follow on from the description and identification of key issues in the Ironbridge Gorge World Heritage Site. The objectives are linked to an action plan that sets out projects and programmes needed to implement the management plan.

The Ironbridge Gorge Initiative document sets out the following aims: to conserve the industrial heritage in its distinctive, semi-natural landscape; to interpret it as a whole for a wide public; and to contribute to the economic and social life of a diverse community. In order to achieve these aims and address the issues that have been listed, 18 objectives have been identified (see Table 2).

Implementing the Plan

The plan is a strategic document. It will advise and influence the management of the World Heritage Site as a whole, whilst site managers are developing individual site management plans. These will show how, at a detailed level, sites can be managed within the strategic objectives of the overall management plan.

The eighteen objectives identified above deal with real needs and priorities that are necessary for longterm conservation. The implementation of these objectives will be achieved through the ongoing work of the agencies, as individual organizations and as partners, and the commitment of local people who live and work in the Gorge. Their "ownership" of the plan and an acceptance of the values that make the area special is essential to its success.

The partnership arrangement, at present an informal agreement be tween the agencies, can be used to

Table 2. Objectives of Ironbridge Gorge Initiative

To conserve the industrial heritage in its distinctive semi-natural landscape: 1. Protect, maintain, conserve, and, where appropriate, enhance the built and natural heritage of the World Heritage Site and its setting. 2. Establish detailed policies and programmes of action, which will be reviewed annually. 3. Keep all designations under review by the appropriate authority to ensure that the most appropriate level of statutory and planning protection is in place. 4. Complete an analysis of the special character of built and natural heritage to inform future policy- and decision-making. 5. Establish practical indicators to monitor change. 6. Agree a code of practice for environmental maintenance, and foster locally the traditional craft skills needed to implement high quality projects. 7. Expand the scope of the existing visitor management strategy, and encourage appreciation of the wider environment. 8. Review the transportation strategy, including provision for pedestrians and the increasing age of visitors, and identify priorities in the local transport plan. 9. Review residents' parking problems. 10. Devise a risk management strategy for coping with natural erosion and land instability. 11. Agree a management and interpretation strategy for the riverbanks and water courses. 12. Assess the condition and use of the existing bridges across the River Severn, and any long-term need for an additional foot or cycle crossing. To interpret it as a whole for a wide public:

13. Encourage the establishment of a programme of archaeological research into the historic landscape of the Gorge and its environs, and make the results widely available.

- 14. Develop an integrated approach to interpreting the historic landscape.
- 15. Make use of emerging technologies to provide access to information and knowledge for visitors and local communities alike.

To contribute to the economic and social life of a diverse community:

- 16. Promote social and economic regeneration in and around the World Heritage Site that benefits the local residential and working community and enhances the environment.
- 17. Celebrate the local distinctiveness of the settlements and communities in the Gorge, and recognise this in the implementation of all types of projects.
- 18. Further involve the community in the development and implementation of the management plan and its objectives.

coordinate projects to achieve maximum impact. Partnerships bring benefits which include access to a wider range of funding sources and increased chances of securing successful bids to the Heritage Lottery Fund and other discretionary schemes. It will mean more initiatives can happen at once with greater impact, and it gives lobbying power for the needs of the World Heritage Site.

The plan will have the support of other organizations such as ICO-MOS and the Department of Cul-



Figure 3. The Park and Ride bus scheme in the centre of Ironbridge has been only partially successful as a visitor management tool. Families with pushchairs and the less mobile find it difficult to use the buses and are reluctant to give up their cars.



Figure 4. More traditional forms of transport for carrying visitors around the Blists Hill Open Air Museum of relocated historic buildings. This museum is the main visitor attraction in the World Heritage Site. ture, Media and Sport. If the secretary of state is happy with the plan, he will submit it to UNESCO on behalf of the British government.

The achievement of the objectives listed above will be overseen by the existing strategy group; new mechanisms to facilitate the partner arrangements and the need for a new post of coordinator to implement the plan are discussed below. The action plan that is being developed will set out a short-to-medium-term (5-10 years) programme of projects. It will indicate which agency or agencies will take the lead in implementing schemes and developing strategies.

There is a need for the Ironbridge Gorge to have a secure and sustainable economic base that is compatible with the conservation of the World Heritage Site. Securing the objectives of the plan must use the partnership approach to balance the various interests and ensure that World Heritage values are not diminished. A key part of implementing the action plan will be to achieve a standard of excellence appropriate to the World Heritage Site in all areas of work from interpretation and conservation through to everyday maintenance work. The monitoring and review of the action plan must include an assessment of quality.

The mechanisms to achieve the objectives are twofold: through the existing working arrangements, and through the appointment of a dedicated World Heritage Site officer.

The World Heritage Site strategy group will continue to oversee the implementation and delivery of the plan. At present the agencies come together in an interagency body which acts as a working group. To implement projects, closer work arrangements may be necessary. Individual projects will also require specific teams. The composition of the working group will be reviewed to ensure that all interests are represented, including the local business and residential community. These working arrangements need to be agreed to implement the action plan.

A new position of coordinator is suggested to serve the working group and coordinate the implementation of the action plan. The post will also be responsible for monitoring and evaluation, carrying out a yearly review of the action plan, and anticipating the five-year review of the management plan itself. Similar posts have been created at Avebury and Greenwich World Heritage Sites. The officer reports to the World Heritage Site working party. The post includes liaison with local owners and employers, maintenance of the GIS database, and identifying sources of funding and bidding for grants.

The achievement of objectives will be constrained by issues outside the scope of the plan—for example, national planning policy or the level of funding necessary to achieve the desired outcome. A greater under-

standing of the potential impact of proposals on the World Heritage Site will be essential to justify both small and large changes. UNESCO has introduced monitoring requirements for all World Heritage Sites, and in the implementation and review of the plan there must be scope to ensure a full assessment of the site and its management arrangements by 2004. The success or failure of this plan will not be measured by the quality of the document itself, but the process of collaborative working that is essential for its shared ownership and effective implementation. Only time will tell if this process has been successful.

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Reinterpreting the Cultural Landscape of Chalmette Battlefield: Landscape Management Strategies for Parks with Multiple Layers of History

Introduction

ites which contain multiple layers of material history often do not conform to the established methodology for analyzing cultural landscapes. Such landscapes may contain historic resources—buildings, roads, vegetation—from multiple eras which are only loosely related developmentally. As a result, these landscapes may exhibit multiple and overlapping periods of significance. The degree of historical integrity the landscape retains from its primary period of significance may be weak, suggesting that conventional restoration is unfeasible or ill-advised. This does not preclude the possibility, however, of an ecologically informed and creative landscape rehabilitation, which draws inspiration from historic documentation while addressing contemporary interpretive and management concerns. A cultural landscape report prepared for the Chalmette Battlefield and National Cemetery Site during 1998-1999 provides interesting insights into such a rehabilitation and some innovative management strategies that could easily be adapted to other sites with multiple layers of history.

Site Context and History

Chalmette Battlefield and National Cemetery Site is administered by the National Park Service as a management unit of Jean Lafitte National Historical Park and Preserve. The park is located in St. Bernard Parish, Louisiana, approximately six miles southeast of downtown New Orleans in a highly industrialized corridor along the east bank of the Mississippi River (Figure 1). The property is bounded to the south by a broadly concave arc of the river and by its adjacent levee, which is maintained and administered by the Army Corps of Engineers. To the north, an approximately 200-foot-wide strip, containing highway, railroad, and

utility rights-of-way, separates the park from the St. Bernard Highway (Louisiana State Highway 46). The mammoth refinery and waste site of the former Kaiser Aluminum and Chemical Corporation bounds the park to the east; Chalmette Slip, a ship docking and storage facility, bounds the park to the west. A service road along the landward toe of the levee provides cross-park access between the neighboring industrial properties. A 1.5-acre sewage treatment facility, owned by St. Bernard Parish, stands as a conspicuous inholding at the southern end of the battlefield.

The 142.9-acre park includes the commemorative battlefield and the



Figure 1. Chalmette Battlefield and National Cemetery: Existing conditions and site context.

adjacent Chalmette National Cemetery, a designed landscape which occupies a portion of the former battlefield (see Figure 1). The battlefield property serves to commemorate the Battle of New Orleans and to interpret the strategy of this decisive American victory during the War of 1812. The cemetery was established in 1864 for the interment of Union soldiers killed during the Civil War in Louisiana. The 17.3-acre cemetery is set apart from the battlefield within a brick-walled enclosure along the park's eastern edge.

Both the battlefield and cemetery

occupy land that belonged to the historic Chalmette and Rodriguez plantations. It was on these two properties that the primary action of the Battle of New Orleans-the last engagement of the War of 1812-was fought, on 8 January 1815. During the battle, British troops advanced westward across the fields of Chalmette Plantation, attacking the American troops entrenched behind a canal on the eastern boundary of the neighboring Rodriguez Plantation. The two-hour battle was an impressive victory for General Andrew Jackson and his outnumbered troops over British forces seeking to capture New Orleans from the east. The victory solidified American claims to the Louisiana Purchase and bolstered Jackson's popularity, helping to catapult him to national prominence.

The commemorative battlefield contains a number of features associated with the Battle of New Orleans: the Rodriguez Canal, which served as the line of entrenchment for Jackson's troops; the partially reconstructed American rampart and artillery batteries; the site of the British attack and advance batteries; the Rodriguez Plantation archeological site; Chalmette Monument, erected in 1855 to commemorate the American victory; and Spotts Marker, erected in the 1890s to memorialize First Lieutenant Samuel Spotts's role in the battle. However, the battlefield also contains significant features not connected with the battle, notably the Malus-Beauregard House, an

architecturally noteworthy summer residence built in 1833, and archaeological resources related to post-battle land use and subdivision. For example, a trace of Fazendeville Road, a remnant of the free black subdivision of Fazendeville that existed on site from the late nineteenth century until 1964, remains within park boundaries. The interpretation of these non-battle-related features has proven problematic to the park's primary mission of interpreting the battlefield landscape, yet these features hold historical, cultural, and ethnographical significance in their own right. The cultural landscape report was developed, in part, to address this issue.

Project Description— The Cultural Landscape Report

A cultural landscape report is a research document that (1) records the existing and historic conditions of a cultural landscape; (2) analyzes the integrity and historical significance of that landscape against established National Register criteria; and (3) provides treatment recommendations for managing the cultural landscape in light of historical documentation and contemporary management concerns. For the Chalmette site, the overall goal of historical research was to trace the history and evolution of the various land parcels that compose the contemporary park. Significant periodsof change in the landscape were documented, including investigation of the site's pre-battlefield landscape

(plantation agriculture to 1815); the battlefield scene (1814-1815); Chalmette's post-battle history of subdivision and private ownership (1815-1964); and the battlefield's long history of private and public commemoration (1840-present). The historical research findings were compared with the park's existing landscape in order to assess what resources remained from both the battle-era landscape and from latter cultural overlays. Treatment recommendations were then devised to suggest how the park's landscape resources could most effectively be treated and interpreted in the future.

Problems and Management Issues

The battlefield's natural setting has been dramatically altered by surrounding industrialization, which has erased the formerly rural, agricultural context. In addition, progressive reinforcements of the levee have severed the landscape from its connection with the river. The presence of a highway and railroad to the north of the park has further altered the distinctive spatial character of the former battlefield land. Strategically open view lines, across the once sweeping Chalmette Plain and along the curve of the river, have been blocked by industrial infrastructure or wooded buffer zones to the east and west of the park. The cypress swamp, which spatially defined the northern extent of the battlefield and played a critical role in Jackson's battle strategy, was lost to timbering in the nineteenth century. Consequently, the woodland swamp zone that exists today does not contain cypress trees and only loosely approximates, for interpretive purposes, the original swamp. The levee has blocked views of the Mississippi River to the south.

Because of the relatively small size of the site, the battlefield setting is noticeably interrupted by the presence of non-contributing park-era infrastructure, especially the visitor tour road, which circumscribes a portion of the central battlefield, and the complex of the visitor center, comfort station, and parking area. The tour road introduces automobiles into the battlefield setting and hinders understanding of the rectilinear land patterns that prevailed at the time of the battle. The visitor center, parking area, and comfort station are clustered in unfortunate proximity to the Chalmette Monument and Rodriguez archeological site. Though not owned by the park, the St. Bernard sewage treatment plant also intrudes into the battlefield landscape. The Malus-Beauregard House, a post-battle era construction, poses yet another interpretive challenge to the park; its anachronistic presence at the southern end of the battlefield confounds a clear understanding of the historic scene.

Summary of Findings

Given the highly industrialized context of its surroundings, Chalmette's landscape is not readily legible to the uninformed visitor; and it

bears only the loosest resemblance to the landscape that existed at the time of the Battle of New Orleans. Furthermore, the site's connection to the Mississippi River and to a broader regional context-information critical for understanding the site's early development as an agricultural landscape, its evolution to post-agricultural land uses, and its present condition as a relic landscape within a highly industrialized corridorremains largely uninterpreted. The landscape treatments proposed were thus devised with multiple purposes in mind: to preserve the park's significant cultural resources; to provide a fuller and richer interpretation of the site's landscape features, context, and multiple layers of history; and to address such contemporary planning and management concerns as boundary buffering, vegetation management, and visitor-use patterns.

A carefully selected program of rehabilitation was determined to be the most viable treatment approach for the commemorative battlefield. The urgent need for site buffering, a shift in visitor-use patterns, and the tightened economies of site management required landscape treatments that addressed such contemporary problems, yet enhanced the park's interpretive aims. In fact, primary and secondary interpretive themes were strengthened by revising visitor circulation patterns and by defining separate spatial zones, or "character areas," in which differential interpretation could occur. Treatment

recommendations also propose the removal or relocation of the park-era infrastructure that compromises the spatial integrity and understanding of the historic battlefield landscape. The riverfront was treated as a separate management zone because of its spatial isolation from the battlefield and its individual interpretive potential. Treatment recommendations suggest how the riverfront might be more fully incorporated into the park's interpretive program and the visitor experience.

Because of its developmental history, designed layout, and independent spatial integrity, Chalmette National Cemetery stands apart from the battlefield as a distinct designed landscape. Consequently, separate treatment recommendations propose a rehabilitation of the cemetery's allées and planting patterns, based on historic documentation and photographs. Such improvements will further distinguish the cemetery from the commemorative battlefield and will provide much needed buffering from the Kaiser Aluminum property to the east.

Management Strategies for Parks with Multiple Layers of History– Lessons from Chalmette

• Define separate interpretive zones or "character areas" to highlight secondary interpretive themes. Re-establishing historic circulation and vegetation patterns helps visitors to better understand the development and significance of a landscape on an

experiential level, even if such features are not explicitly interpreted. For example, rehabilitating the historic planting patterns in the national cemetery will enhance its distinct spatial character and developmental identity, while buffering the site from the surrounding industrial development. Resources which are anomalous or anachronistic to a park's primary interpretive theme are best placed within an interpretive and landscape context of their own, not ignored or glossed over for ease of interpretation. Simplifying a site's history for interpretive purposes does not do justice to the complexity of a cultural landscape. Furthermore, it denies the public a broader understanding of the site's historical development. Visitors may take away a false impression if such anomalies are not expressly interpreted. For example, the Malus-Beauregard House is often misinterpreted as a plantation house, and despite the park's efforts to the contrary, some visitors probably take away the impression that it was one of the battle-era plantations. Re-establishing a landscape setting for the house and restoring the riverfront approach will further distinguish the house from the battlefield.

• Use mowing patterns, natural successional processes, or selective planting to establish distinct interpretive zones. Employing

natural succession to simulate a landscape's historic spatial arrangement can reduce maintenance costs and time. For example, releasing an additional area of the "swamp zone" from active mowing in order to sweep across the tour road would provide buffering along Chalmette's entrance sequence, would create spatial and experiential variety for park visitors, and would complete the line of the swamp as seen from the southern end of the battlefield. Differential mowing patterns can be used to highlight hidden archeological features or historic circulation routes, a technique that is inexpensive to implement and easily reversible, e.g., mowing swathes through the battlefield to represent battle-era ditch lines, or perhaps Fazendeville Road.

- Plant ecologically sustainable native vegetation to simulate the texture, color, pattern, or appearance of historic vegetation or field patterns, such as by using a rowed planting of a coarse-textured, native clump-forming grass to simulate the appearance and pattern of sugarcane fields at Chalmette.
- Re-establish historic arrival sequences, circulation patterns, and spatial arrangements. Midtwentieth century park development often altered or eliminated earlier circulation patterns and spatial arrangements in order to accommodate increasing auto-

motive tourism. In many cases, these changes were implemented with little regard to the integrity of prevailing land patterns and, as a result, continue to hinder the visitor's understanding of the park's cultural landscape. For instance, the tour road at Chalmette runs counter to the rectilinear field patterns that existed at the time of the battle. Parks should encourage visitors to approach landscape features in the manner in which they would have been accessed historically.

Especially in a small park, develop interpretive programs that place the site in a larger regional context. Encroaching industrialization and suburbanization are jarring realities for many parks, yet many choose to ignore these contextual changes in their interpretive program, even though such changes are part of the regional and developmental context. Provide waysides or openair interpretive pavilions that allow visitors to experience the historic site from a new perspective or spatial framework. Such interpretive sites need not be complex, expensive, or visually obtrusive, and can include historic photographs or documentation that reveals the landscape as it would have appeared in the historic period. As an example, Hyacinthe Laclotte's painting of the Battle of New Orleans could be effectively used to interpret

the battlefield scene from atop the levee.

- Remove or relocate non-contributing park-era infrastructure, such as visitor centers, comfort stations, picnic areas, tour roads, etc., so as to minimally interfere with the spatial and experiential understanding of key historic landscape patterns. Infrastructure which must intrude into the spatial core of a historic landscape should be minimized so as to not interfere with historic circulation patterns, spatial arrangements, or archaeological resources.
- Preserve-and, ideally, enhance-existing buffer zones along park boundaries. Many parks are engulfed by suburban, commercial, and industrial development. The use of vegetative plantings to create visual buffering at both the micro- and macro-scale from within a park can be a relatively inexpensive and effective alternative when additional land acquisition is not feasible. Think about internal sight lines and how vegetation can be used to screen distant undesirable views, or to create distinct interpretive zones within the park. For example, planting trees to the rear of the Malus-Beauregard House will help to screen it from the battlefield, setting this post-battle-era feature apart in its own character area. Also, replanting the historic cemetery allées will provide mi-

cro-scale buffering from the Kaiser Aluminum plant to the east of the park.

- Use landscape materials to inter-. pret hidden archeological or ethnographic resources. Using a simple footprint marking of contemporary brick or stone pavers to interpret a vanished historic building or structure renders an invisible feature visible, and makes a cultural landscape more legible to the visitor, especially when combined with period historic documents, such as photographs, paintings, or maps, that depict the vanished resource. The Rodriguez archeological site is presently unmarked, but could easily be interpreted using this technique.
- Lastly, concentrate on the quality of the visitor's experience while

moving through the park. Is the visitor brought into contact with all the historically important features or aspects of the landscape? If a certain landscape feature or zone played into the historic events that occurred on site, is the visitor encouraged to explore these features? Provide access to the park's various ecological zones. A site's cultural history is never divorced from its ecology. A riverfront interpretive site at Chalmette would provide better site orientation to visitors arriving by riverboat, would encourage visitors who arrive by car to visit the riverfront, and would emphasize the river's importance to the battlefield scene and the site's later development.

[Ed. note: This paper, with additional figures, also was published in the 1999 GWS Conference Proceedings.]

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