Conservation

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The Getty Conservation Institute

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The Getty Conservation Institute (GCI) works internationally to advance the field of conservation through scientific research, field projects, education and training, and the dissemination of information in various media. In its programs, the GCI focuses on the creation and delivery of knowledge that will benefit the professionals and organizations responsible for the conservation of the visual arts.

The GCI is a program of the J. Paul Getty Trust, an international cultural and philanthropic institution devoted to the visual arts that also includes the J. Paul Getty Museum, the Getty Research Institute, and the Getty Foundation.

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Front cover: Enhanced detail of rock art in Tigui Cocoina cave in the Tassili d'Emi Koussi region of Chad. *Photo:* © David Coulson.

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Contents

Feature

4 **Rock Art Today**

By Jean Clottes

Rock art is a major part of our cultural heritage. It is certainly the most ancient and perhaps the most vulnerable. How can we best preserve the millions of images on rocks throughout the world, which constitute a kind of gigantic museum collection exposed to the depredations of nature and human activity?

Dialogue

10 **Preserving a Worldwide Heritage** A Discussion about Rock Art Conservation

J. Claire Dean, an archaeological conservator in private practice; Josephine Flood, former director of the Aboriginal Environment section of the Australian Heritage Commission; and Jo Anne Van Tilburg, director of the Rock Art Archive at UCLA's Cotsen Institute of Archaeology, talk with Neville Agnew and Jeffrey Levin of the Getty Conservation Institute.

News in Conservation

16 **U.S. Rock Art in the Twenty-first Century:** Problems and Prospects

By David S. Whitley

The last two decades have witnessed a dramatic change in the status of North American rock art, expressed in the United States by numerous research advances and a greater concern for conservation and site management. While these improvements are cause for optimism, serious problems persist, including the lack of trained rock art conservators and limited resources for site documentation and management.

20 **Building Capacity to Conserve Southern African Rock Art**

By Janette Deacon and Neville Agnew

Over the years, the GCI has facilitated conservation and training programs to improve the management of rock art sites, particularly in the Americas and Australia. The lessons learned from these programs have been valuable in structuring the Institute's most recent involvement in rock art conservation—the Southern African Rock Art Project.

GCI News

24 **Projects, Events, and Publications**

Updates on Getty Conservation Institute projects, events, publications, and staff.

Rock Art Today

By Jean Clottes

A view of one of the Sierra de San Francisco painted shelters in the deep canyons of Baja California, Mexico. Visitors to the shelters must have a permit to view the sites and are accompanied by trained local guides. *Photo:* Jean Clottes.

Rock art is the most widespread form of art and the oldest. Ancient humans must have practiced dances and music, storytelling, body decoration, and other forms of art, but these, of course, were not preserved. Paintings, engravings, and carvings on rocks, however, have endured throughout the world. These extremely valuable artifacts testify not only to the aesthetic sense of their makers but, above all, to their beliefs, traditions, modes of thinking, and way of life. In fact, the concepts of "art" and "artist" did not even exist in the languages of many cultures—for example, in Australia the images were said to belong to the mythical time called "the Dreaming."

When prehistoric rock art is mentioned, most people think of the painted caves of the Ice Age, such as those at Lascaux and Chauvet in France or Altamira in Spain. Yet Europe is not the continent with the most sites, and more than 99 percent of world rock art belongs to post-glacial times. This does not, of course, detract in any way from its interest and value; a painting by van Gogh is hardly less valuable for being just one and a half centuries old.

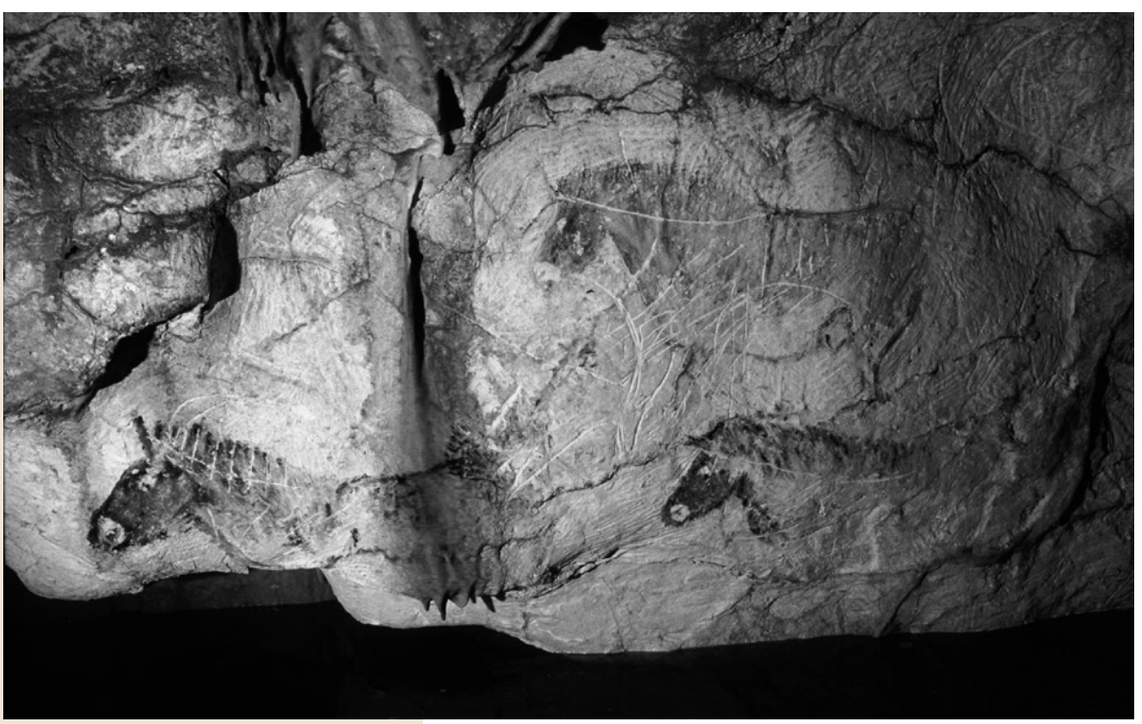
Precise dating of rock art is difficult. The chronology of a majority of images remains tentative because we can only radiocarbon-date those made with organic material, such as charcoal or beeswax. The others—engravings, as well as paintings made with minerals, such as iron oxides for the reds—which are more numerous by far, can be assigned dates from the subjects represented (the shapes of known weapons, for example), from comparisons with well-dated rock art, or from archaeological remains found at the foot of rock art panels.

No one knows exactly how many rock art sites still exist—probably more than four hundred thousand. In Europe, the famed Paleolithic art numbers no more than three hundred fifty sites, from the southern tip of the Iberian Peninsula to the Urals in Russia. Perhaps fifteen thousand more sites belong to five later traditions: the Levante art in shelters across the east of Spain; schematic art along the Mediterranean and Atlantic coasts in Spain, and the British Isles; the Fontainebleau Forest art near Paris; the Alpine art in France and Italy; and the thousands of engraved rocks in Scandinavian countries.

Africa is the continent with the most sites, estimated at over two hundred thousand. Sites are particularly numerous in two huge areas: the Sahara and adjacent regions, and southern Africa. Rock art exists in a number of places in the center of the continent, but in lesser quantity. In Asia, one can distinguish five main areas with rock art: the Middle East, Central Asia, India, China, and Indonesia. On that vast continent there may be more than fifty thousand sites.

In the Americas, rock art research has intensified in recent decades. Tens of thousands of sites probably exist from Canada to Patagonia, including more than fifteen thousand in Central and South America alone. They vary from the gigantic ghostly figures of the Barrier Canyon style in the American Southwest to vivid scenes with minute humans in the Serra da Capivara in Brazil.

Paintings and petroglyphs (engravings) are all over Oceania, with hundreds of sites in Hawaii and on Easter Island. The most important country in the world for rock art, however, is Australia, for three reasons. First, its painted or engraved sites number one hundred thousand or more (the Cape York Peninsula, Arnhem Land, the Kimberleys, and the Pilbara are regions with innumerable and often spectacular paintings and petroglyphs). Second, it is the place with the longest uninterrupted rock art tradition, dating back perhaps fifty thousand years. Finally, unlike elsewhere, in many



The semisubmerged Panel of the Horses in Cosquer Cave, Marseilles, France. Located below sea level and accessible only through an underwater tunnel, the cave contains several dozen painted and engraved works completed between twenty-seven thousand and nineteen thousand years ago. On this panel, ocean water is leaching the remaining image from the rock. *Photo:* Jean Clottes.

Rock art depictions of Wandjinas, spirits associated with rain, in the Kimberleys region of western Australia. Believing that peeling and faded images were losing their potency, people repainted these images to restore their power. These examples have probably been repainted numerous times. *Photo:* Jean Clottes.

places in Australia, the indigenous beliefs and stories about the art have passed down to modern times.

Rock art is a major part of our cultural heritage. It is certainly the most ancient. It is also the most vulnerable. The millions of images on rocks constitute a kind of gigantic museum with its works helplessly exposed to the depredations of nature and human activity.

Preservation Problems and Threats

It is doubtful that the creators of rock art gave any thought to what the art would become in time. They chose places for their works in accordance with their beliefs and customs and for all sorts of purposes, such as materializing tribal myths, asserting their presence, or getting in touch with the supernatural and benefiting from its power. Sites with rock art often became sacred, and the images were believed to be the work of the spirits. Sometimes, as in the Kimberleys in Australia, when the paintings eventually faded, people believed that they were losing their potency, and they repainted them to restore their power.

With the passage of time, the works suffered from weathering and other natural phenomena, so that today we have but a tiny part of what ancient peoples created. This is obvious from the absence of paintings on exposed rocks—where only engravings and carvings have survived—while painted images are still present in caves and rock shelters. Nature took its toll even on those works in protected places. For example, the end of the Ice Age ten thousand years ago brought flooding to vast areas. Thus, four-fifths of the wall surfaces in Cosquer Cave in France were destroyed by the Mediterranean; art survived only in those chambers that remained above sea level. If the sea keeps rising, some of the most important paintings in the cave will be gone within a century.

Over the millennia, natural catastrophes such as hurricanes and earthquakes, and even the slow evolution of the rocks themselves, have caused engraved rocks to split apart or painted cliff faces to collapse. In these instances, nothing much can be done. On the other hand, damage is often due to causes that can be controlled—for instance, when water seeping from cracks runs onto the walls, or when termites or wasp's nests threaten the exposed surfaces.

The greatest threats to the conservation of rock art, however, are human in origin. In most of the world, gradually or catastrophically (on several continents after contact with the first Europeans), traditional beliefs waned, and the art was no longer considered

sacred or even valuable. This development had two consequences. The first was the loss of the stories—what the images meant for their makers and their culture, and what ceremonies took place around them. When all this went, the art lost its life and depth. The images may be beautiful and strike a chord in modern beholders, but the complexity of their meanings has vanished. Whenever the stories have come down to us from parts of Australia, Africa, and the Americas, we are amazed at what they reveal about the spiritual life of their creators.

The second consequence of the disappearance of traditional beliefs is that the art, no longer respected and valued, becomes more vulnerable to modern development. Innumerable examples exist of rock art sites flooded by dams, cut across by roads, or destroyed by buildings or by the extension of agriculture. When huge economic and social interests are at stake, especially, but not only, in developing countries—and in the absence of strong religious or cultural opposition to the projects—the perceived value of rock art becomes negligible.

Even when the art itself escapes outright destruction, pressure can be strong to develop the surrounding area and thus change the context of the art drastically. Rock art is part of the landscape, which often plays a major role in its meaning. Even modern tourists sense this when they experience the art in its natural environment. Extracting an engraved rock and putting it into a museum is like cutting off a gargoyle from a cathedral and exhibiting it singly. Would we consider that due respect is shown to a medieval cathedral or to the Taj Mahal if we did not destroy them but nevertheless allowed them to be surrounded by factories or commercial malls?

In the past twenty years, more and more people have become aware of the existence of rock art. This awareness could serve to enhance its value and facilitate its protection. At the same time, the explosion of tourism has created new threats. Too many sites remain unprotected and vulnerable to the ever-increasing floods of visitors. Under such circumstances, protecting rock art and its environment is challenging. How can one prevent irresponsible tourists or locals from making graffiti, enhancing figures for photographs, removing artifacts, and sometimes even stealing engraved rocks to collect or sell, often after damaging them and their surroundings, as is currently occurring, for instance, in parts of North Africa?

In most countries, adequate laws exist to protect the rock art and other archaeological remains. Unfortunately, in the absence of public pressure, they are often not enforced, and nothing happens when destruction occurs. In other instances, the laws are superseded by economic and political interests, as in the construction of the gigantic Three Gorges Dam in China. The example of the proposed Foz Côa dam project in Portugal is unique; in 1995, after the discovery of thousands of petroglyphs along the banks of the river, the Portuguese government, under public pressure, abandoned the project and turned the whole site into a protected area.

Current Preservation Efforts

A major fight for the preservation of a huge rock art region is currently under way in the remote Burrup Peninsula of northwestern Australia, where a mammoth industrial plant is planning to expand after investing billions of dollars. Up to ten thousand Burrup engravings have already been destroyed or moved to another area as a result of industrial activity. Not so long ago, there would have been little discussion: industry would easily have won over art. What is new is that a powerful movement to protect the heritage and relocate the industry, not the petroglyphs, is gaining strength.

On all continents, associations of people interested in rock art fight for its preservation and recognition, initiating or supporting conservation actions, as in the Burrup case. Most of them are grouped in the International Federation of Rock Art Organizations.

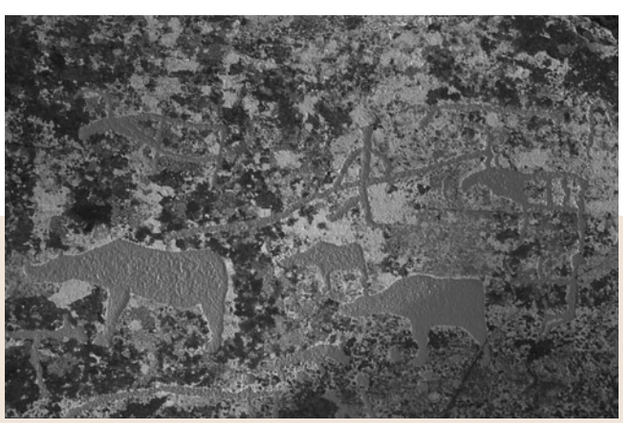
Preservation efforts differ, according to the nature of the sites involved. Painted caves are easy to deal with. Nearly all are closed, and their access is restricted. In Europe (mostly in France and Spain), thirty-five caves are open to the public to allow people to satisfy their interest in rock art. After decades of limitless visits to the most famous (Altamira and Lascaux) and the damage that resulted, those caves were closed, and strict regulations were set for the ones that remained accessible; their climate is monitored and the number of visitors is strictly limited.

To preserve some of the better known and vulnerable rock art sites, faithful substitutes have been made. Over the past thirty years, more than two hundred thousand people a year have visited the replica of Lascaux, called Lascaux II. In Spain, the replica of Altamira enjoys even more success. The excellent Prehistoric Art Park of Tarascon-sur-Ariège in the French Pyrenees, with replicas and photos of rock art found in the area, opened in 1995. Other projects are under way, including one in the Ardèche in southeastern France, focused on Chauvet Cave. An ambitious museum and documentation center at Teverga, near Oviedo, Spain, which will feature European Upper Paleolithic rock art, is to open in 2007.

When rock art sites number in the hundreds in an extensive area, it is sometimes possible to protect the whole area rather than individual sites. Five examples—all on the World Heritage List of UNESCO—come to mind because of the excellence of the art and the efficiency of its preservation.

In northeastern Brazil, the Serra da Capivara National Park includes four hundred fifty painted shelters. The park is entirely fenced, and guards monitor its entrances. The environment—flora and fauna included—is as well preserved as the art itself.

A detail of the large panel at Nourlangie Rock, in Kakadu National Park, Australia. Rangers monitor some of the most significant rock art sites in the park. *Photo:* Jean Clottes.



An enhanced engraving of a man with bears at the site of Alta, Norway. At one time, a number of engravings on exposed rocks in Scandinavia were repainted with biodegradable paint, in order to make the images more visible to visitors. *Photo:* Jean Clottes.

A wasp's nest covering a hand stencil at Anvil Creek in the Selwyn Range in Australia. This is an example of the kind of natural damage to rock art surfaces that can be controlled, as opposed to the slow evolution of the rocks themselves, about which little can be done. *Photo:* Jean Clottes.

Some of the better-protected rock art sites include (but are by no means limited to):

Tassili n'Ajjer, *Algeria*

The Drakensberg, *South Africa*

Twyfelfontein, *Namibia*

Peterborough, *Ontario, Canada*

Range Creek, *Utah, USA*

Helan Shan, *Ningxia, China*

Bhimbetka, *Madhya Pradesh, India*

Naquane and Luine parks, *Valcamonica, Italy*

Mercantour Park, *Alpes-Maritimes, France*

Rio Martín Park, *Aragon, Spain*

Laura area, *Cape York, Australia*

In Mexico's Baja California, accompanied by local guides, one can visit the rock art sites of the Sierra de San Francisco with a special permit from the Instituto Nacional de Antropología e Historia. In northern Australia, Kakadu National Park occupies an extensive part of Arnhem Land, and some of its best sites are monitored by rangers. Foz Côa in Portugal is guarded and can be visited only by appointment, with guides provided by the site's documentation center. The thousands of petroglyphs of Alta in northern Norway are within the bounds of a specially built museum. Visitors can easily see and photograph them along wooden passageways that do not detract from the natural surroundings. Other examples of efficient protection of art exist in Africa, the Americas, Asia, Europe, and Oceania (see sidebar).

The environmental, geographical, and cultural conditions of rock art are so varied that no fixed, intangible rules are applicable to all. For example, in Scandinavia, the art is scattered over thousands of accessible sites, only a small percentage of which are marked and provided with information panels. Since weather is overcast for long periods in this region, many visitors cannot photograph or even see the petroglyphs. To avoid visitor frustration and destruction from visitors rubbing the images with a stone or with chalk to enhance the art, curators used to paint the most visited petroglyphs in bright colors, using biodegradable paint—a method that seems shocking because it runs counter to the principle of not touching the art. After being criticized, curators in several areas abandoned this approach. Unfortunately, this choice led to new damage to the art.

All rock art sites open to visitors are in danger of vandalism. When the art cannot be physically protected, as are the painted caves, or watched over by guards, one must appeal to visitors' sense of responsibility and take whatever measures may diminish risks. Stone pathways, or even inexpensive symbolic protections like ropes between poles, are used in many places to contain visitors to prevent them from getting dangerously close to the art, and from trampling fragile archaeological surfaces.

Steps for the Future

Despite all the good work, huge losses to our rock art heritage are foreseeable. As a consequence, we must apply our efforts in two directions: first, to better protect the art and eliminate or at least significantly diminish the impact of natural and human destructions; and second, to safeguard knowledge of the art in case the worst should come to pass.

Education and knowledge are essential, including relentless educational efforts directed at the general public, along with pressure on governments and decision makers to provide and above all enforce legislation for the protection of the art. These are the aims.

As for promoting recognition of the immense cultural value of rock art worldwide, one way is to propose major rock art sites for the World Heritage List of UNESCO, thus bringing the sites into the international limelight. To get on the list, a site must not only be exceptional but also well preserved and well managed. The burden is on the governments of the states where the art is located if they wish to gain the coveted honor and reap the economic benefits.

With the increase of rock art tourism, special efforts should be made to partner with tour operators and guides, as well as with local populations, who are better able than anyone to preserve the art and become custodians of the site. The cultural value of the sites is reinforced by linking preservation of the sites to a community's economic prosperity. A good example of this is the management of visits to the rock art of Baja California, which are handled by paid local guides. Workshops for those directly engaged in rock art management and conservation are another practical step to be encouraged.

Last but not least is the problem of data collection and the preservation of knowledge. UNESCO's World Heritage Centre and ICOMOS (the International Council on Monuments and Sites) have started work on assessing rock art in Central and South America, before doing so in other continents. The situation of databanks is extremely disparate, from countries where hardly any information on the art is recorded, to others where the art is systematically registered by official or semi-official departments. As to the ethnology of the art, when any exists, it is rarely recorded in the same way as the images.

Also lacking is a world rock art museum. Such a museum would serve several purposes. First, it would constitute a growing archive for the future. Second, it would act as a fount of information on how to collect and store data—adapted to the economic conditions of the various countries, from the most sophisticated methods (e.g., laser recording in 3-D) to the most economical (e.g., tracing by nondestructive methods). Third, it could be a center for training researchers, managers, rangers, and guides. Fourth, a rock art museum could make rock art panels from around the world available for public viewing; current replication techniques (e.g., holograms, 3-D, laser, and photogrammetry) offer the possibility to create life-size replicas of tremendous quality, such as the ones at Lascaux, Altamira, Niaux, and Teverga.

Taken collectively, the above measures could advance preservation of rock art while raising the awareness of one of the most spectacular cultural achievements of humankind.

Jean Clottes, a leading expert on rock art, has authored or edited twenty-three books and more than three hundred fifty articles on prehistory and prehistoric art.

Preserving a **Worldwide** Heritage

A Discussion about **Rock Art** Conservation

Dialogue

Rock art can be found throughout the world, in great variety—and often in great risk. What are the most serious threats to this ubiquitous form of human creativity? In what ways are these threats being addressed? How important are legislation and education in protecting this heritage? Three professionals with backgrounds in both archaeology and rock art discussed these questions and others with **Conservation.**

J. Claire Dean, an archaeological conservator in private practice, is a member of the Society for American Archaeology's rock art special interest group, and has served on the board of the American Rock Art Research Association.

Josephine Flood is the former director of the Aboriginal Environment section of the Australian Heritage Commission and the author of a number of books dealing with Australian rock art and prehistoric Australia.

Jo Anne Van Tilburg is director of the Rock Art Archive at UCLA's Cotsen Institute of Archaeology. She is also the director of the Cotsen Institute's Easter Island Statue Project.

They spoke with Neville Agnew, principal project specialist with GCI Field Projects and head of the Institute's Southern Africa Rock Art Project, and with Jeffrey Levin, editor of **Conservation, The GCI Newsletter.**

Jeffrey Levin: *I think it would be useful to start by defining rock art.*

Jo Anne Van Tilburg: Rock art is basically symbols placed on geological elements within the natural landscape—symbols that are agreed to contain evolved or traditional cultural and/or religious meanings.

J. Claire Dean: There are common names for rock imagery, including *petroglyphs* and *pictographs.* I also include in this what some have called *geoglyphs* or *ground figures,* such as we see in California's Mojave Desert area and elsewhere in the world.

Josephine Flood: I have had to write short definitions for glossaries, and my shortest is "symbolic markings on rock surfaces." A slightly longer one is "symbolic pictures or marks made on a rock surface." One would have to include things like abraded grooves and cupules, which are small, cup-shaped depressions made in a rock surface. These are nonutilitarian. They're often on the walls or ceilings of rock shelters and are the by-products of ritual. In Australia, we do know some of the rituals involved, which might be rainmaking in the case of abraded grooves, or, with cupules, rituals to bring out the life essence from a sacred rock, which arises from the rock as rock dust when the rock is hammered with another rock.

Levin: *We find rock art on just about all the continents of the world. Is there another form of art that has the same universality?*

Flood: I think it's unique.

Dean: I think, in general, it is.

Neville Agnew: *I think the uniqueness of rock art, as a manifestation of human expression, is its deep antiquity and its geographical universality. It's the essence of human expression in various forms and ways over the entire span of human existence and in every part of the world. I do think that the word* **art** *is sometimes misleading. Rock art, although often beautiful, is actually more* **art** *as in the word* **artifact.**

Dean: The use of the word *art* is something I have a particular beef about, and this comes directly from the folks that I work with. The tribal elders in the region where I live in the Pacific Northwest asked me not to use that term, because they find it offensive. That is the case elsewhere, although dislike of the term is not universal.

> "It's been demonstrated in many places that local involvement makes an enormous difference."
>
> *— J. Claire Dean*

Personally, I am uncomfortable with the word *art* for this type of work and use the term *imagery* instead, partly in deference to my elders but also because my work has taught me that there is something else here.

Levin: ***How much of what we would call rock art exists today in places where it still has meaning or function for native peoples?***

Dean: It all has meaning and function to somebody. We underestimate how much of it is still in use. I work mostly in North America, and I would say that the bulk of it is actually of importance and of use to some native peoples somewhere. The imagery may not have been made by their cultural group—it may have been made by a group no longer there—but they consider it to be important and sacred.

Flood: In Australia what we would call rock art is still being made, which is quite exciting. The last rock painters have died—however, when people visit a site that has meaning for them, they tend to leave what you might call a visiting card in the form of either a hand stencil or, in soft rock, of abrasion and rubbing of a groove. That is the mark that they have been to the site. I really prefer the word *markings* to *rock art* because it encompasses the whole field. Art is an alien concept to Aboriginal Australians. There is no word for art in any of their two hundred fifty languages. There are words for paintings and engravings but not for art or markings in general.

Van Tilburg: I wish in a way we had never coined this term *rock art*. Art, in my definition anyway, is subjective self-expression. I don't believe that most of what we see in rock art is subjective self-expression. It's more of a shared expression of that which binds people to a community and to a place, and as such it becomes or encompasses the larger, collective symbology.

Levin: ***Well, for the purposes of this conversation, I'll stick with* rock art,** ***since that's the term most commonly used. I'd like to address the nature of the major threats to rock art around the world. Obviously these can differ from place to place, but are the major threats primarily natural or human?***

Van Tilburg: At Little Lake, a very large site that we've been working on for some time in the Owens Valley in California, the land itself is protected, and therefore, human intervention, in a destructive way, is sharply limited. There are, of course, natural threats to the continued integrity or existence of the rock art.

Dean: Unfortunately, dealing with vandalism and human impact takes up most of what I do. Sites worldwide are, of course, subject to natural deterioration, unless they've been removed from the outdoor environment and brought inside. Even if we put a structure over a site to protect it, we're not completely sealing it in. The natural environment is ever present. Folks forget that often the very places that images are located in—a rock shelter or a cave or a cliff—were formed by and were subject to natural deterioration before the images were created. That natural deterioration is continuing. There are limited things we can do to mitigate it. It's often inappropriate and frankly pointless to try to stave off natural deterioration.

Agnew: ***It is indeed futile in the long term to try to stave off deterioration, but it's still incumbent on us to find ways to slow rates of deterioration, which can vary enormously. One of the things not adequately studied is the rate of deterioration of rock art.***

Dean: Yes, there are ways to attempt to mitigate natural deterioration—and they are called for—but overall it is going to continue despite efforts to stop it. The human threat is the biggest and growing one, particularly vandalism. But there's other deterioration that takes place at sites, such as simple wear and tear as people visit. It's not intentional—it's what comes with the territory when folks visit sites in large numbers. And there's the growth of things such as ecotourism. We've got cases of visitors being brought to sites where there have not been good management plans.

Flood: Our Australian sites suffer badly from natural causes. As for human activity, we have extremely good legislation in Australia, on a state-by-state basis, which provides blanket protection for all rock art sites. We also have developed education programs, which we've done through film and written materials in schools and elsewhere, to teach people the value of it. There has been almost no

graffiti in Australia since the 1960s or 1970s. But the problem we've got now is that because of education and the legislation with heavy penalties, people have gone back and tried to rub out their names written on a site. We've had some damage there. But human activity mostly is not a problem in Australia. I've been shocked as to how poor your legislation is in North America.

Dean: We have legislation in the United States, but part of our problem is enforcing it: having enough rangers to patrol places and having judges and district attorneys willing to back cases and prosecute them. In some areas we can get cases brought to court fairly regularly. In others, it's near impossible. We need a lot more education for the general public. In areas where education has been done locally, it makes a difference.

Van Tilburg: If we approach the problem of conservation from a preventative point of view rather than from a reactive point of view, then we might think about rock art as if it were a collection in an outdoor museum. If we took the approach that we have a body of work worth protecting, and we're the curators of it—we would then need to do a kind of risk management assessment. We would have to look at what this collection consists of and evaluate the threats it faces, then create an action plan. To do that, we have to quantify and prioritize risks, and then we have to allocate scarce public resources to the protection of this collection. In order to do that, we have to have the public on our side. The public has to be educated as to the value of this collection.

Agnew: *I'd like to go back to Josephine's observation that education has been effective in Australia. Is this a focus in the schools? Or through media? And who funds this type of education?*

Flood: I worked for the Australian Heritage Commission, and this is one of the things we tried to do. Our Aboriginal studies included educational modules written on conservation, heritage protection, and rock art. We got those into the schools, but also out at the sites themselves, because there are always people whom the message hasn't reached. Many of our sites are not in national parks and are very open to damage. What we do is to put a lengthy sign on site, which describes the site's significance and says firmly, Please Do Not Touch. In many cases we put a little rope barrier in front of the site—anyone could step over it, but visitors tend to police one another. There are all sorts of things you can do to increase public awareness without spending vast amounts of money. Of course, things like heritage programs on television are really important.

Agnew: *Were those funded by the Australian Heritage Commission?*

Flood: Some, yes, but educational authorities—and we have an authority in each state that is responsible for the preservation of these sites—have done a lot, as well. Producing kits for schools has been one of the most effective things.

Van Tilburg: When it comes to the allocation of scarce public resources, the American public, at least, isn't happy having their resources allocated to sites they're not allowed to visit. The public's capacity to participate in the educational effort of preservation may be limited in part by some of the legislation that has been enacted.

Dean: I don't think it's the legislation. I think it's agencies not having enough resources to do education and to provide the necessary protection. The other way to protect a site—make it out of bounds—doesn't always work. I travel all over the country so I've seen things happening in different places in different ways. What works in some cases can be tried elsewhere, and it won't work at all. Why that is the case is never very clear.

Levin: *Is involving local communities one of the approaches that's more universally effective in protecting a site?*

Dean: It's been demonstrated in many places that local involvement makes an enormous difference. A number of states in the U.S. have a site-stewards program. I think the first one was set up by Peter Pillis in Arizona [Arizona Site Steward Program], and it's made a huge difference to the condition of Arizona sites. And most of the people who are doing site stewardship work are not culturally connected to the sites that they're looking after. They invest time in a place, they feel they have a stake in it, and the idea of protecting it becomes central. Of course there are places where putting in a site-steward program is extremely difficult because many of these sites are out in the boonies, and you can't find volunteers who can check a site. It's not that easy because of distances and access issues. In North America, too, this business of access runs smack into some concerns of native communities who have some strong opinions about who should take care of sites, how they should be cared for, and whether there should be access at all.

Levin: *Josephine, is public access an issue in Australia, where so many sites have continued significance for native peoples?*

Flood: If sites are on Aboriginal land, you have to get special permission, so access is controlled by the traditional owners or custodians. Some sacred sites are closed to visitors but Aboriginal owners are proud of their rock art and keen to have some sites open to visitors with their own people employed as guides and rangers. In each region in Australia we have certain sites that are open to the public, especially in large national parks and in small regional parks. They are well set up for visitors with signs and the National Trust–style step-over barriers. You can't have rangers at every site, so we use education of the public and also informative signs at the site, which tell you what to do and what not to do. People tend to educate one

> "We need to enlarge the strategies we have for asking the public to invest in site preservation."
>
> —*Jo Anne Van Tilburg*

another, particularly if you get to the youngsters and teach them in school to look after their cultural heritage.

Van Tilburg: I think the difference between the U.S. and Australia, perhaps, is that a lot of rock art, in California at least, is on land not open to the public for any reason. So we don't have many opportunities in California to offer the public organized, educational, and holistic presentations of what individual sites are about and their value to the community. For example, the California Department of Transportation plans to set up a public display area in San Diego County describing historical attractions available to visitors. Among those attractions are rock art sites. They would like to have images from the UCLA Rock Art Archive that describe sites located on public land, protected, and available to visit. We started doing some research, and do you know how many of those sites there are? Hardly any. So I think we need to produce more and more accessible information. We need to enlarge the strategies we have for asking the public to invest in site preservation. We all have to understand that if we're going to use public funding to protect rock art sites, we have to provide limited but reasonable public access.

Dean: As I understand it, the original mandate for both the U.S. Forest Service and the Bureau of Land Management did not really include recreation. It was economic. The use of the land has changed since those agencies were formed, and so we've perhaps got a situation where we have agencies trying to educate themselves because their traditional mandate has been to manage the land for reasons different from the ones they're being asked to consider at this point. The U.S. National Park Service is a little different, because Park Service land has had public access.

Van Tilburg: I agree. The National Park Service has good models for how to do the sort of thing that we want to see done—open some sites for educational purposes, provide site stewards, and involve the local community, including a native community with ethnographic connections to the site. We have to think in terms of adapting models from other types of archaeological sites to rock art sites.

Dean: Certainly the tribal groups that I work with would have grave concerns about increasing access to sites on federal or state land that are culturally associated with their groups. I know no one is suggesting that people be excluded, but I think it's an area where there would be a lot of resistance for many reasons, both cultural and historical. It's something that we have to seriously consider.

Levin: *We've talked about some of the strategies that have been effective: local community involvement, general education, and installation of modest barriers at sites. Are there other strategies that have been effective?*

Flood: As I've said, public education has been incredibly important in Australia. We have good legislation in each state, but what really prevents people at remote sites from cutting out rock art and selling it or taking it away for themselves are the programs on television and the education in schools about how this is illegal and wrong, and that there are heavy penalties. When cases do come up, which fortunately are rare, the media give them a lot of publicity. The media are on our side on this one.

Dean: In North America, looted rock art is a problem. If you talk to law enforcement agents who work these cases, they'll tell you there is a black market for rock imagery, and there have been prosecutions and apprehensions for the sale. It is completely illegal when it is taken off federal land and state land. There is also, I believe, some legislation that protects Native American religious sites [Protection and Preservation of Traditional Religions of Native Americans]. One of the problems that we have in prosecuting cases is that sometimes we're asked to come up with a market value for the stolen materials, which is difficult to do when the market is illegal to start with.

Agnew: *Do we have any idea what people are paying for looted items?*

Dean: I get asked that question, but I have absolutely no idea. It's probably something that I ought to know, but I find it so abhorrent, I have not chased it down. There are a couple of agents within the federal service who deal with that question, and I usually refer people to them.

Van Tilburg: One protection for archaeological sites in general, and rock art sites in particular, is designation as a National Historic Landmark. From there, interested property owners or community groups may be eligible for Save America's Treasures or other funding. At least one of the largest petroglyph sites in California is on the National Historic Landmarks list. However, it is time-consuming and expensive to put together the background information required to have a site named a national landmark. It takes a lot of energy to make it happen. But the various regional

offices of the Park Service are very open to working with community groups and individuals to raise archaeological or rock art sites to the status of a national landmark.

Dean: That's a great idea, Jo Anne, but I think that Josephine has nailed it—it's general education that is needed.

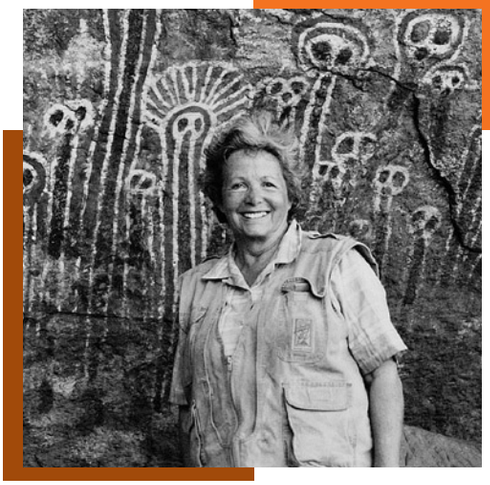
Van Tilburg: Educating the public in the United States has been a topic of conversation among rock art researchers since I became involved in the field in the 1970s. We continue to request this kind of thing from agencies, educators, and other organizations. We continue to provide information to the public schools. But it's not on the radar of most educators, and for good reason. Most of them are in urban areas and are dealing with issues they feel are more pressing. So it behooves people working in rock art to find a way to make it relevant to the contemporary world. One way to do that is to take it out of the realm of secret information, in terms of site locations, and bring it into the full light of day. Rock art speaks to the universal. It is the one artifact that can be visible to the public and speak to the public. Dirt archaeologists learned in the 1960s that in order for archaeology to thrive, the public needed to be brought into the loop. Archaeology, in general, has benefited from that. Rock art has always been an avocational field, a place where people who had a peripheral interest in archaeology became experts in rock art. Now rock art is being brought back into the realm of archaeology—and also into art and art history.

Agnew: *I'm pleased to hear you say that rock art is being brought back into the realm of archaeology. I actually think that archaeologists have ignored it, despite the fact that rock art is of the archaeological record. Archaeology enjoys much public cachet but rock art doesn't, and yet rock art has its own visual glory, often capable of speaking directly to the human experience.*

Dean: I was a dirt archaeologist before I became a conservator, and I think one reason that archaeologists ignored rock art is that you weren't able to analyze it in a physical way like the materials that archaeologists traditionally find—you couldn't date it and you couldn't weigh it. Rock imagery is something we just didn't do, and so it became art history. Of course, the pure art historians took one look at it and said, "No, thank you."

Flood: In Australia, rock art is studied as part of archaeology. I started as a dirt archaeologist, but when I began working on Aboriginal sites, the two things were regarded as closely linked. The integrated approach works best. Rock art studies being taught in universities are closely linked with archaeology, which means that archaeologists get interested in the preservation of rock art sites.

Dean: I've been working in the U.S. for twenty years, and it's definitely better now in terms of the involvement of archaeologists.



> "There are all sorts of things you can do to increase public awareness without spending vast amounts of money."
>
> *—Josephine Flood*

There has never been a time when we've had more graduate students in archaeology programs wanting to do rock image studies of one form or another. Interest has increased, thanks to the work of many people.

Van Tilburg: At UCLA, there are few students interested in rock art. But recently, in addition to improved field methods of recording, there are more theoretical bridges between anthropology and archaeology and rock art—more ways in which scholars are using the tools of anthropology and the scientific method to understand rock art.

Levin: *How well have we documented the rock art that is out there?*

Flood: We have a national archive, which is the Australian Institute of Aboriginal and Torres Strait Islander Studies in Canberra. I was very involved in this when I worked for the Australian Heritage Commission, and we produced forms for recording sites that required detailed information. The institute also has wonderful photo archives, and it keeps the original photos and films in controlled conditions. The Institute was very keen that people use top-quality cameras and films. These archives are now being digitized, but because permission from Aboriginal elders is required before their use, they are not easily available even to bona fide researchers. On the topic of archives, I would like to suggest that perhaps the Getty Conservation Institute could establish an international repository for rock art photographic collections that could rise above state and national politics in countries like Australia.

Van Tilburg: A significant thing about digital resources is that you don't need an international repository, per se. Each institution, no matter where it is located, just needs to have a server once its files are digitized. Access can be given in kiosks anywhere in the world. Someone can, with the proper ID, access the files and use them for research or conservation. So the repository doesn't need to be a physical place. The UCLA Rock Art Archive, which was the first such archive at the university level in the Western Hemisphere—

if I believe what I was taught as a student—has in its files images and paper files dating back roughly to the early 1920s in California, and other, more limited files from several other states. We've digitized a large portion of that. Recently, when I was at the National Museum of the American Indian in Washington DC, we talked about how that museum might work with UCLA and the archive to allow this kind of kiosk establishment to be set up there, and whether the Smithsonian would be a proper server for that sort of thing. It takes leadership, and obviously the first step is to digitize the files. The technology we use at the archive to digitize files is primarily to preserve them, because they were previously stored in nonarchival conditions. If we were to do it today, we would use different and better technology. You're constantly trying to catch up. In my opinion, the best solution is to have this material on a server, internationally available to researchers. This is what must be done for this material to be useful.

Dean: One problem is that we have no standards for recording. You basically pick and choose, and this can make it difficult to use the data and do any comparison work. We're also shortchanging our resource because we don't have standardization. In one project that I'm in the middle of writing up right now, the same site has been recorded three times by three different groups of people. You'd think it was three different sites. You wouldn't realize it's the same darn place until you pull a photograph out.

Van Tilburg: Right, but think back a hundred years or more, to when the Smithsonian Institution sent an army of ethnographers into the field to record the language and customs of indigenous American peoples. There were standards. But you can go into the Smithsonian Institution archives and you'll find that some kept to those standards, recording everything carefully, and others piled everything in a shoebox. Standards are important, but they won't be adhered to by all people, and that can't be the rationale for accepting or rejecting data into an archive. If that were the case, we wouldn't accept anything at the UCLA Rock Art Archive.

Dean: I agree it can't be the rationale, but we should still make some effort to improve the standards for good documentation, and to try to produce some kind of guidelines that eliminate a lot of the problems.

Agnew: *We've been talking mainly about North America and Australia but not Europe, where the rock art is in pretty good shape. In Africa, it is not. Africa is one of the great repositories of rock art in the world—in the Sahara, and southern Africa, and in places like Ethiopia, where there is wonderful rock art that is hardly recorded and, I am sure, disappearing as we speak. I would appeal for better cooperation between archives and research institutes to address the global issues of rock art preservation.*

Van Tilburg: I like the idea of a neutral place that might be able to call a meeting and explore options that challenge us in the field to rise above territoriality and provincial concerns for the greater good, which is worldwide preservation of this precious heritage.

Dean: That kind of international cooperation could increase general awareness and aid in areas of the world that we haven't talked much about, Africa being one of them. I was recently in Yemen, and there are some extraordinary sites in Arabia. But how many of us have even seen photographs of them? Increasing general awareness and education is necessary to provide protection for this resource.

Van Tilburg: I would note that the Trust for African Rock Art [TARA] is doing something to help in Africa. As for documentation, it is clearly the key to good site conservation. Preservation comes with good information about the nature of the site and an assessment of the risks that it faces.

Levin: *One thing we haven't talked about is training in rock art conservation.*

Van Tilburg: Maybe Claire can speak to this, but conservation-methods training in rock art is a key issue, I think.

Dean: I couldn't agree with you more—because one day I'd actually like to retire. Our conservation students have to do internships in their training, and I get inquiries from students every year wanting to do internships with me. Sometimes that's possible, but frequently it isn't, because they have to do a yearlong internship, and sometimes I don't have enough work to feed me, so hiring someone else is a little tough. But they're interested. We have to build on that interest, and that's going to take a certain involvement from our conservation training programs. I'm delighted that the UCLA program [the UCLA/Getty Master's Program on the Conservation of Ethnographic and Archaeological Materials] is getting off the ground, but we need more than that. We need the programs back east, which are primarily fine-art based, to take more of an interest. Over the last few years, they have improved the archaeological and ethnographic components of their training, but they need to do more.

Van Tilburg: The UCLA program is in the forefront of introducing the idea of conservation to people who have archaeological backgrounds, and that kind of interdisciplinary cross-pollination is very useful. Once we all have the same vocabulary, we can be on the same page and effectively address these important issues.

U.S. Rock Art in the Twenty-first Century: Problems and Prospects

Rock paintings at Horsethief Canyon, Utah. These pictographs, which date to the Archaic period (five thousand to fifteen hundred years ago), are characteristic of the shamanistic rock art that was commonly made by North American hunter-gatherer cultures. *Photo:* David S. Whitley.

By David S. Whitley

The last two decades have witnessed a dramatic change in the status of North American rock art, expressed in the United States by numerous research advances and a greater concern for conservation and site management. While these improvements are cause for optimism, serious problems persist. Any overview of the current status of U.S. rock art necessarily must consider the tension between newfound success and ongoing challenges.

The United States has a particularly rich record of rock art. For example, there are about fifteen hundred registered sites in California alone, with equivalent or greater numbers in other western states. In part, the wealth of sites results from relatively recent Euro-American colonization, which only occurred in the late nineteenth century in much of the West. In part this abundance also reflects the fact that rock art was an important tradition among most Native American tribes.

The result is a wide distribution of sites across the entire country, with art dating over a substantial time span. Chronometric dating and other forms of evidence suggest that some of this art was created as early as the Terminal Pleistocene (about ten thousand years ago). The ethnographic record and occasional historical subjects (e.g., European-introduced horses) indicate that its creation continued, in many locations, into the late nineteenth century.

There is also diversity in site type and function. Rock art in the United States includes polychrome and monochrome rock paintings; engravings, incisings, and geoglyphs, in the form of intaglios; and rock alignments.

The ethnography also points to other significant facts, especially for site management. Although the origin and meaning of the art vary regionally, it apparently resulted everywhere from ritual practices—it was a product of shamanistic religions in the hunter-gatherer Far West, for example, and was intended to depict visionary experiences. Depending upon tribe and context, it was made by puberty initiates during group or individual ceremonies, by shamans on solitary vision quests, and/or by nonshaman adults during life crises. In contrast, the pueblo-dwelling Hopi farmers of Arizona engraved personal clan symbols during ritual pilgrimages, illustrating the fact that priestly religions, most commonly found among settled farmers, made rock art unrelated to vision questing.

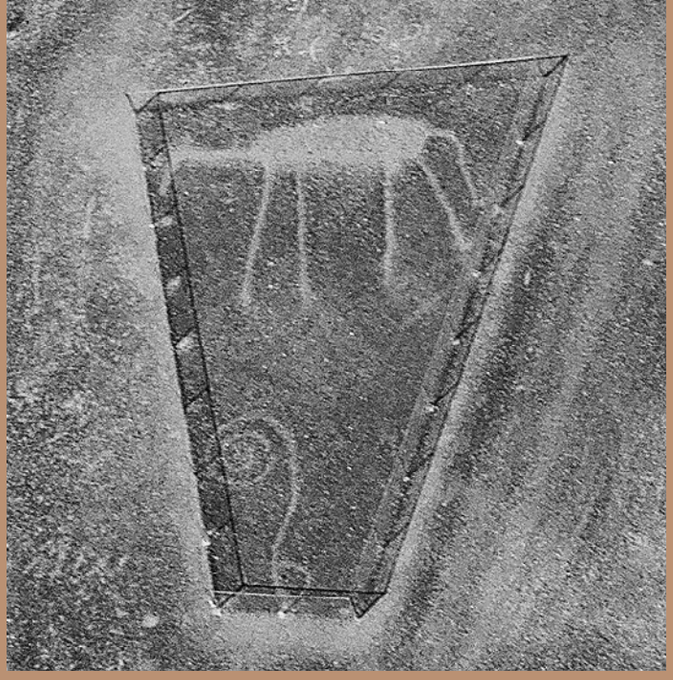
Regardless of specific origin, contemporary Native Americans have long-standing cultural connections to and interests in these sites. Work at U.S. rock art sites requires juggling contrasting research, management, and conservation agendas, and an accommodation of Native American religious and heritage concerns.

Recent Research Advances

The good news about U.S. rock art research is the numerous recent advances in the field. Since 2000, there have been about a dozen regional and topical summaries, most of which emphasize ethnographic interpretation—the use of anthropological texts and consultations with contemporary tribes—in order to give a Native American voice to the interpretation of the art. Rock art research

has also been marked by the development of a series of direct dating techniques. Marvin Rowe at Texas A&M University has led research on the dating of paintings, combining an innovative (and potentially nondestructive) plasma carbon-extraction system with accelerator mass spectrometry (AMS) 14C dating (which accommodates the dating of very small organic samples). His system can potentially date any color pigment containing an organic binder, moving AMS pictograph dating beyond charcoal-based black pigments, to which it was previously restricted.

Ronald Dorn at Arizona State University, Tempe, and Tanzhou Liu at Columbia University have sparked the revolution for the dating of engravings, in the process developing a half dozen independent techniques useful in desert environments. Liu's most significant recent advance involves varnish microlamination (VML) dating. This method is based on the fact that natural rock varnish coatings (the product of hard-fixed airborne dust particles) develop over time in microstratigraphic layers that are themselves influenced by major changes in climate. These layers can be identified in thin section, and once the microstratigraphic sequence for a region is defined and calibrated, it is possible to relate the established sequence to thin sections from archaeological specimens (in a method similar to tree ring dating), in order to bracket the age of the samples. The most recent VML dating breakthrough resulted from Liu's extension of his calibration from the Late Pleistocene and Terminal Pleistocene (before ten thousand years ago) into the Holocene (ten thousand years ago to the present), making it particularly useful for the majority of the North American archaeological record.



Aerial view of intaglios. These earth figures, or geoglyphs, located near Blythe, California, were created to commemorate mythic events and actors. Believed to be less than two thousand years old, they were placed at the locations of these mythic events along a ritual pilgrimage route used by Yuman-speaking tribes. *Photo:* David S. Whitley.

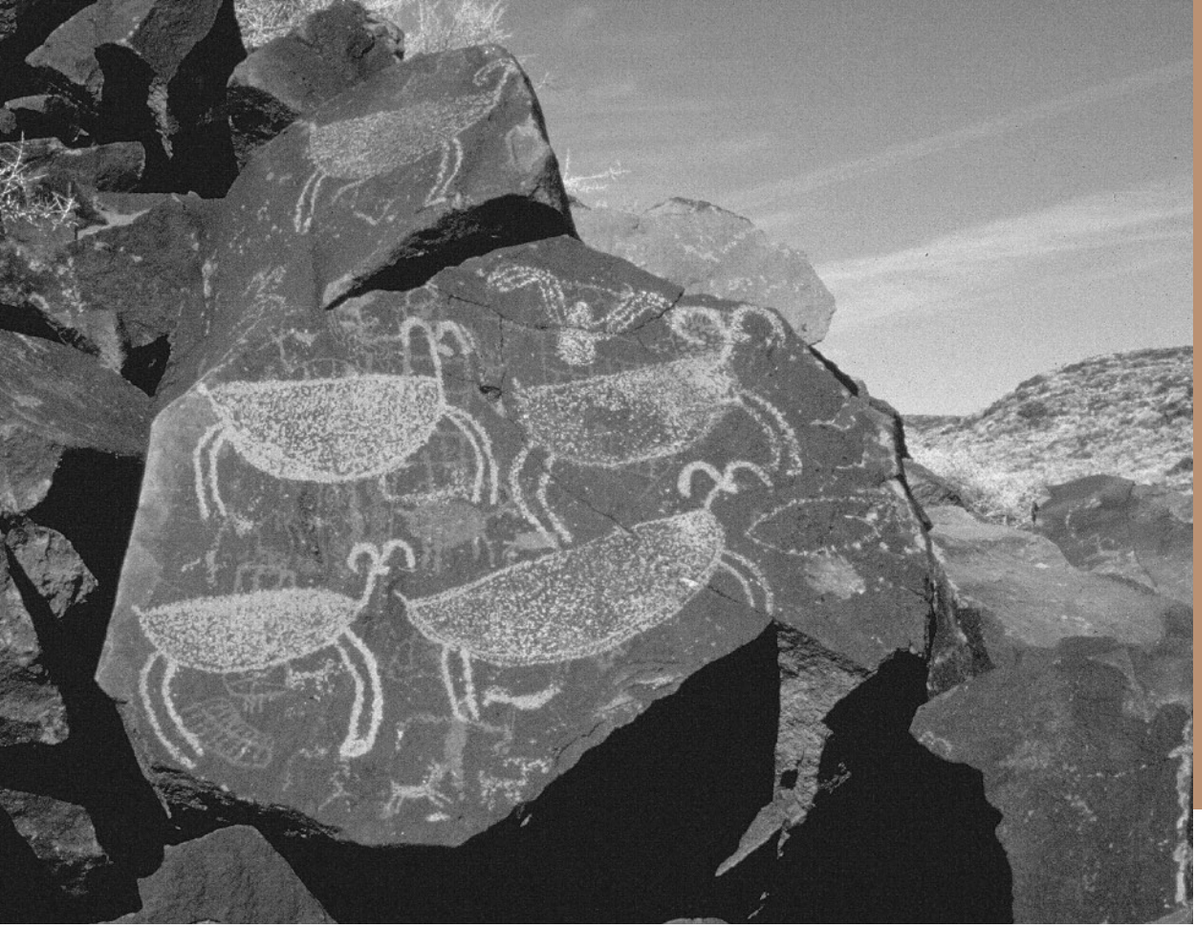
Petroglyphs from Willow Springs in northern Arizona. These engravings, made by Hopi Indians during ritual pilgrimages, depict the individual clan symbols of the pilgrims. Not all North American rock art is shamanistic in origin. This is especially true of rock art made by farming tribes like the Hopi. *Photo:* David S. Whitley.

Conservation and Site Management

Circumstances have also improved for site conservation and management, despite continuing population growth and urban and suburban expansion. One reason for this positive development is a changing site management paradigm. Until the mid-1990s, site management involved a one-size-fits-all approach predicated on secrecy: if site locations were kept secret, site safety could be ensured. This approach was a failure for a number of reasons, not least of which is that while visitor pressure certainly can be deleterious to rock art, it is not the only important factor in site preservation.

Since the mid-1990s, a substantially more proactive management approach has developed among those responsible for rock art conservation. This approach emphasizes in part the importance of controlled visitation to specific managed sites. An outstanding example is the program created by Peter Pilles for the Coconino National Forest in Arizona. Pilles developed a cooperative agreement with a for-profit tourist concern that includes rock art sites as part of its attractions, requiring that the business fund site conservation and management. Heritage tourism in this case not only promotes site preservation but also emphasizes the importance of rock art to local residents through its significant economic impact on local economies.

A series of recent and ongoing large-scale rock art documentation projects, undertaken in part to preserve the archaeological



Bighorn sheep petroglyphs from the Coso Range in eastern California. The Coso Range contains roughly one hundred thousand petroglyphs made between ten thousand years ago and the early twentieth century, over half of which depict bighorn sheep—a special spirit helper of rain shamans. These examples are thought to be less than two thousand years old. *Photo:* David S. Whitley.

information contained at the sites, represents a second positive site management and conservation trend. By far the most successful of these is the volunteer effort of the Oregon Archaeological Society (OAS) under the direction of James Keyser, former Pacific Northwest regional archaeologist for the U.S. Forest Service, with the active participation of a number of local Native American tribes. This project has involved the documentation of sites from Alaska to Montana, but the main emphasis has been on The Dalles region in the Columbia River Gorge, which contains one of the largest and most significant (but previously overlooked) concentrations of paintings and engravings on the continent. The work has included the active participation of a rock art conservator, Johannes Loubser, and has explicitly addressed site management and conservation concerns. It has also been conducted following a well-conceived research program that has guided the documentation effort. Although largely staffed by amateur archaeologists, the project has yielded an important series of professional monographs and papers.

Structural Problems and Solutions

Two final issues are important in any assessment of U.S. rock art. The first is the place of rock art in university curricula, because of the implications this has for future research and management. Despite recent advances, North American rock art is effectively no longer taught at American universities. As of 2006, no archaeology PhD program in the United States has a North American rock art specialist on its faculty. In comparison, thirty years ago the various campuses of the University of California employed five archaeologists with American rock art research interests. With the exception of dating research (conducted by scientists in geography and chemistry departments), U.S. rock art research and management are now the almost-exclusive purview of cultural resource management (CRM) archaeologists working outside of the academic system. The difficulty here is that CRM archaeologists are not in a position to train the next generation of U.S. rock art researchers. There is no guarantee—indeed, there is limited likelihood—that there will be a next generation of U.S. rock art researchers to build upon recent advances, given this circumstance.

The final issue concerns conservation, per se, and here there is more cause for optimism, despite the fact that not all of our conservation-related problems are solved. First, we have less than a handful of American rock art conservators. Second, we have tens of thousands of rock art sites, but very limited resources for their documentation and management, let alone conservation. Third, because of the vast site inventory, we have no real idea where the most significant conservation and management problems lie. The result is that most conservation projects are after-the-fact efforts—reactive rather than proactive. They represent the least effective use of resources, which would be better spent on preventing problems from developing in the first place.

Fortunately, a partial solution to the last two problems should be implemented soon. Ronald Dorn at Arizona State University

Enhanced image of a petroglyph depicting an extinct Ice Age North American llama, from the Rodman Mountains, near Barstow, California. Three independent chronometric techniques date this engraving to approximately eleven thousand years ago, suggesting that the making of rock art extends back to early human occupation of the Americas. *Photo:* David S. Whitley.

and Niccole Cerveny at Mesa Community College, Mesa, Arizona, have created an evaluative system that rapidly determines the relative condition of rock art sites using quickly trained field crews, and integrates the results into a geographic information system (GIS) database. Once implemented, the outcome will be a listing and mapping of sites, ranked in terms of relative degree of peril, primarily from natural processes.

As geomorphologists, Dorn and Cerveny are interested in rock weathering and its implications for rock art preservation. Their point of departure is the fact that different rock types weather in different but characteristic ways, and this influences site and panel stability and thus the safety of the sites. Their system is accordingly called a Rock Art Stability Index (RASI), and, while it emphasizes the weathering and mechanical stability of rock panels, it can accommodate documentation of other factors, such as vandalism. A trial training and field test, using undergraduate field crews, has demonstrated the practical utility of the index and the replicability of the results. The next goal of these researchers is to integrate RASI into community college curricula, as a response to an increasing demand for interdisciplinary science courses and service-oriented science field projects. The ultimate outcome of these efforts should be the identification of some of our more pressing rock art conservation and management problems, providing us with a better understanding of the sustainability of this portion of our cultural heritage and, from this first result, enhancing our capabilities for managing and conserving sites.

Two decades ago, North American rock art was something of an intellectual unknown. All we had then was a rudimentary understanding of its age and a limited knowledge of its origin and meaning. Although there is still much basic research to be completed, the situation has changed dramatically because of the current and very active generation of rock art researchers. We actually know more about the rock art of some regions today than we do about the remainder of the archaeological record. Documentation and site management have also improved significantly in recent years. Model projects, such as the OAS efforts in The Dalles region, have an important message: successful documentation is a collaborative effort requiring the contributions of research archaeologists, knowledgeable volunteers, conservators, and Native Americans. Our goals, in this sense, should be to preserve, protect, understand, and respect the sites. These aims require an interdisciplinary team effort and approach.

It remains to be seen whether we can successfully tackle the many conservation and management problems that still confront us—if only resulting from the very large number of registered sites. RASI, as a practical approach, certainly will not solve all of the problems that confront U.S. rock art. But it is an important initial step, partly because it will provide our first real measure of what some of those problems actually are. This development alone is cause for optimism, although, as suggested, some steps forward have been matched by partial steps back. We can only hope that the forward progress made in the last two decades will give us momentum to continue to improve the status of rock art into the future.

David S. Whitley has spent over twenty-five years in the field of rock art, working in western North America, southern Africa, and Europe; his most recent books are Introduction to Rock Art Research *and* Discovering North American Rock Art.

Microscopic thin section of the rock varnish that naturally coats rock surfaces in deserts, eventually covering the engraved portions of petroglyphs. The alternating layers are the result of major changes in prehistoric climate. The layering sequence for a given region is constant and can be calibrated using rock-varnish-coated geological surfaces of known age. Recent calibration for the last ten thousand years in California's Mojave Desert greatly enhances archaeologists' abilities to date petroglyphs using varnish microlamination dating. *Photo:* Courtesy of VML Dating Lab.

Building Capacity to Conserve Southern African Rock Art

By Janette Deacon and Neville Agnew

The rugged landscape of the Cederberg Wilderness Area has many rock shelters and overhangs, which were used by the San hunter-gatherers for creating rock art. *Photo:* Neville Agnew.

One of the greatest challenges for heritage conservation professionals is to develop strategies that find a balance between polar opposites. In the case of ancient rock art conservation (conservation of paintings and engravings on natural rock surfaces), we try to retain the significance of sites by protecting the original fabric on the one hand, while promoting controlled public access, on the other. This approach is undertaken with the knowledge that public access invariably places the rock art at greater risk from damage, but we are motivated by the fact that people will only care about the conservation of heritage places if they are aware of them.

In many countries the preferred option for protecting rock art is to avoid publicizing it, so that only those most interested will take the trouble to see it. While this reduces the risk of human-caused damage, the down side to this approach is that the general public is less likely to support public funding of rock art conservation if it remains unaware of the art's significance. Furthermore, in times of economic pressure, this option comes under strain as uninformed tourism operators, communities, property owners, and managers are tempted to consider ways of encouraging even the uninterested to visit the paintings or engravings, without first putting in place measures to protect the art.

Some important sites have been completely closed to the public, such as Cosquer, Chauvet, and Lascaux caves in France, but unless government funding is available to protect a site in perpetuity, this option is unsustainable—the cost of protection becomes too onerous, and tourism or neglect seem the only alternatives.

In places where it is common practice to generate income from visitors to cover the costs of site protection, *sustainable tourism* and *capacity building* have become accepted strategies in the current rock art conservation paradigm. Sustainability is more than economics, however. It includes social dynamics that involve all of the relevant people in decision making, as well as the development of appropriate conservation methods.

Paintings in the Zimri rock shelter in the Cederberg, illustrating the experience of shamans in altered states of consciousness. In this example, elongated human figures have wildebeest (gnu) heads. *Photo:* Neville Agnew.

Over the past two decades, the Getty Conservation Institute has facilitated conservation and training programs to improve the management of rock art sites, particularly in the Americas and in Australia. The lessons learned from these programs have been valuable in structuring the Institute's most recent involvement in rock art conservation—the Southern African Rock Art Project. The objective of this project is to establish a long-term program that will create momentum for best practices in rock art preservation, conservation, accessibility, and management in the southern African region, from Tanzania in the north to South Africa in the south. The project's strategy is to invest in people rather than in infrastructure, with the expectation that if enough people are aware of the fragility, meaning, and heritage values of the art, and are trained in the management and interpretation of rock art sites, it will be easier to ensure that best practice methods are implemented.

Building on a Regional Network

In 2003 the GCI commissioned a feasibility study to identify one or more nationally or provincially managed rock art sites in South Africa that could be developed for sustainable tourism and could serve as a model for similar sites in the region.

The GCI's work builds on the network already established by the Southern African Rock Art Project (SARAP), a regional cooperative that assisted countries in becoming signatories to the World Heritage Convention and in identifying at least one rock art site in their country for nomination to the World Heritage List. SARAP held a series of workshops on the nomination process, as well as courses on rock art site management plans and surveys in South Africa, Zimbabwe, Tanzania, Zambia, Botswana, and Namibia. Since SARAP's inception in 1998, rock art sites in South Africa, Botswana, Zimbabwe, Malawi, and Tanzania have been inscribed on UNESCO's World Heritage List, and another site has been nominated to the list by Namibia. Further workshops and courses will be arranged, as required, to make use of the expertise developed.

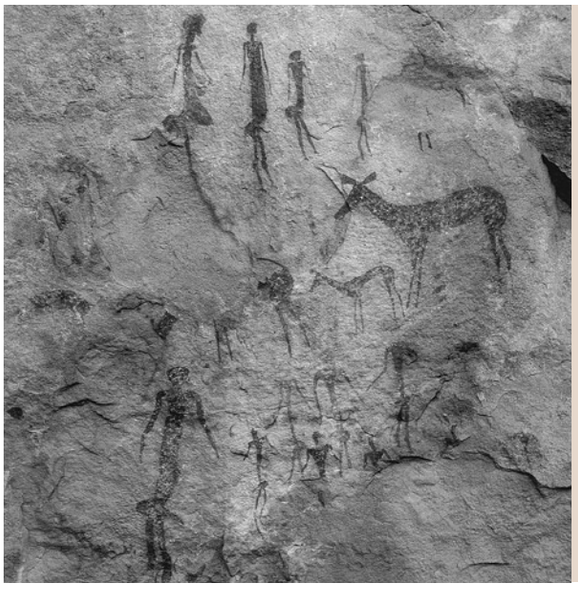
The intent of the GCI's feasibility study was to explore ways whereby the Institute's participation could strengthen and consolidate the SARAP network, and to study the possibility of establishing regular training opportunities to build capacity at one or more places where rock art (a) was already managed by national or provincial government structures; (b) was open to the public and significant enough to be a World Heritage, national, or provincial heritage site; and (c) could accommodate at least twenty trainees for courses and workshops.

At the completion of the study, two World Heritage Sites were selected: the Mapungubwe National Park on the southern bank of the Limpopo River, which forms the northern border of South Africa with Botswana and Zimbabwe; and the Cederberg Wilderness Area in the southwest of South Africa, about two hundred kilometers north of Cape Town. These sites were selected because they best fit the criteria of the feasibility study. They both:

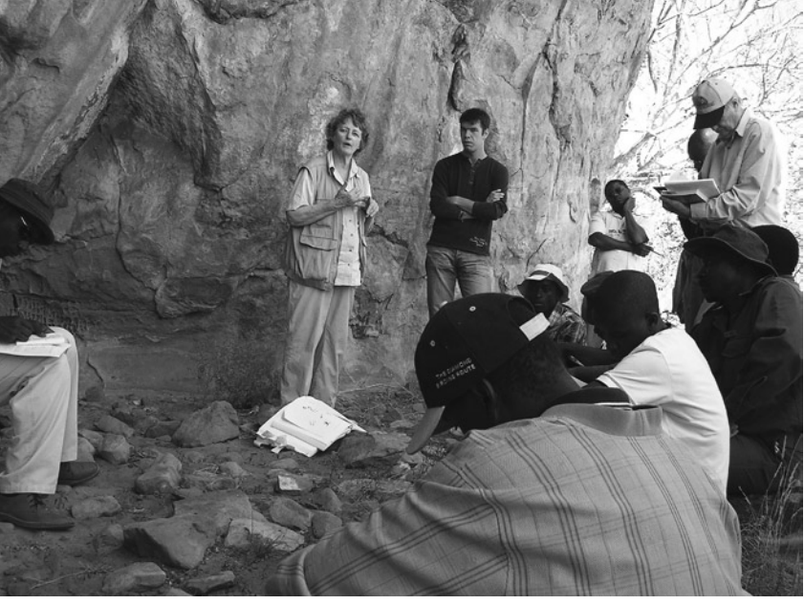
- have several paintings or engravings that offer high-quality rock art in reasonable quantity;
- are situated in a local, provincial, or national park with stable management;
- have an enthusiastic management structure that is prepared to offer quality assistance and commitment on a partnership basis;
- include some conservation problems that offer challenges for research and development;
- are reasonably easy to incorporate into existing educational and/or tourism structures in the region; and
- have enough challenges to warrant inviting rock art site managers from other southern African countries to participate in the development program. They would actively participate, establish mutual contacts, and see the evolution of a viable project firsthand.

Defining Social and Conservation Responsibilities

In August 2004 a meeting of relevant stakeholders in the Southern African Rock Art Project—including representatives of South African National Parks (SANPARKS); the Western Cape Department of Nature Conservation (CapeNature); the Clanwilliam Living Landscape Project based at the University of Cape Town; the Rock Art Research Institute at the University of the Witwatersrand, Johannesburg; and the Tanzanian Department of Antiquities—was held at the Getty Conservation Institute in Los Angeles to establish short- and long-term objectives for the project. Participants from



Elongated human figures and antelope painted in red ocher in a rock shelter in Mapungubwe National Park. *Photo:* Neville Agnew.



Trainees from the 2006 tour guide course at Mapungubwe National Park with instructor Janette Deacon. *Photo:* Trinidad Rico.

southern African countries, other than South Africa, attended the meeting with travel assistance from the World Heritage Fund.

As economic responsibilities at Mapungubwe and the Cederberg are handled by SANParks and CapeNature respectively, training, conservation, and stakeholder relationships were identified as the key issues that needed to be addressed at these sites.

At this meeting the following objectives were identified:

- create momentum to network and enhance the preservation, appreciation, and accessibility of rock art in a sustainable way;
- strengthen contacts between professionals in the southern African subcontinent; and
- offer opportunities for capacity building through workshops and courses.

The agreed-upon strategy at both sites is to arrange annual workshops and training courses to build capacity among staff in national parks and provincial nature reserves in all southern African countries and to also involve other stakeholders responsible for rock art promotion and management. The activities will be evaluated with input from the participants, in order to ensure that project objectives are met.

To achieve this, collaborative links were established between the GCI, the South African Heritage Resources Agency, SANParks, CapeNature, the Rock Art Research Institute at the University of the Witwatersrand in Johannesburg, and the Clanwilliam Living Landscape Project, in the Cederberg Wilderness Area.

Training Courses

The first initiative was a three-week accredited course in rock art tour guiding in August 2005, based at the Clanwilliam Living Landscape Project. The project was initiated by Professor John Parkington to inform local schools and the public about the archaeological significance of the Cederberg.

In conjunction with the Clanwilliam project, the University of Cape Town installed a dormitory, kitchen, craft shop, and lecture room, which are used to train local people in various skills, including crafts, catering, and tour guiding. These facilities were used for the nineteen tour guide course participants from the Cederberg area and surrounding districts. Most of the participants were actively involved in tourism, and several were representatives of the San community in South Africa; three were from neighboring Namibia, Zimbabwe, and Tanzania. The participants learned basic information about the past inhabitants of the Cederberg, how the rock art tradition fit into the bigger picture of Stone Age life, and how to identify themes in the rock paintings of the region. They also learned to identify major plant families, animals and their tracks, and geological formations, and they learned to talk about the history, knowledge, and memories of indigenous people of the area. Their knowledge level was assessed by the Cape Peninsula University of Technology through regular quizzes, a written examination, practical demonstrations in the field, and evaluation of communication skills. Seventeen participants received certificates of accreditation, and twelve are presently earning an income directly from rock art or related tourism. Of the remaining, four are employed as field rangers or site managers by CapeNature, and one is employed part-time as a translator at the South African San Institute.

The second activity was a two-week workshop on rock art site management plans, held August–September 2005 at Mapungubwe National Park. The twenty participants were drawn mainly from Mapungubwe and other national parks, and from provincial nature conservation and heritage organizations in South Africa, with four from Namibia, Botswana, Tanzania, and Zambia. They were divided into four groups, each group being responsible for drawing up a conservation management plan for a rock art site. An instruction manual was provided to allow participants to follow the process developed for heritage site management plans in Australia. At the end of the workshop, four complete draft management plans and four draft information leaflets were presented to the manager of the park for implementation.

The Mapungubwe workshop was aimed at a different management level than the tour guide course, and all the participants work either for a national or a provincial park with rock art sites. In their evaluation, participants were especially appreciative of the knowledge they gained about rock art and about the process for management planning. Their meeting with local stakeholders, such as property owners, academics, and community representatives, was also cited as a highlight because it helped them to identify the major issues regarding rock art tourism in the region.

In 2006 the venues for the two activities were reversed—the tour guide course took place at Mapungubwe, while the management-planning workshop took place in Clanwilliam. Judging from

the enthusiastic response of participants, a network of well-informed rock art site managers and tour guides will soon be operating in the southern African region in national and provincial parks that have rock art sites open to the public.

Addressing the Issues

The rock art of the southern African subcontinent has been securely dated as far back as twenty-seven thousand five hundred years before the present. It comprises a vast body of heritage sites, most of which date to between four thousand and one thousand years ago. This extraordinary wealth of heritage is at grave risk. Every year more sites are damaged or lost due to development, vandalism, and natural causes. This is a concern because part of the record of human occupation, way of life, and belief systems is being expunged.

The Southern African Rock Art Project is addressing these issues by building regional professional capacity, reaching out to local communities to train guides, and raising public awareness. In 2007, presentation and interpretation plans will be developed for selected sites at Mapungubwe and the Cederberg, to be implemented by the site authorities. Beyond that date an evaluation of the impact and sustainability of the initiative will be undertaken and disseminated regionally. Results of the evaluation will be considered in any subsequent initiatives.

Janette Deacon is the former head of the Professional Services Division of the National Monuments Council in South Africa and has long been involved in rock art site management in the southern African region. Neville Agnew is principal project specialist with GCI Field Projects and is leading the Institute's Southern Africa Rock Art Project.

Elongated human figures from the Zimri shelter in the Cederberg, only a few inches in size, showing the effects of weathering, including water leaching of pigment in the lower images. *Photo:* Neville Agnew.

Participants at a local stakeholders meeting held at Mapungubwe National Park. *Photo:* David Myers.

Mapungubwe National Park, which comprises about thirty thousand hectares, was where the first powerful indigenous Iron Age kingdom in southern Africa flourished. Established by the cultural ancestors of the present-day Shona and Venda peoples between 900 and 1300, it was a precursor to the better-known kingdom of Great Zimbabwe. Evidence for its history is preserved in over four hundred archaeological sites. The kingdom dispersed after 1300, new social and political alliances were formed, and the center of regional power shifted to Great Zimbabwe. The one hundred or more rock art sites in the Mapungubwe National Park document the beliefs and social practices of the Stone Age hunter-gatherers and the early Khoekhoe herders who preceded the Iron Age kingdom in the valley. The rock art sites offer a broad view of the cultural and historical complexity of the region, particularly in the animal metaphors that are part of the belief system of the San (Bushman) peoples, whose descendants practice healing and rain-making in the Kalahari region today.
www.sanparks.org/parks/mapungubwe

Cederberg Wilderness Area, a provincial nature reserve of seventy-one thousand hectares, is one of eight properties that make up a World Heritage Site known as the Cape Floral Region Protected Areas. The Cape Floral Region, one of the world's eighteen biodiversity hot spots, is one of the richest areas of floral diversity and endemism in the world, with unique ecological and biological processes associated with the evolution of the so-called Fynbos Biome, a Mediterranean-type vegetation similar to the chaparral in California. The CWA, managed by CapeNature, includes more than 110 rock art sites.
www.capenature.org.za

X-ray Fluorescence Workshop Held

XRF workshop participants from the Museum of Modern Art and Smithsonian Institution examining data obtained from a handheld XRF spectrometer. *Photo:* Dusan Stulik.

In July 2006 the GCI hosted a meeting entitled "Quantitative X-ray Fluorescence Analysis Using Handheld Instrumentation." Organized by the Institute's Museum Research Laboratory, this two-day event was the third in a series of informal workshops on the use of X-ray fluorescence (XRF) spectroscopy in the analysis of works of art. Over thirty conservation scientists and conservators, representing over twenty different cultural, industrial, and research institutions, attended the meeting.

XRF is widely used in cultural institutions because it can quickly yield information about the elemental composition of an object in a noninvasive and nondestructive manner. However, because works of art are frequently complex or composite structures, special consideration must be given to the interpretation of these results. The purpose of these meetings is to bring together users of XRF within the museum field to discuss optimizing and standardizing the use of this important analytical technique.

The previous meetings, held at the Detroit Institute of Arts in 2002 and 2004, focused on the use of XRF for the examination of photographs. The 2006 meeting focused on obtaining quantitative results, with particular emphasis on metal alloys, and on the use of handheld instruments, which has dramatically increased in recent years.

The first day of the meeting consisted of a series of presentations and lectures. Following a welcome by GCI Chief Scientist Giacomo Chiari, Karen Trentelman, head of the Museum Research Laboratory, began the sessions by providing an overview of the previous meetings and outlining the goals of the 2006 meeting. GCI Senior Scientist Dusan Stulik presented work on the use of XRF to study baryta layers in photographs, and Jennifer Giaccai of the Walters Art Museum presented work on the Archimedes Palimpsest, which uses a synchrotron radiation source to perform XRF imaging of the overlapping text. Lisha Glinsman, of the National Gallery of Art in Washington DC, explored the relative merits of different XRF spectrometers, while Aaron Shugar of Buffalo State College discussed the pitfalls of performing quantitative analysis on unprepared samples. Andy Drews of the Ford Motor Company Research Laboratories gave a tutorial on the principles of quantitative XRF spectroscopy, and George Havrilla of Los Alamos National Laboratories described recent advances in XRF spectroscopy, in particular the development of confocal micro-XRF that can enable three-dimensional nondestructive elemental imaging.

On the second day, participants used handheld XRF spectrometers to carry out a series of experiments designed to highlight instrumental characteristics and to explore

functionalities. Prior to the meeting, eighteen institutions participated in a round-robin analysis of copper and aluminum alloys, the results of which were discussed at the workshop. Although the results provided by the various participants were generally in agreement, it was apparent that a more standardized approach to quantification should be developed. The participants agreed to the creation of a set of common reference materials that could be shared among cultural institutions. The ideas generated by the participants during the meeting will help shape the way this important technique is applied to the study of works of art, in order to ensure its maximum effectiveness.

The next meeting has been tentatively scheduled for 2008 in conjunction with the Denver X-ray Conference, a leading forum for scientists working in the field of X-ray analysis. For further information, please contact Karen Trentelman at ktrentelman@getty.edu.

GSAP Symposium

In September 2006 the Getty Conservation Institute, in partnership with the California Preservation Foundation, the California State Office of Historic Preservation, and US/ICOMOS, sponsored a two-day symposium and mobile workshop entitled "New Concepts in Seismic Strengthening of Historic Adobe Structures."

The purpose of the symposium was to raise awareness among California building officials and managers of historic properties about research and seismic shake-table tests carried out by the GCI's Getty Seismic Adobe Project (GSAP). This research has deepened understanding of how historic adobe structures perform in earthquakes and has led to the development of minimally invasive seismic strengthening methods.

The first day of the September event took place at the Getty Center and brought together more than seventy participants and Getty staff for formal presentations, case studies, and panel and audience discussions on the new seismic retrofit methods and the challenge of preserving historic adobes while meeting life-safety requirements.

An evening lecture for the general public, "The Quest for Earthquake-Resistant Construction in Europe and the Americas, 1726–1908," by architectural historian Stephen Tobriner, rounded out the program while bringing this area of research to a wider audience.

On the second day, a mobile workshop took place at the historic adobe site of Rancho Camulos in Piru, California, where the GSAP methods have been implemented at this National Historic Landmark.

Three publications documenting the Getty Seismic Adobe Project are now available free of charge in PDF format on the Getty Web site (www.getty.edu/conservation/publications/pdf_publications/books.html). A Spanish translation of the final volume is also available in PDF format. A brief video demonstrating seismic shake-table testing is available at www.getty.edu/conservation/publications/videos/.

Demonstration at Rancho Camulos of the center core method for seismic retrofitting of historic adobes. *Photo:* Gail Ostergren.

Ancient Roman Mosaics on View

Hare and grapes with pomegranate. A floor mosaic from the House of the Dolphins in Thysdrus (present-day El Jem). *Photo:* Bruce White.

In October the first U.S. exhibition of ancient Roman mosaic pavements from the national museums of Tunisia opened at the Getty Villa. The exhibition, *Stories in Stone: Conserving Mosaics of Roman Africa; Masterpieces from the National Museums of Tunisia,* is a collaboration between the Getty Conservation Institute, the J. Paul Getty Museum, and the Institut National du Patrimoine (INP), Tunisia.

The exhibition was inspired by the GCI's partnership with the INP to train regional teams of skilled technicians throughout Tunisia to address basic maintenance and stabilization needs of in situ archaeological mosaics (see *Conservation,* vol. 17, no. 1). Since 1998, INP technicians from three regions in Tunisia (Northeast, Central, and East Coast) have participated in the training, which has been carried out principally at the sites of Utica, Thuburbo Majus, Makhtar, Nabeul, Jebel Oust, and Hergla.

Stories in Stone features twenty-six of the finest ancient Roman mosaic pavements from Tunisia's collections. Created between the second and sixth centuries to embellish homes and public buildings, the mosaics on view are organized around four principal themes: nature, theater and spectacle, myths and gods, and conservation/technique. Each mosaic is displayed with information on its meaning, historical context, and original site information, when known. In addition, visitors can learn about efforts to conserve these ancient works both in situ and in museums.

Stories in Stone is on view at the Getty Villa through April 30, 2007. For more information, please visit the Getty Web site at www.getty.edu.

California Alliance for Response Forum

On September 19, 2006, the GCI and the J. Paul Getty Trust Security department welcomed the California Alliance for Response at the Getty Center. Since 2003 the California Alliance for Response has organized a series of forums on cultural heritage and disaster management, bringing together institutions, emergency managers, and first responders to forge working relationships before disaster strikes.

The objectives of the recent forum were to provide education to cultural institutions on local disaster management issues and protocols, raise first responders' awareness of the need to protect cultural and historic resources, encourage disaster planning and mitigation coordination among cultural institutions and their local first responders, and develop strong networks to facilitate effective response.

Forums were also hosted at the Crocker Art Museum in Sacramento, the Prado at Balboa Park in San Diego, and the San Francisco Museum of Modern Art. Coorganizers of the event include the California Preservation Program, the Heritage Emergency National Task Force, the Cultural Property Protection Group, and the Office of Emergency Services.

The GCI's participation as a hosting institution reflects the Institute's continuing interest in safeguarding museum buildings and collections from the effects of natural and human-made emergencies through projects like the Museums Emergency Program Education Initiative (www.getty.edu/conservation/education/mep/index.html).

For more information about the forum, please see the California Alliance for Response Web site (www.calafr.org/index.html).

GCI Welcomes ICOM-CC

In October 2006 the GCI welcomed the directory board and working group coordinators of the International Council of Museums–Committee for Conservation (ICOM-CC). They represent the fourteen hundred worldwide members of ICOM-CC, the largest of ICOM's international committees.

Meeting at both the Getty Center and the Getty Villa, the ICOM-CC board and coordinators worked to further their preconference goals in anticipation of ICOM-CC's Fifteenth Triennial Meeting, to be held September 2008 in New Delhi. While in Southern California, they also met with members of the local conservation community to bring the work of this important international organization to the attention of more conservation professionals.

ICOM-CC aims to promote the conservation, investigation, and analysis of culturally and historically significant works and to further the goals of the conservation profession. For further information, please visit the ICOM-CC Web site (icom-cc.icom.museum).

Organization of World Heritage Cities Ninth Congress

The Getty Conservation Institute is working with the Organization of World Heritage Cities (OWHC) in conjunction with its Ninth World Congress. Specifically, the GCI is organizing the scientific program and poster section for the congress. In addition, the Institute will present a precongress workshop for newly elected mayors of World Heritage cities.

This collaboration builds upon the Institute's work at the 2005 congress (see *Conservation,* vol. 20, no. 3) and is part of the Institute's endeavor to better understand current important conservation and management issues related to historic cities and to identify specific areas where the GCI can work collaboratively with cities and other institutions to address these important issues.

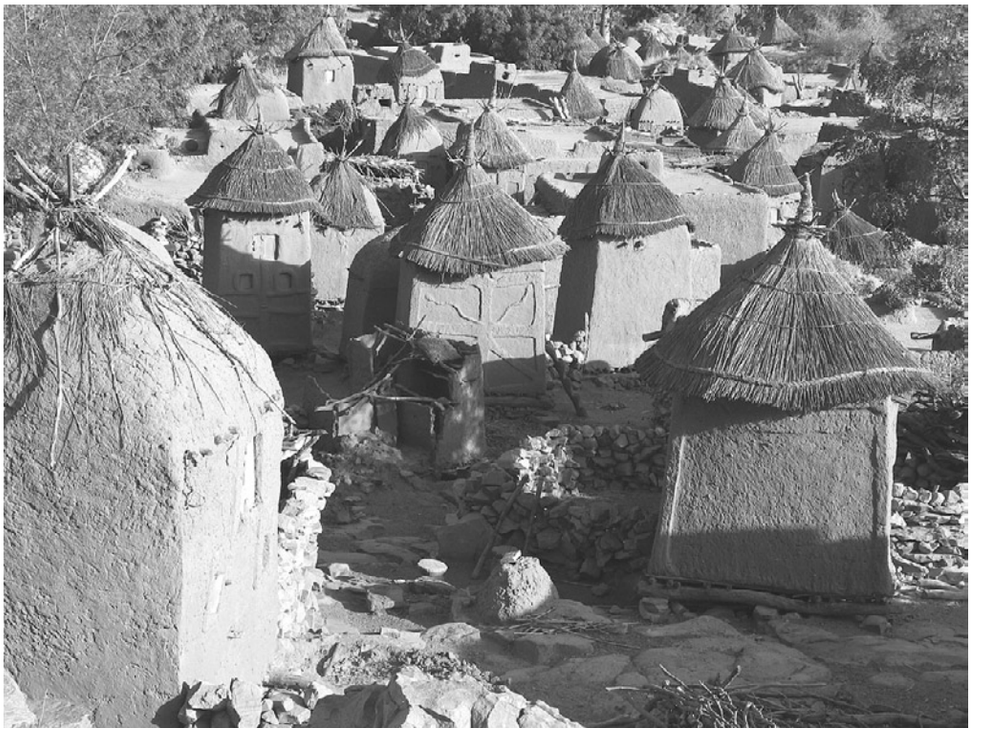
The Ninth World Congress, to be held June 19–23, 2007, in Kazan (Tatarstan), Russian Federation, is organized by the City of Kazan in collaboration with the OWHC. It brings together politicians and professionals who are committed to the preservation of historic cities, particularly those inscribed on UNESCO's World Heritage List. The Ninth World Congress, whose theme is "Heritage and Economics," will examine the link between heritage and economics in greater depth and present tools and guidelines to mayors for confronting the associated challenges with greater insight.

Poster abstracts for the Ninth World Congress in Kazan are now being accepted. The deadline for submission is February 1, 2007. All proposals will be reviewed by the Congress Advisory Committee, and authors will be informed of the acceptance of their poster no later than March 15, 2007.

For complete poster submission guidelines and for further information on the congress itself, please visit the Web sites of the Organization of World Heritage Cities (www.ovpm.org) and its Euroasia regional office in Kazan (www.euroasia-uclg.ru).

Earthen Architecture Conference

Songho village in Dogon country, Mali. *Photo:* Leslie Rainer.



The Tenth International Conference on the Study and Conservation of Earthen Architecture will be held February 2008 in Bamako, Mali, West Africa. The conference is organized by the Getty Conservation Institute and the Ministry of Culture of Mali, with the collaboration of Africa 2009, CRATerre-ENSAG, ICOMOS South Africa, and the World Heritage Centre, under the aegis of ICOMOS and its International Scientific Committee on the Earthen Architectural Heritage. Three hundred international specialists in the fields of earthen architecture, conservation, archaeology, scientific research, and site management are expected to attend.

This is the tenth conference since 1972 to be organized by the earthen architecture community under the aegis of ICOMOS, and the first to be held in Africa. It provides a unique opportunity to discuss and observe firsthand conservation issues particular to sub-Saharan Africa, a region rich in earthen architecture. During this conference, specialists will present papers and posters that reflect the latest research and practices in the study and conservation of earthen architecture worldwide.

The languages in official use during the conference will be French and English. A four-day postconference tour to Tombouctou, Mopti, Bandiagara, and Djenné will be organized for a maximum of one hundred participants. Funding opportunities for participants from developing countries to attend the conference will be available.

Please check the Getty Web site (www.getty.edu/conservation) for further information, including announcements, call for papers and posters, registration form, and program.

Contact information:

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Leslie Rainer
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Conservation Matters Lectures

The Conservation Matters lecture series, which examines a broad range of conservation issues from around the world, continues this winter and spring. Events are free of charge, but reservations are required.

To make a reservation or for information on upcoming events, please visit the Getty Web site at www.getty.edu/conservation/public_programs/lectures.html.

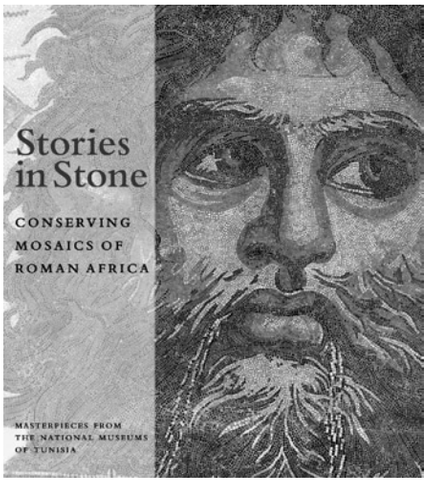
March 15, 2007

David Coulson, renowned photographer and founder of the Trust for African Rock Art (TARA), discusses Africa's oldest surviving form of artistic expression in his lecture "Art for the Ages: Raising Awareness of Prehistoric African Rock Art," presented by the Getty Conservation Institute in collaboration with the Leakey Foundation.

Stories in Stone: Conserving Mosaics of Roman Africa

Masterpieces from the National Museums of Tunisia

Edited by Aïcha Ben Abed

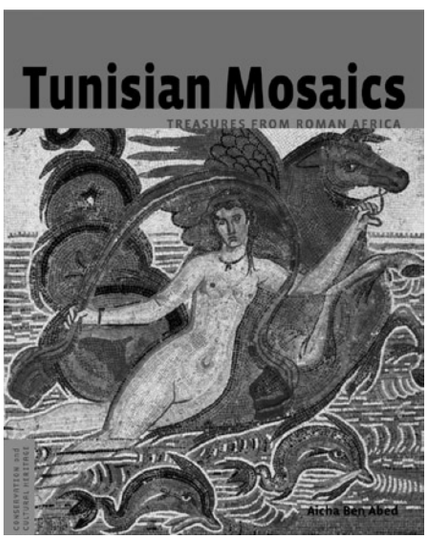


Tunisian Mosaics:

Treasures from Roman Africa

By Aïcha Ben Abed

Between the second and the sixth centuries, as Rome expanded its settlements in North Africa, thousands of mosaics were fashioned to pave the floors of the townhomes and rural estates of the African upper classes, as well as some public buildings. Mosaics were especially abundant in the colony of Africa Proconsularis, the region that is today Tunisia. These remarkable artworks constitute one of the most important historical records of life in ancient North Africa. They covered a wide range of subject matter, from scenes of daily life to classical mythology, from gladiator spectacles and chariot races to floral and geometric designs of astonishing vibrancy and complexity. The influence of the African style, with its bright colors and flowing forms, would extend throughout the Mediterranean basin and beyond.



The publication of *Stories in Stone: Conserving Mosaics of Roman Africa* coincides with an exhibition at the Getty Villa from October 2006 to April 2007—the first major exhibition in the United States devoted solely to ancient mosaics. It features twenty-six masterpieces from Tunisia's national museums. Structured around four principal themes—nature, theater and spectacle, myths and gods, and technique—the exhibition also includes extensive material on the conservation of ancient mosaic art.

Tunisian Mosaics: Treasures from Roman Africa offers a lively introduction to this remarkable ancient art. Initial chapters survey the historical background of Roman Africa and provide an overview of African mosaic art. The book also profiles six important mosaic sites and tours the collections of the country's major museums. A final chapter surveys current initiatives to preserve this important heritage for future generations.

Aïcha Ben Abed, director of monuments and sites at the Institut National du Patrimoine, Tunisia, is one of the world's leading authorities on the mosaics of Roman Africa.

Eric Hansen

Photo: Dennis Keeley

Scientist Eric Hansen retired from the Institute in April 2006 after more than twenty years with the GCI.

Hansen, who began working at the GCI in 1985, researched proteins, fundamental aspects of color science, and the properties of adhesives, particularly Acryloid B72. His work on the consolidation of matte painted surfaces resulted in a published *AATA* supplement devoted to the subject. In more recent years, he headed up a GCI scientific research project—Lime Mortars and Plasters—devoted to the study of the fundamental characteristics of lime.

Hansen served on the board of the American Institute for Conservation (AIC) and the Western Association for Art Conservation (WAAC) and was one of the founders of the Research and Technical Studies Group of the AIC. Hansen received the President's Award for his contributions to the conservation profession at the AIC annual meeting in Providence, Rhode Island, in June 2006.

Hansen will continue his research as a consultant for the GCI.

Jan Shipman

Photo: Bill Doggett

Jan Shipman, who for over twenty years was the receptionist for the Institute, retired in May 2006.

One of the GCI's longest-serving employees, Shipman began working at the Institute in August 1985, a few months after the GCI moved into its first facility in Marina del Rey. There she became the first person each day to greet staff and visitors to the Institute, as well as handle the GCI's incoming calls. Greeting visitors and assisting callers continued for her after the GCI's move to its permanent home at the Getty Center. During her time with the Institute, she also undertook a variety of other duties for GCI Administration.

Shipman is spending her retirement visiting family and doing a little traveling.

Lorinda Wong

Associate Project Specialist, Field Projects

Photo: Dennis Keeley

Jeffrey Cody

Senior Project Specialist, Education

Photo: Dennis Keeley

Lori grew up near Boston, the youngest of seven children. While the rest of her siblings gravitated toward medicine, engineering, and business, she was drawn to the arts.

At Wellesley College outside of Boston, Lori studied art history and fine arts. During one summer break, while visiting a sister in Switzerland, she saw conservators at work in Lausanne Cathedral and concluded that this was the sort of work that she wanted to do.

After graduating from Wellesley in 1994, she enrolled at the Courtauld Institute of Art in London to study wall paintings conservation. While there, she worked on a number of field projects in Cyprus, Ibiza, and England. She quickly realized how much she loved the challenges and adventure of fieldwork. After finishing at the Courtauld, she spent three years living in Europe and working on wall painting sites in palaces, theaters, and churches in Austria, the United Kingdom, Malta, and elsewhere. The projects she worked on were wide-ranging in scope but also involved focused research in the area of documentation; this included working on and participating in GRADOC—a symposium on Graphic Documentation Systems for Mural Paintings—held in Rome at ICCROM (International Centre for the Study of the Preservation and Restoration of Cultural Property) in 1999.

Deciding that she wanted to return to the United States, she moved to New York City in 2000, where she continued as a freelance conservator while also working for a small graphic design firm. The following year she spent several months as a wall paintings consultant on the GCI's project in Cave 85 at the Mogao Grottoes in China. In January 2002 she joined the Institute.

Her time at the GCI has reconfirmed her career choice. She has enjoyed not only being part of the Cave 85 project but also being involved in the China Principles project activities at Mogao and at the Chengde Imperial Mountain Resort, where her work on painted surfaces on wooden architecture at Shuxiang Temple has been especially gratifying. She has also been part of the GCI's Organic Materials in Wall Paintings project, working with noninvasive examination techniques on wall painting sites in Italy. She is looking forward to conducting wall paintings conservation training in Egypt in 2007, as part of the Institute's Valley of the Queens project.

Jeff, raised on Long Island in New York, did not travel much as a child. However, a high school student-exchange program took him to Chile and opened his eyes to a larger world. At Amherst College, he majored in European history and spent his junior year in Spain. He developed an interest in medieval archaeology and, following graduation, traveled to France to work at sites in Burgundy and Lyon.

Settling in Boston after participating in an excavation at a prehistoric site in Maine, he supported himself by working in restaurants while volunteering at Harvard's Peabody Museum, cleaning artifacts in storage. He entertained—then rejected—the idea of a graduate degree in archaeology. Instead, in 1976 he and his wife-to-be, Mary, decided to walk from what was once the edge of medieval Europe, northern Scotland, to its religious center—Jerusalem. While the walking was eventually abandoned, Jeff and Mary ultimately reached Israel and then continued their odyssey by traveling overland throughout Asia. Early in 1979 they were teaching English in Iran when the revolution broke out, and they finally returned home.

This traveling stimulated Jeff's interest in architecture and preservation. Just as he and Mary were about to become parents, he entered the graduate program in historic preservation at Cornell University, earning his MA in 1985. Jeff then decided to pursue a PhD, which he received in 1989, focusing his research on Henry Murphy, an American architect who worked in China during the early twentieth century. Jeff learned Mandarin, spent a year researching his dissertation in Shanghai, and, after teaching for four years at Cornell, was hired by the Chinese University of Hong Kong in 1995 to teach architectural history. During the next nine years, Jeff wrote two books and established a strong reputation as an expert in Chinese architectural history and urbanism.

In 2004, he and his family returned to the United States when Jeff joined the GCI's Education department. His work today—including managing both the GCI's Southeast Asia education initiative and an upcoming course for archaeological site managers in Tunisia, as well as helping plan the Ninth World Congress of the Organization of World Heritage Cities—capitalizes on his education experience, his expertise as an architectural historian, his familiarity with Asia, and his participation in archaeology fieldwork and urban conservation projects. Jeff is very gratified to engage in stimulating conservation teamwork at the GCI with professionals who share his values and help him continue to learn, as he also continues to teach.

Feature 4 **Rock Art Today**
By Jean Clottes

Dialogue 10 **Preserving a Worldwide Heritage**
A Discussion about Rock Art Conservation

News in Conservation 16 **U.S. Rock Art in the Twenty-first Century:** Problems and Prospects
By David S. Whitley

20 **Building Capacity to Conserve Southern African Rock Art**
By Janette Deacon and Neville Agnew

GCI News 24 **Projects, Events, and Publications**