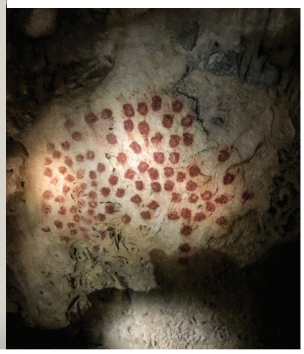
NETWORKING FOR ROCK ART

Global Challenges, Local Solutions



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Getty Conservation Institute

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The Getty Conservation Institute (GCI) works internationally to advance conservation practice in the visual arts—broadly interpreted to include objects, collections, architecture, and sites. It serves the conservation community through scientific research, education and training, field projects, and the dissemination of information. In all its endeavors, the GCI creates and delivers knowledge that contributes to the conservation of the world's cultural heritage.

All images by the author(s) unless otherwise noted.

Cover images:
Top: Painted Rock, a horseshoe-shaped sandstone feature in central California's Carrizo Plain, features numerous paintings on the walls of its interior. Its paintings have suffered greatly from disrespectful visitors, primarily in the first half of the twentieth century. Painted Rock was the focus of an on-site training course for rock art conservation, organized by Getty Conservation Institute, in 1991. See Chapter 3.1 for more information. Image: Tom McClintock.

Middle Right: The Cave of Altamira outside Santillana del Mar, Spain, was discovered in 1868. After decades of heavy visitation, authorities recognized the cave's delicate climate was being impacted to the detriment of the paintings' preservation. It was closed to the public in 1977 and a replica (pictured) was built for visitors, which opened in 2001. See Chapter 4.2 for more information. Image: Tom McClintock.

Bottom: The White Shaman Mural is one of the best preserved and most narratively elaborate paintings in North America. Located in the Lower Pecos River Region of southwest Texas, the site is currently managed by the Witte Museum in San Antonio. See Chapter 3.3 for more information on the rock art of the Lower Pecos. Image: Tom McClintock.

Middle Left: The Chauvet-Pont d'Arc Cave was closed immediately following its discovery in 1994, a decision that was based on the impacts observed at other sites like Altamira and Lascaux. At the time of discovery, the paintings yielded some of the earliest known radiocarbon dates for rock art, roughly 32,000 years old. A facsimile of the cave and its paintings was opened to the public in 2015. Pictured here is the replica of the "grand panneau des Points-Paumes," nearly one hundred ochre palm prints evoking the shape of a bison. See Chapters 2.4, 4.1, and 4.7 for more information. Image: Tom McClintock.

Contents

Preface

Neville Agnew and Janette Deacon

The title and contents of this third volume on a rock art theme published by Getty Conservation Institute (GCI) convey the variety of approaches taken by members of the Rock Art Network (RAN) in raising awareness of rock art in local situations that contribute to its significance as global heritage. RAN developed organically through a series of GCI training initiatives in the US, Mexico, Australia, and southern Africa, followed by opportunities to meet and agree on principles for rock art management, and most recently using a wide range of experiences to create meaningful social and cultural capital for rock art worldwide.

How did we get here? Initially, the GCI held training courses in rock art conservation and management soon after its inception. The first was in 1988, a short course on management and protection, was held in California for professional conservators to expand their areas of expertise to rock art, and in 1989 a one-year graduate diploma course for fourteen international participants was held in Australia in collaboration with the Canberra College of Advanced Education. As a follow up in the early 1990s, the GCI ran four annual rock art management and conservation workshops at which site managers and researchers worked together to discuss and develop values-based management plans for selected rock art sites. Based on this model, from 1994 to 1996 a field project in Baja California Sur in collaboration with the Mexican national authority, the National Institute for Anthropology and History (INAH) undertook the documentation, conservation, presentation, and community and stakeholder management of the Cave of the Mouse (Cueva del Ratón), one of the many sites in the mountainous spine of the peninsula, now a World Heritage area.

From the late 1990s to 2001, the GCI participated in the Southern African Rock Art Project (SARAP), an initiative to develop capacity for rock art management in the twelve countries of the sub-continent and to guide the process of nomination of rock art sites for UNESCO World Heritage listing. Subsequently, from 2005 to 2011, the GCI supported a series of SARAP workshops and short courses in conservation, documentation, site management, presentation, and rock art tourist guiding in South Africa at the World Heritage sites of Mapungubwe on the northern border with Zimbabwe and Botswana and the Cape Floral Region in the Cederberg mountains in the south-west. In turn, this led to exchange workshops at Australian sites, notably Kakadu National Park in 2012 and 2014, and in South Africa in 2013.

The thread throughout the evolutionary process was training and empowerment in rock art conservation, both at professional and technical levels. The next phase was aimed at a global membership to broaden the international scope through establishment of the Rock Art Network with a mission statement which in part holds that rock art:

> …is a shared heritage that links us to powerful ancestral worlds and magnificent landscapes of the past … through its existence, nature, and culture are connected

> in the landscape. It resonates with our collective and individual identity while stimulating a vital sense of belonging to a greater past. Rock art illustrates the passage of time over tens of thousands of years of environmental and cultural change. It incarnates the essence of human ingenuity and facilitates contacts today between cultures and aspects of spirituality. This fragile and irreplaceable visual heritage has worldwide significance, contemporary relevance, and for many indigenous peoples is still part of their living culture. If we neglect, destroy, or disrespect rock art we devalue our future.

To reach beyond the English-speaking world, the full mission statement on why rock art is relevant and powerful today has been translated into forty languages (see Chapter 6). The foundation principles and pillars of conservation policy and practice have been published and distributed through the Getty website and the personal networks of members.

The question of why rock art is important and in need of protection is a valid one. Art enriches our lives and rock art is a highly valued and inspirational form of global culture that was made, and is now managed, by a variety of communities and institutions. At a colloquium organized by the GCI, Arjo Klamer (1999) explained how the interaction between society and culture plays an important role in the field of heritage conservation:

> As a society, we don't only work toward increasing our economic capital that generates economic values; we invest a great deal in social capital, which is the ability to associate with others, to form communities. I would characterize cultural capital as the ability to inspire or to be inspired.

The social and cultural capital generated by the community of RAN members has inspired them to engage with the public at large for rock art appreciation and conservation. Far from being irrelevant today, rock art in its natural setting can be a powerful stimulus to a sense of well-being while conveying the beauty of the natural world, the scale of time—human and geological—to young and old alike. It has immense emotional and educational values because it awakens the imagination and so engenders a love of enquiry that will endure. To experience rock art is to be moved personally by the mysteries of the human condition and the survival of the people who made the art over at least the past 43,000 years in hostile environments, from the Ice Age to the remote deserts of the world. The human ability to inspire others through rock art has lasted over many more millennia and over a much wider geographical range than the original artists could have ever imagined. We regard it as our collective responsibility to publish results of rock art research and ensure that future generations retain respect for this achievement and continue to protect it in its original environment.

The first RAN publication, *Rock Art—A cultural treasure at risk*, was the product from the colloquium held in Kakadu National Park in Arnhem Land, Australia, in 2014. Foundation principles were proposed for rock art conservation and four pillars of policy and practice: public and political awareness, effective management systems, physical and cultural conservation practice, and community involvement and benefits. The second publication, *Art on the Rocks—Engaging the Public and Professionals to Network for Rock Art Conservation*, resulted from a colloquium held in Namibia in 2017.

Two colloquia followed, in California and Texas in 2018 with "Developing Action Plans for Public and Professional Networking" and in France and Spain in 2019, titled "Replication as Conservation," during which Palaeolithic sites and world-renowned replicas for public visitation and tourism (Lascaux, Chauvet, Altamira) were a focus for discussions (fig. 0.1).

FIGURE 0.1.
The Rock Art Network's (RAN) 2019 colloquium was held in France and Spain, where a number of impressive rock art replicas are open to tourists. In its first four years, the replica of Chauvet-Pont d'Arc Cave, pictured here, attracted 1.8 million visitors. Image: Noel Hidalgo Tan.

A fifth event is being considered to take place in Chile in 2022. Climate change and excessive tourism will be two themes discussed at this colloquium.

One of its strengths is that RAN is not an organization comprised of researchers, though most members are that, nor one for conservators. It has drawn membership from the broadest constituency in order to reach the widest audience. It reflects the voices, through brief contributions to this volume, of many of the forty Network members that include rock art researchers, academics, filmmakers, rock art site managers, photographers, curators, artists, volunteers, and professional conservators, from eighteen countries on six continents.

At a functional level, the Network germinates and fosters social capital through collaborations between members. Meeting in person at colloquia has proven to be an effective way of maintaining social contact and enthusiasm through the stimulus of visiting sites and members' presentations on topics such as film-making, exhibitions, establishing effective volunteer groups, community management of sites, creating public awareness and early involvement of the young, and mobilizing resources for rock art. Members commit to future undertakings in support of rock art through "I will…" statements, and progress is reported quarterly.

It is clear today that for rock art to find the recognition needed for its survival as an archaeological record and artistic heritage of humanity it must reach a public audience in ways not unlike other efforts which have grown to become global movements. For example, public science, astronomy, and ornithology have shown how there is a community eager

ness to participate, learn, and contribute. RAN affords an effective way forward through intensive networking within the group, public outreach to create awareness, and yet also serves the professional needs of rock art scholars and archaeologists.

Ultimately, for RAN to have an impact it must be sustainable through the efforts of members themselves and not rely upon institutional support and funding alone. This will mean raising funds for future events, contributing consistently to the mission, and seeking opportunities for collaboration. It must constantly reach out to the public and create and engage in community activities.

What then is its likely future trajectory in the present environment as we address global challenges locally? Questions of this kind are central to the idea of a self-sustaining network that reaches its audience through multiple channels—the RAN website, the Bradshaw Foundation, which disseminates news, information, articles of general interest to a wide public through the use of social media such as Facebook, the GCI Newsletter "Conservation Perspectives," films such as *The Final Passage*, museum exhibitions, and the individual networks of members themselves—are powerful means whereby the message of rock art can be brought to public attention. RAN members demonstrate in the articles in this volume many creative ways in which rock art projects have responded, not only to public demand prior to 2020, but also to the unprecedented strains and challenges that have impacted the tourism industry and public rock art sites during the Covid-19 pandemic. It has been a time for reflection with the internet playing a major role in maintaining public interest and many public sites using the time to improve infrastructure and displays. The rock art tourism industry will need to adapt accordingly and in the longer term, research and planning will be required as the effects of climate change multiply.

CHAPTER 1

The Four Pillars of Rock Art Conservation and Practice: Success Stories in Australia

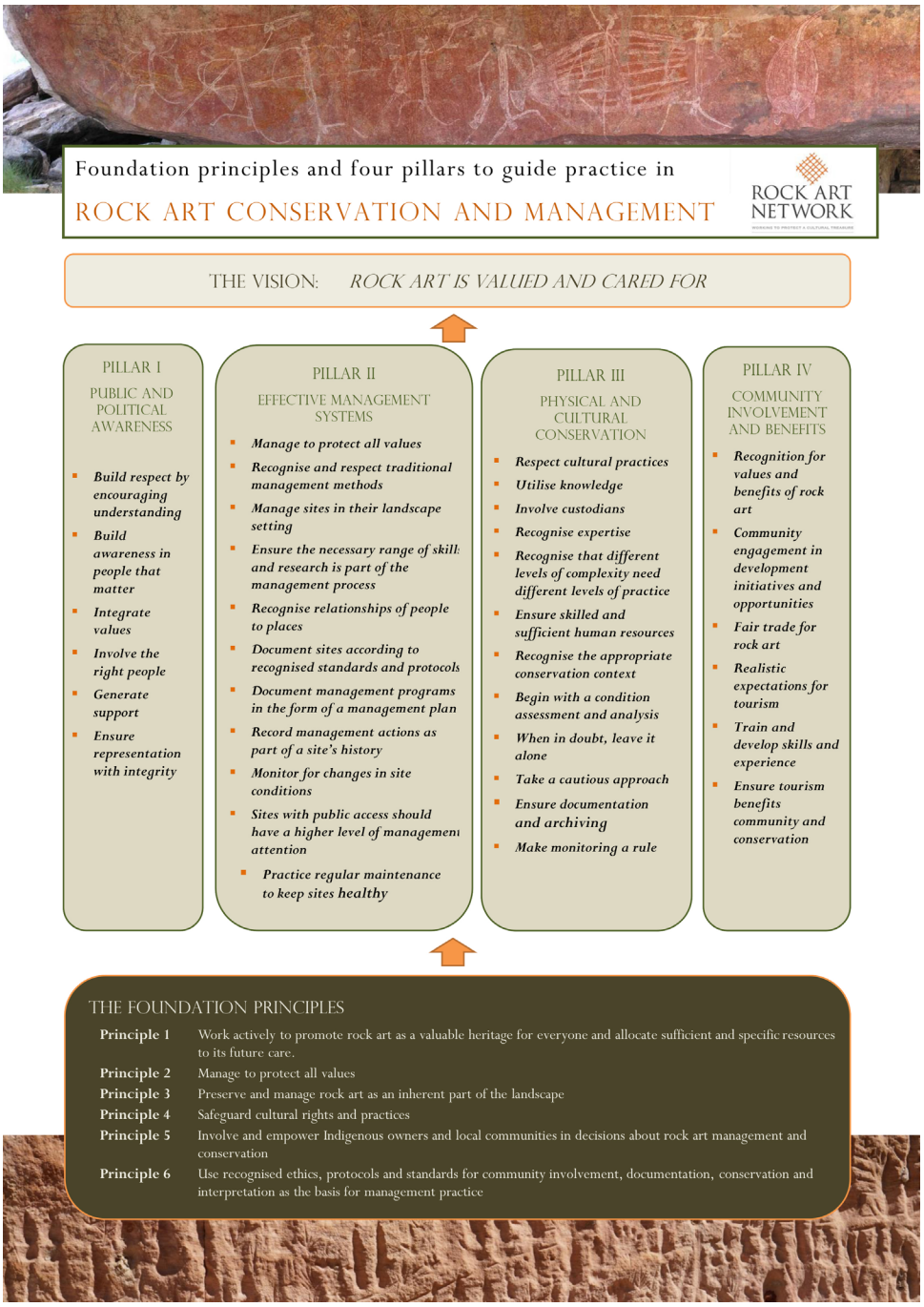
Terry Little

The four pillars of rock art conservation and practice are the culmination of a series of exchanges between specialists, managers, and community custodians from Australia and Africa who met in Kakadu National Park in the Northern Territory of Australia in 2014. These rock art colleagues appraised results of a series of rock art management courses and workshops between 2005 and 2011 and explored the future of rock art, its conservation and valorization. The Kakadu Forum led to Getty Conservation Institute's publication of *Rock Art: A Cultural Treasure at Risk*. The publication aims to reflect the collective wisdom gathered from experience in Africa and Australia, well-grounded in bottom-up listening to community and local perspectives and infused with a knowledge of internationally recognized best practice in management and conservation. At the same time, it focuses on forward-thinking strategies to address key issues with worldwide applicability to rock art heritage facing similar challenges around the world.

The four pillars represent four important areas of practice, citing a vision for what each aims to achieve, a summary of the key issues for each, a set of principles to guide practice, and an outline of what needs to be done to improve policy and practice. The authors of the four pillars hope that the document will be widely disseminated, used, and adapted to suit different contexts and realities. The essence of the pillars has been distilled in Figure 1.1. This chapter presents the following success stories from Australia to illustrate the character and potential of each pillar:

1. Public and Political Awareness: Vivid Sydney
2. Effective Management Systems: Murujuga Rock Art Strategy to Protect Aboriginal Rock Art
3. Physical and Cultural Conservation Practice: Uluru-Kata Tjuta National Park Following Traditional Anangu Law, Tjukurpa
4. Community involvement and benefits: Tourism in Warddeken Indigenous Protected Area

FIGURE 1.1.
The four pillars of rock art conservation policy and practice.
Image: Nicholas Hall.



1.1 Pillar I: Public and Political Awareness: Vivid Sydney

Jo McDonald and Sharon Sullivan

Pillar I covers the need to raise awareness about the significance of rock art, the range and severity of threats to it, and the need for effective responses to these threats. Public and political awareness of rock art is vital for successful planning and budgeting for its conservation.

The vision is to have:

- Rock art widely valued as a unique cultural treasure and recognized as an integral part of cultural identities and a unifying global inheritance that links humanity to our environment;
- Rock art recognized and understood by decision-makers to be a diminishing and threatened treasure that requires on-going commitment and responsibility from all levels of government to protect and maintain it;
- An informed and educated public that is concerned, engaged, and involved with rock art, and is willing to promote awareness of it and the threats it faces (Agnew and Hall 2018, 9).

In many parts of the colonized world, rock art was/is created by indigenous people and is most valued and best understood by them (Sullivan 2018, 21-22). Later settlers need to be introduced to these wonderful creations by illustration and education, so that they recognize them as valuable parts of the culture of their country, honor indigenous custodians, incorporate the medium into the national story, and encourage the government to conserve and protect it as a priority.

Vivid Sydney is a yearly celebration which includes spectacular projections of colorful moving images on Sydney's heritage buildings. In 2016, Vivid Sydney commissioned Aboriginal curator Rhoda Roberts and six Aboriginal artists to present, through their art, the concept of Aboriginal songlines as moving film projected onto the sails of the Sydney Opera House (fig. 1.2). Songlines are the network of creation stories which crisscross Indigenous Australia wherein each Indigenous nation is a keeper of certain passages, helping to connect them in a vast network of trade routes nourished and refreshed with song, storytelling, dance, and painting. https://www.theguardian.com/artanddesign/2016/may/28/vivid-festival-2016-opens-with-powerful-statement-by-indigenous-australia

https://en.wikipedia.org/wiki/Songline

Prominently featured at Vivid Sydney were representations of scenes, figures, and symbols created by Aboriginal Australians at thousands of rock art sites over 40,000 years. Rock art forms an ancient and crucial part of these songlines. The images inform at least 2.4 million people who may not otherwise be familiar with the beauty and cultural depth of rock art and the contemporaneity of its symbols in modern Aboriginal Australia. The popularity of the presentation demonstrates one way of giving the public understanding and enhancing appreciation. You can judge for yourself at: https://youtu.be/wdL3Vjv0BpI, or https://www.youtube.com/watch?v=ipTTD1sXvpI.

FIGURE 1.2.
Vivid Sydney is a yearly celebration which includes spectacular projections of moving images on Sydney's heritage buildings. In 2016, Indigenous artists presented the concept of Aboriginal songlines as moving film projected onto the sails of the Sydney Opera House. Image: Allison Lee, Destination NSW, 2016.

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1.2 Pillar II: Effective Management Systems: Murujuga Rock Art Strategy to Protect Aboriginal Rock Art

Jo McDonald and Sharon Sullivan

Pillar II identifies the series of steps that are required to manage rock art sites within their cultural landscapes. These include identifying the significance of sites, their management needs, and the development of strategies for their long-term conservation.

Vision for Pillar II

Effective management systems will:

- Support traditional methods of managing rock art to ensure ongoing cultural practices and protocols;
- Recognize rock art as a valuable cultural asset and support conservation management programs;
- Include monitoring and maintenance of sites and ongoing survey and recording programs in their rock art management programs;
- Involve Traditional Owners and local communities in all rock art management strategies;
- Develop conservation management plans prior to decisions being made about development, intervention, or public display;
- Train Traditional Owners, local communities, and site managers to enable best-practice conservation and management approaches; and
- Communicate about site management in an ongoing, respectful way.

Case Study: Murujuga is the Dampier Archipelago (including Burrup Peninsula) National Heritage Listed (NHL) Place in north-western Western Australia. Murujuga is a land-and-seascape with some of the world's most abundant and diverse rock art. On Australia's National Heritage List since 2007, Murujuga is widely recognized for its cultural and scientific values (McDonald and Veth 2009). It is home to Dampier township and the Burrup and Maitland Industrial Estates (BMIEA) with a Port (with shipping for gas, iron ore, and salt), a liquified natural gas (LNG) processing plant and a railhead. Murujuga Aboriginal Corporation (MAC), through the BMIEA, is the representative group for Ngarluma, Yindjibarndi, Yaburara, Mardudhunera, and Wong-Goo-Tt-Oo peoples of the Pilbara coast.

In 2013 the Murujuga National Park was declared. It is co-managed by MAC with the Western Australia (WA) Department of Parks and Wildlife (the first such arrangement in WA). The National Park covers a portion of the NHL Place and heritage sites and places within its boundaries are managed by dual legislations: the State's Heritage Act and the Federal Environmental Protection and Biodiversity Conservation Act of 1999.

The significance of the rock art to MAC and to the world community, as well as widespread concerns that the rock art could be damaged by industrial air emissions, led to several independent scientific studies and rock art monitoring initiatives, and now to the development of the Murujuga Rock Art Strategy, a State government initiative to protect the Aboriginal rock art by providing a long-term framework that builds on previous work to deliver an improved approach to monitoring, analysis, and management. This strategy will be reviewed every five years to ensure it remains current, supports appropriate governance arrangements, and the best scientific knowledge and management practices are used to protect the rock art.

MAC's mission is to preserve and protect their land, heritage, and culture while transforming the lives of their community. https://www.murujuga.org.au/about/our-mission-vision-and-values/. They participate in the Murujuga Rock Art Strategy and are engaged on a number of research projects with the Centre for Rock Art Research + Management (CRAR+M) at UWA, through the Rio Tinto Collaboration Agreement, which researches the values of the place and includes an annual rock art field school that trains rangers, undergraduates, and graduate students (figs. 1.3 and 1.4). Murujuga was added to UNESCO's World Heritage Tentative List in February 2020 and the WA state government is currently preparing the dossier for its full nomination.

FIGURES 1.3. AND 1.4.
Murujuga Aboriginal Corporation (MAC) rangers recording rock art.
Photos: Jo McDonald.

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1.3 Pillar III: Physical and Cultural Conservation Practice: Uluru—Kata Tjuta National Park Following Traditional Anangu Law, Tjukurpa

Nicholas Hall

Pillar III counsels thoughtful approaches for the work that is needed for physically protecting and, when necessary, undertaking conservation work on rock art sites. Likewise, it suggests taking a cautious approach to the cultural practices that secure the physical and spiritual integrity of rock art sites. For both physical and cultural conservation, it is important that people with suitable expertise are available, that expert knowledge is respected, and that informed decisions are made regarding the physical and cultural benefits and impacts of actions.

The practice of rock art conservation involves efforts to extend its life through preventive conservation to minimize and mitigate the risks we see ahead such as floods, earthquakes, wildfires, vandalism, gradual deterioration, or any remedial conservation efforts made after any of these events. Work in conservation, however, is not complete unless the care of our heritage is considered from a cultural point of view. How does the idea of care in western scientific traditions intersect with the idea of care held by Indigenous Owners, custodians, or local communities? We have learned from both the creators and custodians of rock art that the marks are imbued with power from ancestors, spirits, or the gods. To meddle with that power can be dangerous business indeed.

The impressive sandstone monolith of Uluru, in Central Australia, was recognized as part of a cultural landscape of outstanding universal value for the World Heritage List in 1994. Many rock art sites, mostly paintings found in rock overhangs, ring the base of Uluru, several of which are available to visitors.

Uluru-Kata Tjuta National Park is managed under a joint management arrangement between the Anangu people, who are the Traditional Owners of the region, and the Australian Government. This comes with a philosophy of following traditional Anangu law, Tjukurpa, and working and applying *tjungu* (together knowledge) to face the issues of managing the park today. The rock art itself is a part of Tjukurpa: an expression and record of the teaching of this law over countless generations and it is treasured for its capacity to continue doing this. Under the guidance of Traditional Owners and led by Anangu rangers, the park has established a rock art conservation program that started with the development of a cultural site management database in 2000 (fig. 1.5). This system helps to archive

FIGURE 1.5.
Uluru – Kata Tjuta National Park Cultural Heritage Officer Shaeleigh Swann monitoring the impact of dust on rock art sites at Uluru. Image: Nicholas Hall.

information about rock art sites throughout the park: monitoring their condition, planning maintenance and conservation work, and recording what work has been done.

The conservation challenges faced are many. Dust settles on rock surfaces obscuring the pigment. Insects and birds build mud nests over paintings, and water, when it comes, can remove more fragile images. Wildfires have threatened sites, and, most tragically, there have been a number of vandalism incidents. Conservation assessment and treatments commenced with senior Traditional Owners giving initial guidance, then options for treatment were presented to Traditional Owners to consider. Traditional Owners have provided clear advice to conservators about what are preferred materials to use and the approach they feel comfortable with. They guide the work on site, and sometimes even get into the work themselves. This is *tjunguin* practice. Doing this conservation work together opens up the space for new ways of understanding and new ways of keeping Tjukurpa strong—helping the conservation of not just the rock art, but the park as a whole.

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1.4 Pillar IV: Community Involvement and Benefits: Warddeken Indigenous Protected Area and Injalak Hill

Paul Taçon

As Agnew et al. (2015, 48) state, Pillar IV (Community Involvement and Benefits) "emphasizes the need to encourage appropriate and well-managed economic, social, and cultural development initiatives by and for indigenous, local, and regional communities." For Indigenous Australians, rock art heritage is a fundamental part of contemporary culture and identity rather than an archaeological artefact (Taçon 2019). Because of this, Traditional Owners, custodians, and other community members seek to not only conserve and manage rock art in a tangible sense, and from both traditional and Western science perspectives (Williams et al. 2019), but also to preserve and enhance their relationships to sites.

Since at least the 1980s, rock art research in Australia has been carried out in close collaboration with Indigenous communities. This has benefits for communities and particular individuals, not just in terms of employment but also by providing a way for many community members to reconnect to sites both physically and spiritually. There are many successful examples of this across Australia, but one of the best is an initiative run by an Aboriginal organization itself, Warddeken Land Management Ltd., established in 2007. They employ up to 130 Indigenous rangers and have committed to integrating rock art conservation within their wider land management agenda.

Warddeken initiatives have led to site survey, rock art documentation, protection of sites from fire and feral animal threats (e.g., Warddeken Land Management Limited 2020), and awareness campaigns such as travelling exhibitions. A recent collaborative conservation research project with senior Warddeken Traditional Owner Kenneth Mangiru led to an academic publication (Taçon et al. 2021) that, in turn, has stimulated interest in not only restoring sites virtually by using archival photographs in combination with contemporary photogrammetry and 3D laser scanning, but also physically through the actual repainting of severely damaged sites by contemporary skilled community artists.

To the immediate north of the Warddeken Indigenous Protected Area the community has several rock art sites available for tourism. The most visited and successful site complex is Injalak Hill (see Injalak Arts and Crafts Association 2018), on the edge of the town Gunbalanya. Non-Aboriginal people have been visiting the Injalak rock art galleries since the early 1900s (Masson 1915), but organized community-led tourism officially began in 1989 with the establishment of Injalak Arts (fig. 1.6). During the dry season there are several tours a day, booked through Injalak Arts or a few Darwin-based tour companies, with each tour led by a local Aboriginal guide. Revenue from tours goes towards wages for guides as well as to Injalak Arts and community Traditional Owners.

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FIGURE 1.6.
A small Indigenous-led tour of Injalak Hill near the Main Gallery in 2019. Image: Paul Taçon.

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CHAPTER 2

Art on the Rocks: Engaging the Public and Professionals to Network for Rock Art Conservation (Namibia)

Terry Little and Tom McClintock

The Art on the Rocks colloquium, held in Namibia in 2017 at the sites of the Brandberg and Twyfelfontein with discussion in Windhoek, was a significant opportunity for a diverse group of individuals to meet, share stories about contemporary practice, and think creatively about how to work together in order to generate professional and public momentum through global and local initiatives to support the future of rock art.

The Namibian colloquium sought to nurture more effective and creative ways of raising public and political awareness of the importance of the universal evidence of the creative spirit of humanity (figs. 2.1 and 2.2). Specifically, the strategy of Art on the Rocks was to reach outward, beyond professional rock art researchers and conservation specialists, by seeking input from creative thinkers who use rock art in a variety of ways, such as communicating values to the public through film, deriving artistic inspiration from rock art, management by Traditional Owners, sustainable tourism, developing and managing volunteer groups, fundraising for rock art, building partnerships between individuals and site managers and custodians, citizen participation in rock art protection, and the use of media and web for reaching the widest audiences and influencing policy makers.

Articles in this chapter explore alliances and community engagement at a range of rock art sites in Namibia, Kenya, Niger, New Zealand, Scotland, and South Africa. Two articles consider the definition and roles of volunteers and professional rock art conservators. Digital collaboration is highlighted in an article about the virtual launch of *The Final Passage*, a cinematic journey through the 36,000-year-old Chauvet Cave, while other articles look at social and digital media outreach methods.

FIGURE 2.1.
The first venue of the 2017 "Art on the Rocks" colloquium, the White Lady Lodge in Uis, Namibia, where the burgeoning RAN met to discuss a collective vision for the promotion and preservation of the world's rock art heritage. Image: Tom McClintock.

FIGURE 2.2.
Catherine Namono presents on community engagement in Makgabeng, South Africa. See Chapter 2.12 for more information. Image: Tom McClintock.

2.1 Bradshaw Foundation and the Rock Art Network

Peter Robinson and Neville Agnew

Using modern technology to illuminate the story about humankind's earliest forms of communication, the day-to-day work of the Bradshaw Foundation's online archive encompasses many areas of the digital world: from graphic design and visual communication to coding, filmmaking, and editing, through to social media and outreach.

Thus, it was to the Bradshaw Foundation that the GCI turned when thinking about how to best communicate the significance of rock art to a wider audience. As Tom McClintock of the GCI states, "As a discipline, rock art falls squarely into archaeology. It has many other dimensions: art, geology of landscapes, and science. It affords opportunity for public involvement through community volunteers. Visiting a rock art site can be a rewarding event by engaging with the natural environment and thinking about the lives of those who made the art. It is a bridge between the arts and sciences."

The Bradshaw Foundation website outlines its mission as follows:

> How do we tell the story about the first artistic endeavors of our ancestors? Rock art can be found on every continent and it is truly a common human cultural heritage, but not everybody has access to the art. Yes, rock art can be found in urban environments, and beside a road or along a well-marked track. But there are also many, many rock art sites in remote and barren parts of the world. There are rock art sites where extreme climates deter and hinder visits. There are rock art sites in regions of political turmoil. And there are rock art sites which have been closed off for their own protection. Because of these restrictions, the field work of a few—rock art researchers, archaeologists and anthropologists, among others—can be shared by many by means of our digital archive. For the last twenty-five years the Bradshaw Foundation has been involved in the discovery and preservation of ancient rock art around the world, presenting a digital archive for current and future generations to access."

The public outreach aspirations of the GCI's Rock Art Network (RAN) were therefore seen to be well served through the long involvement of the Bradshaw Foundation in rock art communication and education around the world.

After discussion among the executives of both organizations, an informal understanding was reached for a collaboration in which the RAN would provide material for posting on the various communications tools of the Bradshaw. In turn, Bradshaw staff joined the forty-person Network, have participated in colloquia, and are fully integrated in the workings and decisions of the RAN.

The Bradshaw Foundation represents one of the largest digital archives of rock art from around the world. The inspiration for this began almost forty years ago when the late John Robinson suggested to Robert Hefner III and Damon de Laszlo that an expedition to the Kimberley region of northwestern Australia to visit the rock art sites (which John had first seen as a young jackaroo) would be highly worthwhile. The Gwion Gwion art—also known then as the Bradshaw paintings—were studied and recorded on several visits, resulting in Grahame Walsh's publication *Bradshaw's Ancient Rock Paintings of North-West Australia*. With the Bradshaw Foundation now established, it was decided that it should take advantage of a new technological development that we now know as the internet. Its early pres-

ence online has certainly helped Bradshaw gain traction in a world where there are many voices trying to be heard.

As we know, the internet evolves. Bradshaw has had a long-term strategy of website development and innovation. To quote Ben Dickins, the Bradshaw's Director of Art and Design: "To me it is something wonderful to be able to use the tools available to us today, to help tell the story of the first communications of our ancestors and explore the meanings that rock art and cave paintings had to them in their lives—living in a very different time to our own, but still with that shared need to create art. It is a bond we have across time." The latest example of this strategic approach is the overall transition of the website, designed and coded with a responsive format which allows it to be viewed on all platforms, from desktop browser to mobile. This has allowed it to be considered mobile compliant by search engines such as Google, and thus not penalized in their algorithmic ranking due to the mobile-first indexing policy. The immediate viewing of information on portable devices and on social media creates a groundswell in attention, particularly in young people. RAN has determined that to get its message across, accessing this demographic is of utmost importance (fig. 2.3).

In light of this, Bradshaw has developed creative social media strategies to maximize outreach and minimize niche categorization by associating rock art with aspects of everyday life. A vital part of the outreach is to provide a steady stream of material for public engagement that then generates both conversation and involvement. As such, the Bradshaw Foundation is an interface—breaking down barriers between the scientific study of rock art and public engagement. And, because rock art is still being rediscovered, this is an ongoing project for Bradshaw Foundation and RAN.

A light was shone on the art of Chauvet for the first time in millennia in 1994 by adventurous spelunkers. More recently, the rock art discovered in Indonesia is now known to be some 44,000 years old, changing the debate about the origins of artmaking. Sometimes, political situations prevent research; currently the Bradshaw Foundation is working with Colombia's Grupo de Investigación de Arte Rupestre Indígena (GIPRI) in a region where for decades the Colombian Army waged war with the Revolutionary Armed Forces of Colombia (FARC). The paintings found on Serranía La Lindosa are being studied by researchers who can now look deeper into the lives of an Amazonian people who inhabited this region as early as 10,000 B.C. With new discoveries, improved access to remote sites, and breakthroughs in research, there will always be the need for protection, raising awareness, and engagement.

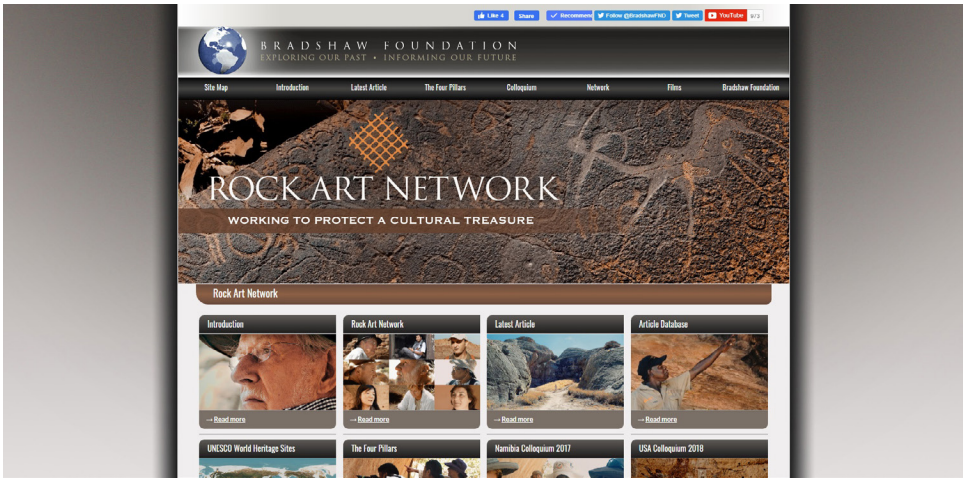

FIGURE 2.3.
The home page of the RAN website, hosted by the Bradshaw Foundation. Image: Bradshaw Foundation.

2.2 Alliances and Citizen Participation: Firsthand Experiences from the Visit to the Brandberg, Namibia

Janette Deacon

A strategy for the 2017 Getty Conservation Institute's colloquium in Namibia, *Art on the Rocks—A Global Heritage*, was to reach outward, beyond professional rock art researchers and conservation specialists already involved, to places managed by Traditional Owners through sustainable tourism (Agnew 2018). The ten-day program therefore included visits to the World Heritage Site at ǂUi-ǂAis (Twyfelfontein) and to Dâureb (the Brandberg) on the World Heritage Tentative List.

Namibia's most iconic rock painting is the so-called "White Lady" of the Brandberg in Maack Shelter, named after Reinhard Maack, the land surveyor who reported it in 1920. It was subsequently declared by the Abbe Henri Breuil to include an image of a woman of European origin, "from Crete or Egypt." Soon after publication of his 1948 book on the site that included traced and re-drawn copies of the paintings, this interpretation was challenged and there is now universal agreement that it is in fact a male figure of African origin. Sadly, Breuil's error of judgement caught the public imagination and attracted so many people who put water and other liquids on the painting to improve the clarity of their photographs that the image is now barely visible when compared with those nearby. This is not only an object lesson in the need for responsible tourism that emphasizes best practice, but also underscores the value of documentation. Maack Shelter was consequently a highlight on the itinerary for the *Art on the Rocks* colloquium on Tuesday 25 April 2017, and we were all eager to see how the National Heritage Council, researchers, and the local community had worked together to protect the paintings from further damage.

A major initiative by the University of Cologne, funded by the Deutsche Forschungsgemeinschaft (DFG), began in Namibia in 1963, and in 1977 Harald Pager took on the formidable task of locating, documenting, and tracing the paintings in 879 rock shelters on the Dâureb inselberg. His work, which included some seven kilometers of tracings with about 43,000 individual figures, was published posthumously between 1989 and 2006 in six large-format books with considerable input from a team of specialists including Dr. Tilman Lenssen-Erz. With the help of colleagues from Germany, Goodman Gwasira from the University of Namibia, John Kinahan from Namibia, and the National Heritage Council of Namibia, he led a training program to enable members of the local Damara community to manage the Dâureb tourism facility, take responsibility for guiding tourists, and earn sustainable incomes. A few of the men who helped Harald Pager and know the mountain well are available to guide tourists who wish to spend several days on the mountain, whereas women guide the half-day tours.

Although we had planned for Goodman Gwasira and his students from the University of Namibia to accompany us to Dâureb, he became ill and had to cancel at the last minute. In comparison with ǂUi-ǂAis which receives more than 60,000 visitors a year, Dâureb is not as accessible and consequently receives fewer visitors (about 17,000 in 2017). For us, at least, this was an advantage as we had no need to keep to a strict timetable to allow other groups to be accommodated and it was a luxury to be able to move at our own pace and not over-crowd the rock shelters.

We arrived at reception at about eight thirty and, after introducing ourselves and making sure everyone had water, we set off with our Damara guide, Ennethe Eichas, who gave us a brief introduction to the Dâureb landscape as we entered the dry and sandy Tsisab riverbed at about nine o'clock. When asked about her own relationship to the original artists and the content of the rock art, Ennethe said wisely that although rock art is not part of her culture today, it is a significant part of the national heritage of Namibia and that makes her proud.

It began to get warmer and we were glad to find shade under reed and thatch when we arrived at a resting place a few meters from the Maack Shelter soon after ten o'clock. Ennethe explained that there was a limit to the number of people permitted to enter the site at any one time and we divided into two groups of eleven each. She pointed out the visitor protocols that were listed on an information board and gave us an introduction to the history of the site. The information board clearly states that the so-called "White Lady" is indeed masculine and elaborates: "Each medicine man figure in the Maack Shelter is different. This indicates that they show specific individuals. The "White Lady" medicine man was therefore a real person who practiced as a healer in this area." With so much hype around the "White Lady" it comes as a surprise to see that "she" is only one of at least ten men each with a different personality. They are in a rough procession moving from right to left, with a row of bichrome oryx antelope above them, a zebra with detailed stripes, and numerous smaller images of animals and men. Harald Pager's tracing made in 1976 shows some painted in monochrome and others in polychrome (figs. 2.4-2.7), and the "lady" is not the only figure with a white body.

FIGURE 2.4.
The "White Lady" with red upper body and white legs, other men in dark maroon, and bichrome oryx and a zebra. Image: Tom McClintock.

FIGURE 2.5.
Detail of the "White Lady." Image: Tom McClintock.

FIGURE 2.6.
DStretch enhancement of the photograph in Figure 2.4 shows the extent to which the pigments used for the "White Lady" and adjacent images have been degraded.
Image: Tom McClintock.

FIGURE 2.7.
Redrawing from a tracing made by Harald Pager in the late 1970s of the "White Lady" with adjacent men and animals. Image: Courtesy University of Cologne, detail photographed from a poster.

About twenty years ago, the floor of the shelter was covered with stone chips to cut down on dust and a walkway with a metal frame and wooden slats effectively keeps visitors at a safe distance from the painted surface. There is no vegetation nearby which reduces the risk of fire. A dripline above the paintings seems to be effective in guiding rainwater away from the paintings, although in fact it seldom rains. The paintings are on one side of a narrow cleft between two huge boulders and the route has been cleverly designed so that visitors can only walk in one direction with a large open area on the far side, where they can wait for companions before moving on to the next site. We took advantage of this space as we chatted about the details of the paintings and the visitor experience, Noel flew his drone and took photos from it, Nicholas and Richard climbed tall rocks, and we took a group photo.

By twelve fifteen, we had descended the side of the valley and reached another site with paintings that included a snake, striding bowmen, and a procession of women. It was getting hotter, water was being used to cool our heads as well as to drink, and Ennethe suggested another site on the other side of the ravine. Half an hour later, along a poorly defined path that was rough and strewn with boulders, we decided to turn back, thinking of the challenges that Harald Pager had faced high up on the mountain where water was scarce and the days much hotter.

2.3 Engaging Communities in Rock Art Projects in Africa

David Coulson

In 1997, Trust for African Rock Art (TARA) initiated its first community rock art project in the Aïr Mountains of Niger. This was triggered by our earlier expeditions to Dabous to document two life-size giraffe carvings believed to be at least 7,000 years old and described in 1999 as one of the greatest masterpieces of prehistoric art ever recorded (fig. 2.8).

There was a lot of adventure tourism in the area at that time, conducted by the Tuareg, although we observed that most operators appeared to know little about the rock art. Although they would sometimes stop at sites, they typically had nothing to say about the art. They also were not familiar with the "dos" and "don'ts" of visiting sites and we'd often see them standing on top of engravings.

With a grant from the US Ambassadors Fund for Cultural Preservation (AFCP), TARA was able to prepare illustrated booklets and brochures in French and English and, with the help of the Minister of Tourism (himself a Tuareg), organized training for many tour operators. The publications included a guide to conducting rock art safaris. With help from the US embassy and the Minister of Tourism we also helped set up a local cultural foundation, Association ANIGOURANE Préservation et promotion de l'Art Rupestre Nigérien, for the

FIGURE 2.8.
The famous life-size giraffe carvings in Dabous, Niger. Image: Terry Little.

protection of the art with our friend, Sidi Mohamed Ilies, as President. This project was very successful until the start of the second Tuareg rebellion in 2007, when tourism ceased for several years. A second AFCP-funded project in Niger in 2015 focused on documenting rock art in the vast areas in the northern part of the country in collaboration of local teams from Iférouane (fig. 2.9).

In the last twenty years, TARA has conducted community projects in Chad, Malawi, Niger, Nigeria, Tanzania, Uganda, and because its headquarters are in Nairobi, numerous projects in Kenya.

FIGURE 2.9.
Ahmed Oumouss from Morocco conducting a training session at the 2015 Rock Art Workshop in Iférouane, Niger. Image: Terry Little.

Our first project in Kenya was in Kakapel, situated among impressive granite outcrops near the Uganda frontier. The art is a combination of geometrics and early cattle paintings. TARA successfully proposed to the National Museums of Kenya (NMK) that the site be appointed as a National Monument. TARA began receiving complaints from the community that entry fees were not being shared with the community. We approached the main telephone company in Kenya for a grant to build a community center near the site where visitors could also purchase local crafts and souvenirs (fig. 2.10). The center was also designed to serve as a focal point for community gatherings and festivals. For example, at the end of each year the Iteso Cultural Festival is celebrated here with the Iteso Royal Family presiding and some 10,000 people attending.

FIGURE 2.10.
The Kakapel Community Cultural Centre in western Kenya was established as a gateway to the rock art and the culture of the Iteso people. Image: Terry Little.

One of our most exciting projects took place on Mfangano, a beautiful island in Lake Victoria that is approximately fifteen miles long and six miles wide with quite high mountains in the center. This project came about in the early 2000s after I read an article in an old journal that included a map of Mfangano with a black spot and a footnote indicating that there was rock art on the island.

Shortly after reading this, I found myself on a neighboring island with friends and, taking a small boat, we set off to explore the island, stopping at a number of villages asking for information. I had sketched images of geometric art on the back of an envelope to show villagers what we hoped to find. Eventually, a boy who was watching me pointed up a mountain and said he knew where there was a painting like that!

After an exhausting climb, we found ourselves in a long cave with a number of well-preserved bichrome paintings of concentric circles. This type of art is usually attributed to ancestral Twa, or Pygmies, the forager-hunters who once inhabited parts of Kenya, Uganda, and Central Africa.

Not long afterwards, a young Kenyan named Jack came to my office and told me his home was on Mfangano and that he had founded the Abasuba Community Peace Museum. He had heard about my interest in the rock art, partly because I had landed in a helicopter on the mountain and had taken the president of the Ford Foundation (our main source of funding at the time) to see the paintings. Meeting Jack was the perfect bridge to begin our community collaboration and rock art project.

Key components of this project, made possible by a grant from the European Union, included the design and construction of an iconic Community Cultural Center and Museum near the main town (fig. 2.11). TARA's Terry Little played a big role in its design and construction. Signage was installed with maps and directions to sacred forests and panels to show visitors where to go and inform them about the sites. Guides from the villages were trained. A key concept was that visitors would pay guide and entrance fees and this money would go directly to the villages. For example, the school at Mawanga village was built using the guide fees generated by the nearby site.

These three examples of TARA community projects are dependent on the tourism model for their success. Another example of a project that we organized some years ago is Lokori, in a semi-desert area in the Rift Valley less than 100 miles south of Lake Turkana, a remote part of north-west Kenya. The site, Namoratunga, meaning "a rocky place," was excavated in the 1970s by Robbins and Lynch and by Robert Soper. The art consists mainly of hundreds of geometric engravings on cliffs and boulders and some on upright gravestones.

By shining light onto Namoratunga's distant past, the objectives of this project included awareness creation, education, and community pride. Members of the community were involved in the different study exercises and videos were shot of elders telling stories of what their ancestors had said about the art. When we said goodbye, we felt we were talking to people who had become natural custodians of their proud past.

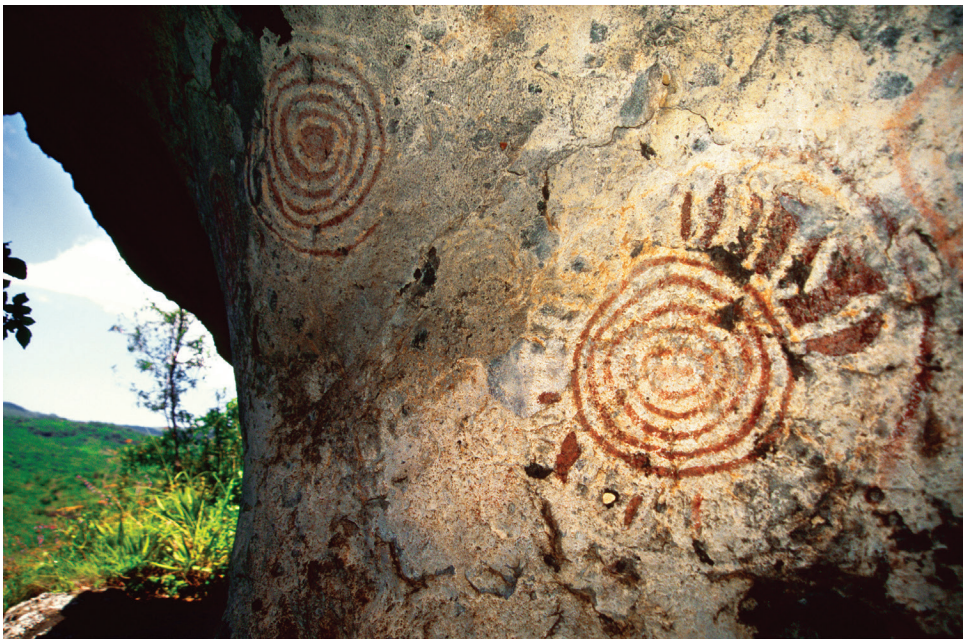

FIGURE 2.11.
Inauguration of the Abasuba Community Peace Museum, Mfangano Island, Kenya. The multipurpose buildings serve as a visitor welcome center, community meeting place, and museum.
Image: David Coulson.

2.4 *The Final Passage* and the Cinematic Powers of 3D Excursions

Martin Marquet and Patricia Marquet Geneste

In the summer of 2015, at the historic Locarno Film Festival in Switzerland, a crowd of 8,000 movie-goers witnessed an unprecedented cinematic event, one of significant symbolic meaning for humanity's long legacy in visual communication and artistic expression.

Long before the birth of the kinetoscope, scientific and archeological studies suggest that the world's first storytellers had pioneered—with great ingenuity, imagination, and sophistication—a way to create and project images of life on the walls of their environment long before the emergence of cinema. This creative legacy connects a global community of contemporary artists and filmmakers who today finally have a chance to experience the roots of their own form of existence and one of the greatest sites of humanity, the Chauvet-Pont d'Arc Cave.

Produced as a twenty-eight-minute single-sequence shot, The Final Passage premiered as a first-of-its-kind short film allowing international audiences to discover and enjoy in an immersive manner a sanctuary that is likely to never be open to the public due to essential conservation restrictions. However, the lions, mammoths, rhinos, bears and half-human, half-animal figures came to life and to "a theater near you" in this hyper-realistic digital reproduction (figs. 2.12 and 2.13). Thanks to a production process that prevented any kind of risk of endangering the original cave site, it remains intact and protected by the French government.

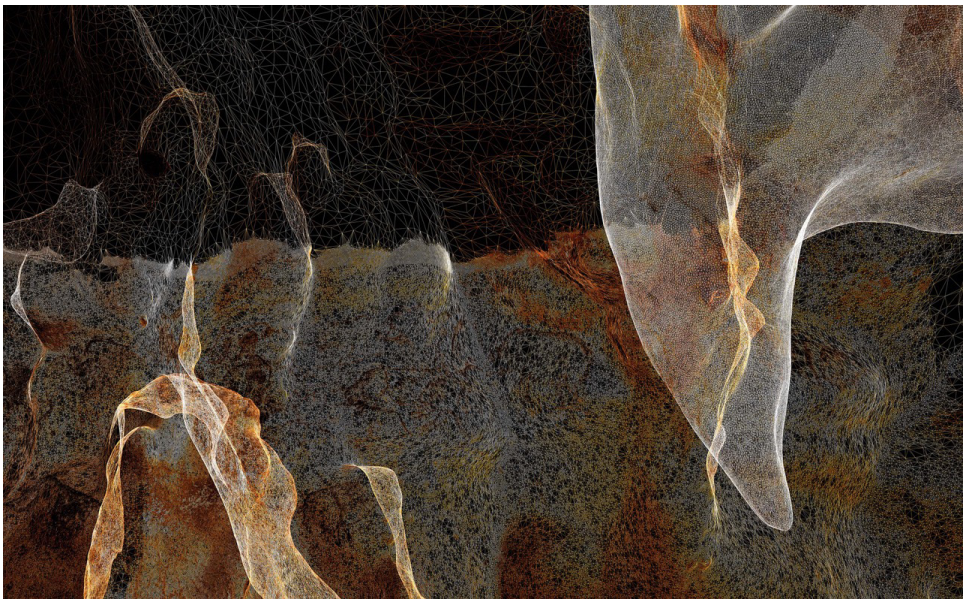

FIGURE 2.12.
Work in progress, 3D texturing of the digital replica of Chauvet-Pont d'Arc Cave. Image: © Pérazio Engineering.

FIGURE 2.13.
The horse panel, a scene from The Final Passage. Image: © Rup'Art Productions.

This film demonstrates a successful proof of concept serving both the cultural and conservation imperatives and relying on cutting edge modern technology and creative practices, which are often used in other caves and rock shelters by their custodians.

Following its festival debut, The Final Passage began a tour with special events hosted by Getty Center in Los Angeles (fig. 2.14), British Museum in London, and Palais de Tokyo in Paris. Those public events marked an important moment in the history of rock art promotion and education, creating new and popular possibilities to share the significance, power, and beauty of these rock art expressions to the widest possible audience when, for many decades, only a few replicas and photo exhibitions offered those opportunities. Let us remember that for the vast majority of people in the world, visiting a site in its original environment is a rare cultural experience.

FIGURE 2.14.
The Final Passage, US premiere hosted by Getty Center. Image: © Rup'Art Productions.

In May 2020, in the midst of a global pandemic and strict national lockdown measures, while rock art sites and their replicas are closed to the public, we took the initiative to invite film directors Pascal Magontier and Jean-Michel Geneste and RAN to join us in making The Final Passage a gift to the world, with free and unlimited online viewing. In the surroundings of the Chauvet Cave, humans had to face hardships and survive in a world they could not control, in which animals were powerful and overabundant. The virus is a reminder of nature's potential to overwhelm us, even in this modern era. A month following our digital release, a tangible sense of togetherness and of shared human resilience emerged from the many emails we received in response.

The enthusiastic and generous support we received from our friends and colleagues in RAN contributed to the immediate success of our May 7th launch date. In less than two months, the film reached more than 150,000 viewers thanks to a remarkable outreach campaign which, without a marketing budget, was yet another demonstration of the power of unity as experienced with and through RAN's mission to enhance public awareness for rock art heritage.

The following select quotes from the general public summarize the intensity with which online audiences have experienced the film and the Chauvet Cave. They appreciated the opportunity to discover the hidden elements of what is understood to be one of the birthplaces of art, a place of universality connecting us all with a shared sense of permanency and eternity that moves us and that keeps us progressing, especially in times of total uncertainty.

We express our hopefulness and much gratitude for RAN's extraordinary care to share.

"In my first time, I felt I am in a world of unknown and a beast is going to attack me. I felt myself in the movie. It was surrealistic. In my second time, I start to study about the cave and Rock Art."

"Sitting quietly and watching something unfold slowly was a welcome change from my usual approach to things."

"Splendid film and so moving that it seems to me like a prayer. Prayer to nature, prayer to life. A magic moment which makes it possible to think: I exist because they existed before me because they invented everything."

"A true gift for the sense and the soul."

2.5 Rock Art Network: Outreach and Communication

Ben Dickins

A principal part of the Rock Art Network's mission is communicating the importance of rock art to the wider world. There are identifiable ways that through a meaningful digital presence—website and social media platforms—the Network can achieve its goals of promoting the relevance of these artworks into the future.

We live in the Information Age: never in human history has information been so readily available. At its heart lies the internet, which plays a major part in most of our everyday lives. It is important to understand that the internet—and the code that it is built from—is ever-changing. One of the Bradshaw Foundation's first goals was to use the internet as a means to disseminate information on rock art. Our website was launched in the "early days" and it has gone through many incarnations as coding has changed and competition has risen. It is not just the coding that is constantly changing—so too are the ways we consume information and the devices we use. Continual development to meet these needs is essential to ensure outreach.

Content is King

In 1996, Bill Gates wrote his essay "Content is King," coining a phrase that has since become widely used in relation to the internet. Google has incorporated the concept in regard to internet searches—the more original and legitimate the content, the better the search results. An advantage for the field of rock art is its great scope for original and legitimate content, so the opportunity to communicate this to the public is great.

Engagement

The engagement of the audience is vital; the content must engage the audience. How can we ensure our communications are relevant to as many individuals as possible? The aim is to dismiss the perception that rock art is a niche subject, demonstrating instead that it is an art-based field that plays a part in everyone's lives. This is fundamental when it comes to all-consuming social media, where original and engaging rock art content will get shared more and more, reaching a wider and wider audience that includes people who have never thought about rock art before.

Content Type

There are various formats of content to consider, reaching beyond web pages, posts, and tweets, what other dynamic content can reach people? Connectivity has advanced immeasurably and will continue to do so, giving rise to film as a medium across the web. Accessible on mobile and portable devices, increasingly professional codecs (software that compresses digital video) produce higher quality films that are deliverable over the internet, catering to a universal demand. High quality portable cameras and smartphone cameras equipped with professional codecs are now more common than ever, allowing for democratization of filmmaking. Add to this the small portable digital recording equipment and the rise in the use of drones and we now have the opportunity to produce broadcast material with which to fully engage an audience with an insatiable desire for film. We are also seeing rapid advances in 3D and immersive applications that can, for example, enable access to decorated caves that are not open to the public.

Rock Art Network

RAN disseminates information about the earliest forms of art. With more and more digital information available from so many sources, the accuracy of information has become paramount. Our challenge is to place rock art in the zeitgeist; keeping the voice of rock art heard every day within the environment of mass information. The Network's digital presence—its website and social media platforms—provides a great opportunity. Our website is a portal, and it relies on a steady stream of original, accurate, and engaging material submitted by Network members to work effectively. The professional and geographic diversity of RAN's membership provides an ideal opportunity to supply a vast range of material in this field that is constant and always current. This can be achieved through the Network's collective efforts and commitment, allowing it to remain active and relevant into the future.

2.6 Leave a Like and Subscribe: Using Social and Digital Media to Engage Schoolkids and Children of All Ages

Noel Hidalgo Tan

There is a good argument to be made for rock art as the Instagram of the Prehistoric world: people created artistic expressions of themselves and their communities, depicting significant events such as hunting or rituals. One could go so far as to argue that at least some animal paintings were the world's first food photographs. Perhaps rock art was the world's first form of social media and, with the relatively recent emergence of Facebook, Tiktok, or WeChat, we have come full circle in using contemporary media to raise awareness about the medium.

Social media provides a myriad of opportunities for public engagement: Facebook allows the creation of online groups and communities, Twitter is a microblogging site emphasizing short, punchy messages, Instagram and TikTok are used for image and video sharing respectively. In East Asia, super apps like WeChat and Line integrate social media, e-commerce, and communication into one phone application, are ubiquitous and quickly spreading to other parts of the world.

As in real life, the visual element of rock art is the most important aspect in engaging social media audiences. When trying to engage schoolkids in social media, there are really two main audiences involved: the children and the adults (educators and parents of school children). These groups can have vastly differing preferences for their social media of choice and engaging them demands multiple strategies. Below are some ways social media has been used to engage schoolkids and the public in rock art education, focusing on examples from Southeast Asia.

Rock Art Interest Groups on Facebook and Instagram

While Facebook is suffering a decline in membership in the West due to its negative social outcomes, usage is relatively high in Southeast Asia. For the four largest countries—Indonesia, the Philippines, Vietnam and Thailand—it has a penetration rate of 50-65%. In Myanmar, for example, Facebook is synonymous with the internet (to "Facebook" in Myanmar is understood to be going online). And, anecdotally, it is easier to reach someone via Facebook's Messenger than email.

Despite its decline in growth, Facebook continues to be a major source of news and general communication and many institutions and individuals are harnessing Facebook groups to create communities organized around causes like rock art. For example, various cultural agencies in Indonesia and Thailand frequently share new discoveries on Facebook, with groups such as Prehistoric Rock Art and Thai Rock Art and Prehistory sharing news, photos, and discussions about rock art. In this regard, Facebook and Instagram are excellent starting points for enthusiasts to learn information about rock art, with the caveat that the information sources need to be verified.

Photos, Videos, Virtual Reality, and Other Digital Resources

The ongoing Coronavirus pandemic which hit the world in 2020 has caused many disruptions to travel and learning and has forced many people to work from home, adopting a digital lifestyle. While rock art sites may enjoy a measure of protection during this time due to the lack of visitors, many cultural agencies have been taking the opportunity to bring rock

art sites to audiences by opening their site photo albums, video tours, and virtual reality reconstructions. For example, virtual tours of African Rock Art can be found on the British Museum site (https://africanrockart.britishmuseum.org/vr/), while Google has one on the Chauvet Caves (https://artsandculture.google.com/project/chauvet-cave). Using virtual reality (VR) glasses or augmented reality programs through a smartphone, one can make virtual visits to these historic sites from any location. Other digital resources developed during the pandemic include digital coloring books that provide creative activities for children as well as website resources, such as this one on Southeast Asian Rock Art, (https://www.southeastasianarchaeology.com/rock-art-of-southeast-asia/), which provides information for enthusiasts and scholars (fig. 2.15).

FIGURE 2.15.
A website hosted by Southeast Asian Archaeology provides information on regional rock art for scholars and enthusiasts alike.
Image: Noel Hidalgo Tan.

Where possible, the ultimate goal is to physically bring people to rock art sites so that they can be appreciated in real life. One successful example in recent years has been the Gua Tambun Heritage Awareness Project in Malaysia, where a social media and crowdfunding campaign successfully raised awareness of a prehistoric rock art site at the edge of the city of Ipoh. Facebook and Instagram hashtags were used to help spread awareness of the activities and events related to the project, while volunteer guides—many of them local high school students—were trained to give weekend site tours. These were attended by local families who not only visited the site, but also engaged in activities such as finger-painting, discussions on what the paintings meant, and site-wide litter clean up. The program ran for several years and enhanced the community's appreciation for this previously underappreciated site.

A catchphrase often heard on YouTube is to "leave a like and subscribe," which is a call to action for the viewer to click on the button, indicating that they enjoyed the video, and to also subscribe to the host's channel so that they come back in the future. The use of social media in rock art outreach has very similar goals. By using social media to expose the public to rock art, we hope that some people will "like" them, and that some will go further and become more engaged with protecting rock art.

2.7 Defining the Role of the Rock Art Conservator

Lori Wong and Terry Little

The impetus for this discussion emerges from numerous requests received by the GCI and through the International Council of Museums Committee for Conservation (ICOM-CC) working group on Murals, Stone, and Rock Art asking for technical assistance relating to physical interventions on rock art sites. These requests suggest that hands-on physical interventions are being undertaken on rock art sites, perhaps on a more extensive scale than was previously assumed by the field and are being carried out in large part by non-conservators. This highlights a need for greater access to conservation knowledge and resources that include both principles of rock art conservation as well as technical guidance. Few problems faced in rock art fall within the bounds of one discipline, and identifying gaps in knowledge and practice, as well as clarifying roles and responsibilities in rock art conservation, can help to target efforts by directing scarce resources toward the most pressing needs in the field (fig. 2.16).

FIGURE 2.16.
Hands-on physical interventions at rock art sites, seen here removing graffiti at a site in Chongoni Rock Art Area, Malawi, are just one aspect of a rock art conservator's role. Conservators are also trained in documenting and surveying sites, assessing and recording condition, identifying causes and mechanisms of deterioration, and making recommendations that will slow change. Image: Terry Little.

As a typical example of the way in which conservators are sometimes requested to assist, the Lori Wong helped a group of volunteers in 2017 with the removal of Sharpie pen ink at the Sevilla Rock Art Trail in the Cederberg near Clanwilliam, South Africa. The site had been vandalized with graffiti a few months prior, but fortunately only in an area with no paintings. Many rock sites like Sevilla rely on a volunteer workforce to undertake such tasks, often with little to no training. Though the end results were satisfactory, optimal treatment would have included more rigorous testing and evaluation with a wider range of methods and materials before undertaking the removal so that the object is not adversely impacted during the process.

Rock art is one of the most vulnerable and at-risk object types within cultural heritage, often found in remote, exterior outdoor environments without adequate protection. It is subject to a wide range of threats that includes both natural factors, such as from weathering, moisture, solar radiation, and biological (vegetation, animals, and insects), as well as human impact (from tourism, vandalism, development, and neglect) (Agnew et al. 2015). Despite this threatened status, at most rock art sites it is the archaeologist, site manager,

or volunteer who must take responsibility for the preservation and protection of the site—tasks that are usually within the scope and expertise of a conservator.

The reasons why conservators are not commonly employed at rock art sites are numerous: practical considerations, such as limited resources prevent the hiring of any personnel, let alone a specialized conservator; and logistical, as many rock art sites fall outside of an established system of managed care. The sites are frequently isolated and difficult to access, challenging to regularly monitor and maintain. Furthermore, rock art tends to be classified as "archaeology" and in that professional arena conservation is not always considered a mandatory part of the overarching site strategy. Rock art sites are also most typically above ground and already exposed, so don't require excavation and because of this they are not part of regular field season digs for which a conservator might be contracted.

Conservators are most often employed at archaeological sites to work on stabilizing and helping to present excavated structures, or dealing with post-excavation finds (i.e., the consolidation, cleaning, and storage of excavated artifacts). The latter is perhaps the most stereotypical image of the conservator—as the technician standing before an object with a brush in hand or a white-coated individual hunched over a lab bench laboring on a tiny area of an object. This notion of conservation as an object-focused, museum-based profession is still entrenched and the typical roles of a conservator on archaeological sites may therefore not appear to match the needs of rock art sites. In reality, however, there are many types of conservators, not only those trained to work on discrete objects in a museum setting but also others who specialize in archaeological conservation and are aware of the multitude of challenges presented by on-site work.

Rock art conservation has been broadly defined to include both site protection and management. A conservator's role has evolved and expanded from that lab-coated individual to one who is responsible for a wide range of activities that can include research, documentation, management and stewardship, education and outreach, and preventive and remedial measures. These areas have been broken down and described within the aforementioned four pillars of Rock Art Conservation Policy and Practice. This essay takes a deeper look into Pillar III: Physical and Cultural Conservation Practice and begins to think through a response to the call to action presented in this publication.

Whereas conservation and archaeology should be considered as conjoined and integral to each profession, conservators have not been widely looked upon as a resource at rock art sites. Pillar III of the Rock Art Conservation Policy and Practice stipulates that physical and cultural conservation take place under careful guidance by people with suitable expertise and that expert knowledge is respected in order to make informed decisions. ICOM-CC's terminology for conservation states that, "Conservation is complex and demands the collaboration of relevant qualified professionals. In particular, any project involving direct actions on the cultural heritage requires a conservator-restorer." The American Institute for Conservation (AIC) describes conservators as being "unique in the wider preservation field for the particular expert hands-on technical and decision-making skills they bring to preserving and caring for our tangible history" (American Institute for Conservation n.d.).

Rock art, including both petroglyphs and pictographs, is similar in material composition to stone and wall paintings, however the scope and approaches to rock art conservation have developed with distinct attributes. At the center of this difference is the awareness of the connection between physical and cultural conservation practices which are considered, planned, and undertaken in dialogue with one another. As a result, Traditional Owners,

custodians, and local and regional communities play an active role in determining conservation measures not only when positioned as stakeholders, but also as decision-makers and protectors of the physical and spiritual integrity of sites. The overarching philosophy is to assess and protect all values—tangible and intangible—and not neglect or diminish one over another.

When deterioration is present and is determined to be active with identified values in jeopardy, preference is given first to management strategies over physical interventions. When hands-on work is deemed necessary and appropriate, priority is extended to preventive and protective forms of conservation that respect cultural traditions and practices. When remedial, stabilization-type treatments are needed, these are kept to a minimum and presentation-focused work is generally avoided. Rock art's information value, which can contribute to our knowledge about the past, is also one that weighs into decision-making. Furthermore, because rock art must be considered to be an inherent part of the landscape it inhabits rather than an object in isolation, suitable expertise in landscape and environmental conservation may also be needed.

Conservators are trained in an extensive range of methodological processes that include documenting and surveying sites, assessing and recording condition, and identifying causes and mechanisms of deterioration. In addition to having technical knowledge of both preventive measures and remedial interventions, they are well-equipped to be able to make treatment recommendations that will slow visible and structural changes. The conservator can also contribute to an understanding of the materials and technologies used to create rock art and can employ scientific study where appropriate. They are well versed in the principles, standards, and ethics of conservation practice that aim to preserve and protect the site's values. This last skill holds particular importance with rock art when consulting and working directly with Traditional Owners, custodians, and local and regional communities throughout the conservation process is necessary to ensure that practices don't conflict with spiritual beliefs and other existing systems. Awareness and respect for these beliefs may require conservators to think differently about how they approach and solve conservation issues in a variety of contexts.

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Bradshaw Foundation, "The Four Pillars of Rock Art Conservation Policy and Practice," January 9, 2019. http://www.bradshawfoundation.com/rockartnetwork/pillar3.php

2.8 Preserving Rock Art in Satpura National Park (Madhya Pradesh), India

Meenakshi Dubey-Pathak

Between 2000 and 2002, a project on the "Documentation and Preservation of Rock Art of Satpura Biosphere (Pachmarhi)" was carried out for the Environment and Planning Department of Madhya Pradesh. Satpura National Park, located in the Pachmarhi Plateau and Hoshangabad, has a rugged terrain, and comprises a rugged terrain of gorges, sandstone mountains, waterfalls, streams, and forests. After its completion, the Forest Department of Hoshangabad (Madhya Pradesh) protected ten painted rock art sites in the National Park Area. The shelters were enclosed with railings (fig. 2.17) and a channel at the top of the panel was dug out to guide rainwater away from the structure. With the permission of Forest Department officials, forest guards can accompany visitors to the rock art sites.

FIGURE 2.17.
A protected site at Badkachar in Satpura National Park. Image: Meenakshi Dubey-Pathak.

In 2012, after observing graffiti damage at one of the rock art sites called Belkhandar 2 (fig. 2.18), authorities of the National Park and the Commissioner of Archaeology for Madhya Pradesh were advised of the risk, and needed protection, for two other important Belkandhar sites, Nishan Garh and Churna (fig. 2.19). The advice included taking immediate measures of protection, such as:

- The placement of interpretation panels in Hindi and Marathi in each of the three Belkandhar sites that read: "This is an ancient sacred site that must be entirely respected (no fires, no touching the paintings or writing on them)" with the warning that "any such action would expose people to severe harm and cause catastrophes to happen to them;"
- During the entire duration of the Indian festivals, *Shivratri* and *Naagpanchami*, the sites have been guarded by foresters to see to their protection;
- Protecting the sites as soon as possible with adequate fences similar to those already in place in adjacent areas.

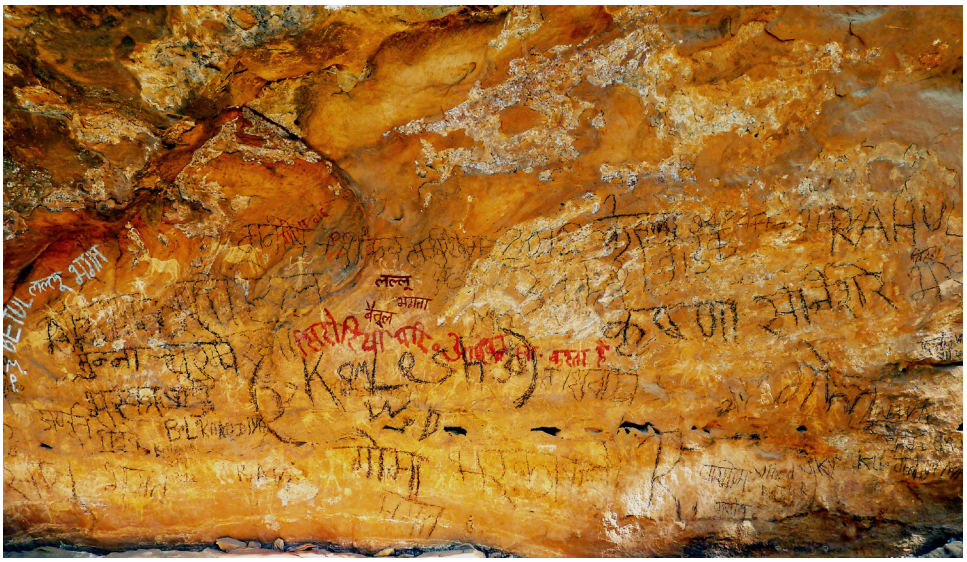

FIGURE 2.18.
A panel of paintings at the site of Belkandhar 2 has been heavily impacted by graffiti. Image: Meenakshi Dubey-Pathak.

FIGURE 2.19.
At Pachmarhi, Churna, an entire panel is dedicated to a battle scene with the representation of a big lion-man fighting with armed warriors. This is a classic theme called vyala. Image: Meenakshi Dubey-Pathak.

2.9 Collaboration Between the University of Witwatersrand (Wits) and the University of Edinburgh Helps Protect and Promote South African Heritage

Sam Challis

Rock Art Scotland South Africa (RASSA) is a newly seed-funded program implemented by Wits's Rock Art Research Institute (RARI) and the University of Edinburgh's Scotland Rock Art Project (ScRAP) to enable rural community field technicians to record San cave paintings with tough smartphones (fig. 2.20).

Rock Art Scotland South Africa (RASSA) will strengthen ties between the two universities' rock art organizations, RARI and the Scotland Rock Art Project (ScRAP). The respective co-principal investigators, Dr. Sam Challis and Dr. Jon Henderson, have been awarded prestigious seed funding to focus on three main objectives:

- Create a research agenda for the community stewardship of rock art sites in South Africa through the use of affordable digital enhancement and tough smartphones;
- Survey and record local rock with community groups in South Africa (including the training of five community rock art custodians);
- Develop a RASSA online platform where results and resources created during the project will be open to all.

This pilot project will further augment the efforts of the Matatiele Archaeology and Rock Art (MARA)-National Research Foundation (NRF)-funded research program operating out of RARI and led by Dr. Challis. Since 2011, MARA has been training community field technicians in rock art recording as well as excavation archaeology. MARA technicians were employed in 2015 to conduct a UNESCO survey for rock art and are now engaged in heritage impact assessment work ahead of planned dam building in Lesotho. In 2021, RASSA community rock art custodians have discovered ten new sites.

FIGURE 2.20.
A RASSA rock art custodian placing a scale to photograph newly discovered rock art. Image: Sam Challis.

2.10 Co-Producing Rock Art Recording with Community Members in Scotland

Qian Gao

Scotland's Rock Art Project (ScRAP) is a five-year Art and Humanities Research Council (AHRC) funded project aiming to enhance understanding and knowledge of Scotland's rock art through community co-production and research. Over the past few years, it has been training and supporting community teams to gather detailed information on prehistoric carvings across the country.

It was a beautiful, sunny winter day when I shadowed the ScRAP team at its fieldwork. On the hills overlooking the Lake of Menteith, the team worked with local community members to carry out recording of the cup-and-ring marked rocks of Ballochraggan, using methods ranging from traditional approaches to 3D modeling with photogrammetry. Most of the participants were older community members with an interest in archaeology and outdoor activities, keen to rediscover the rock art of local areas with their own hands. The challenge of locating the carvings, making sense of the abstract symbols, cleaning and recording the panels was fascinating to them. Before taking part in the fieldwork the community members attended at least one training session organized by the ScRAP team, which covered all the skills they needed to create detailed and accurate rock art records.

Most of the rock art panels of Ballochraggan were covered under turf or vegetation and the toughest part of the fieldwork might have been preparing the panels for recording. Soaked with moisture, these turfs were usually very heavy and had to be removed preferably in one piece (to be placed back later). After removing the turfs, participants used the cleaning kit, such as spatulas, brushes, and sometimes lollipop sticks, to clean the surface of the carved boulders, preparing them for recording (fig. 2.21). All the participants seemed confident while they conducted the works, and their most rewarding moments were when rock images were identified on a panel that seemed "patternless" at first sight.

FIGURE 2.21.
The rewarding moment when a ring-and-cup motif was identified unexpectedly after cleaning a seemingly uncarved panel. Image: Qian Gao.

2.11 Aotearoa New Zealand Community Engagement

Gerard O'Regan

Different geographies and colonial histories in each archipelago result in different cultural and conservation challenges for Pacific rock art today. Māori rock art in Aotearoa New Zealand was reported by scholars over 150 years ago. Yet the public still has only limited awareness of the carvings and paintings, especially those in situ in the landscape. In the South Island, regular reporting on their thirty-year survey has helped keep rock art in the minds of the Ngāi Tahu tribe. An archaeological survey project is currently helping to increase awareness of rock art among some local North Island Māori communities. However, direct engagement with the treasures is sporadic as most sites are on private land or in remote locations that are difficult to access. Only a handful of sites are easily visited by the public and have had protective cages installed, but the supporting interpretative material is scant. Local Māori do provide cultural tours to two of the best-known traditional rock art shelters—the paintings of the taniwha monsters at Opihi in the South Island and the North Island's Kaingaroa Forest canoe carvings. Tourist boats on Lake Taupō visit a cliff where, in the 1970s, Māori artist, Matahi Whakataka-Brightwell carved a massive tattooed face of an ancestor.

Overall, tourist interest in Māori rock art has not yet been widely developed and therefore, borders closed to international visitors and a downward spiral of the industry have not significantly impacted rock art heritage management. Rather, community engagement in Māori rock art continues to emerge through the graphic reuse of motifs. This unfolds from historic cultural appropriation by non-Māori and continues in Māori-driven cultural and education programs.

Cultural misappropriation of Māori rock art motifs took off from the 1950s after Theo Schoon, an artist originally employed to document the shelters for museums, introduced his artist friends to the heritage. Drawing from his experience with the shelters, Gordon Walters went on to produce some of New Zealand's most iconic modern art, whereas Rex Fairburn copied motifs onto fabric that was turned into wall hangings, cushions, curtains, and dresses. Notwithstanding the thorny issue of celebrating things that misappropriate indigenous heritage, and the flourishing of rock-art-inspired tourist junk that followed, the works of all three artists are now considered highly collectable contributions to New Zealand's art history. Since 2017, retrospective exhibitions for each have brought Māori rock art to the attention of art audiences across the country and provided opportunities for accompanying lectures that impart more archaeologically and tribally informed perspectives. The latter will be the focus of a touring exhibition in development by the two major South Island museums.

However, the most persistent public voice on the treasures is Te Ana, the Ngāi Tahu tribe's rock art visitor center that opened nearly ten years ago. Though its visitor numbers were low, even before the global pandemic, the demand for accurate Māori cultural information by schools has seen Te Ana develop as an important community educational resource. The same demand supported a rock-art-inspired puppet performance that has been toured nationally by its two Māori creators. Based on a traditional story, *Te Rereka—The Flight*, it has introduced Māori rock art imagery to thousands of young New Zealanders, evolved into a Māori language audiobook, and is being further developed for more extensive touring by the leading Māori contemporary dance group, Taki Rua Productions.

Across the South Island, rock art motifs have been reintroduced to landscapes in modern contexts, including in pou whenua (landmark posts) in civic spaces and artworks integrated in post-earthquake remedial road infrastructure. Installations by the Ngāi Tahu artist, Ross Hemera (fig. 2.22), continue the tribal relationship with the imagery in several public building projects. His childhood experience of the rock art shelters influenced the Ngāi Tahu arts collective's idea to camp in a Christchurch gallery while pulling together their 2017 contemporary art exhibition (much of which spoke to the heritage of painted landscapes). The kōhatu mauri, the stone that carried the spirit for the exhibition, was a rock art treasure cut from a shelter by museum interests in the early 1900s. A live video linked the exhibition to the distant source shelter, one of the few open to public visitation.

Once misappropriated and commodified, now increasingly woven into contemporary, indigenous art that continues cultural connection to the treasures, the graphic reuse of rock art imagery has generated a modern awareness and entrenched a commitment to the heritage within Ngāi Tahu and the South Island community. Similar pockets of awareness are developing in the North Island through initiatives on the management of ancestral places. But, across New Zealand, the harder challenge remains for the next decade—converting that awareness into conservation action on the treasures on the rock walls and beach boulders across all eight hundred Māori rock art sites.

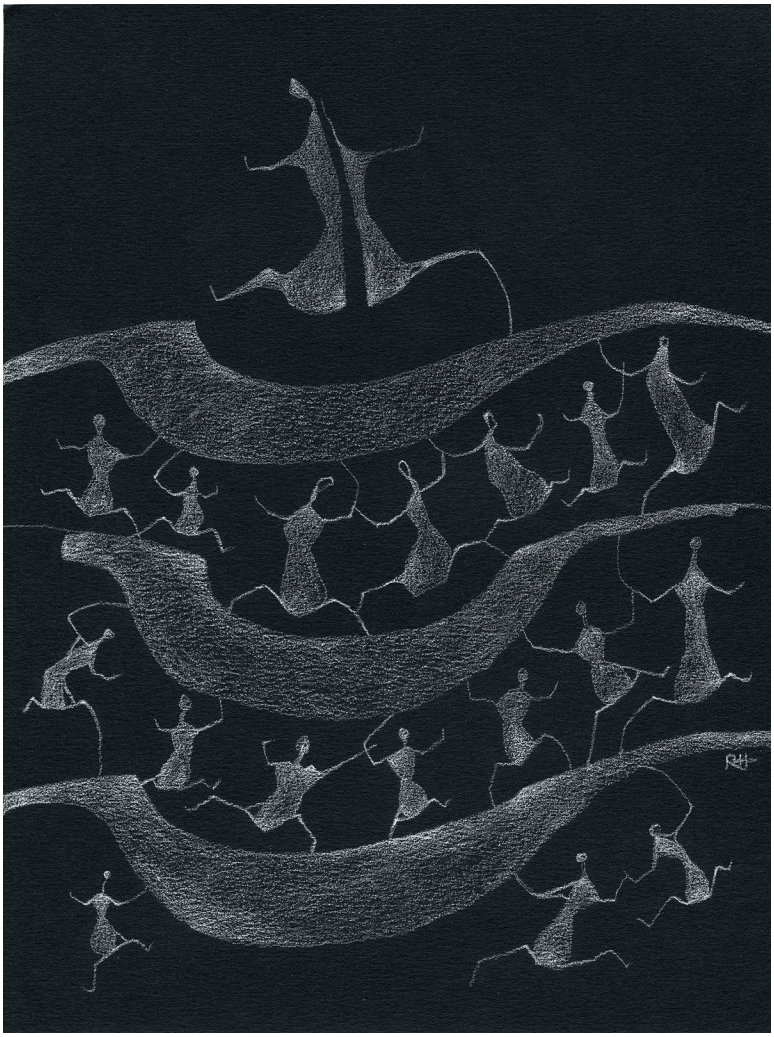

FIGURE 2.22.
Māori artists are increasingly reclaiming their rock art heritage, giving it new expression in different media and cultural spaces beyond the rock shelters. Ross Hemera, 2015. *Takata Waka (People of the canoes)*, Chinagraphic pencil on black paper. Image: Te Rūnanga o Ngāi Tahu.

2.12 Achieving Effective Community Engagement in Makgabeng, South Africa

Catherine Namono

One of the ways to decolonize heritage management and research has been to enlist the engagement of local communities. Decolonized approaches challenge Eurocentric research methods that undermine indigenous/local knowledge, beliefs, and experiences. Defining "engagement" and "the community" are slippery concepts to pin down and will be contextual. After having spent time working with the community in Makgabeng in Limpopo Province, South Africa, three key concepts emerged for effective management to occur: trust, respect, and ethics in practice. Scholars and researchers alike argue that we should use an indigenous lens when engaging with communities to scrutinize the choice of theoretical frameworks and methodologies to determine how research findings can be translated into actions that promote social justice.

Trust and respect are important for a decolonial research engagement with communities. Continued consultation, ethical practice and respect are paramount. Only a long, consistent slow engagement builds trust and respect, hence every visit to the Makgabeng community includes a community update meeting from all. Dr. van Schalkwyk, Edward Eastwood (RIP) and Professor Ben Smith have had longer interactions of trust and respect with the Makgabeng community than I have had. Together, we have built a comfortable relationship enabling maximum cooperation and minimal fear of exploitation and feeling of vulnerability by the Makgabeng community. In terms of decolonizing archaeology, values of trust and respect between academics and communities must be based on reciprocity, collaboration, and partnership.

Power relations rest alongside issues of trust and respect. The Makgabeng community will most likely concede to the power of the chief, Maleboho, followed by government representatives and then researchers. In decolonizing practice, having a power *with* rather than *over* methodology when working with communities emphasizes equality and a shared responsibility for the research endeavor. In addition, recognition of community elders, leaders, needs, and assets will ease the identification of where and how to channel benefits for the community as a collective.

Designing community engagement programs to fit specific communities is the cornerstone of the Community Heritage Tourism project in the Makgabeng. At a workshop in 2020 in Northern Sotho (written in English for my benefit), the community proposed heritage information structures for the tourist camp and information center in the village of Thabanantlana, Makgabeng (figs. 2.23a, 2.23b). As heritage holders and users, it was important that the new structures are meaningful for the community who would be living with and using them when tourists are not present. Using this decolonial framework to empower heritage holders in production of knowledge through research, we hope that trust, respect, and power of processes for the community will be adopted by heritage practitioners working with communities.

FIGURE 2.23A.
Peter Raseruthe presenting his group's ideas at a Community Heritage Tourism workshop. Image: Catherine Namono 2020.

FIGURE 2.23B.
Workshop participants engaging with the presentation. Image: Catherine Namono 2020.

CHAPTER 3

Action Plans for Public and Professional Networking (USA)

Tom McClintock

The capacity for the field of rock art preservation and management to benefit from greater professional collaboration was identified during the meeting in Kakadu, Australia in 2014 and the proposal to organize a group dedicated to exploring the benefits of such a collaboration was made in Namibia in 2017. The 2018 colloquium held in California and Texas in the United States was the first meeting after agreeing upon a title for the group: Rock Art Network (RAN). The choice of "Network," as opposed to "Alliance" or another similar moniker, was deliberate. It reflects the exchange and travel of ideas, without an explicit center or leader, and the geographic and professional coverage sought by the membership. The name evokes a matrix of trade routes kept alive through communication, without which it may unravel. RAN has no contracts or written agreements and this informality is maintained with a commitment of reciprocal participation among its members.

The collective vision for the trajectory of the newly minted Rock Art Network took shape in 2018 during meetings and site visits. The element of the 2014 Kakadu publication that resonated most strongly with our mission, Pillar I: Generating Public and Political Awareness, became RAN's founding principle. Awareness refers not only to recognition of rock art's global importance and distribution, but also to the endeavors of RAN's membership who represent the many facets of education, preservation, community engagement, and stewardship. It is expected that members, through their various professional channels, share information and knowledge not only with the public, but among RAN members as well. And so, the "network of networks" concept was born: the capacity for awareness and information to permeate the world through proactive sharing. This vision is articulated in the final paper at the end of this chapter, "The Power of Rock Art" (Little).

During the 2018 meetings in California and Texas, RAN encountered projects and sites that exemplify the vision of research, education, and stewardship. Four papers in the following chapter relate directly to rock art sites visited during the colloquium, Painted Rock in Carrizo Plain National Monument (Loubser and Hall), Little Lake (Van Tilburg and All), the Lower Pecos Region in Texas (Boyd) (fig. 3.1), and the status of rock art management in the Western United States (Whitley). Other papers in this chapter describe community engagement (Taçon), management and exhibition of historic rock art documentation (Kuba), application of SWOT analysis for rock art conservation in Wales (Nash), and the state of rock art management in Egypt (Ikram).

FIGURE 3.1.
Carolyn Boyd discusses her work with Shumla at the White Shaman Mural during RAN's 2018 visit. Image: Nicholas Hall.

3.1 The GCI Rock Art Management and Conservation Workshops at Painted Rock

Johannes Loubser and Nicholas Hall

Painted Rock (fig. 3.2) is a prominent horseshoe-shaped sandstone outcrop on the western edge of the Carrizo Plain in Southern California. Having experienced vandalism since at least the late nineteenth century, the GCI thought it an appropriate place to present two rock art management workshops, the first in 1988 (Rosenfeld 1988) and the second in 1989 (Stanley-Price 1989). During these workshops, state-of-the-art sustainable conservation management principles and practices (e.g., Sullivan 1983) were shared with attendees from a range of international institutions and governmental agencies. Additionally, in 1989, fifteen people from six different countries completed a one-year graduate diploma in Rock Art Conservation in Australia, jointly sponsored by the GCI and the University of Canberra. After completing the course, the participants requested additional instruction and experience in hands-on graffiti mitigation. The GCI, in conjunction with the Bureau of Land Management (BLM), presented a four-week hands-on graffiti removal and camouflage training project at Painted Rock. This article summarizes the following aspects of the training projects: the hands-on workshop at Painted Rock in April and May of 1991, follow-up work conducted at the site since the 1991 workshop, and the long-term conservation and management implications of the workshops on a national and international scale.

Hands-On Graffiti Removal and Camouflage at Painted Rock in 1991

Of primary importance for the graffiti mitigation project at Painted Rock in 1991 was the input of Native American groups. Prior to, during, and after the project, the BLM consulted with the Northern Chumash Council and worked with other Native American groups to visit the site (Sale and Padgett 1995). The California State Historic Preservation Office (SHPO),

FIGURE 3.2.
The main pictograph concentration at Painted Rock (Carrizo Plain National Monument), also known as the amphitheater. Image: Johannes Loubser.

after consultation with Native American groups, decided that all graffiti can be removed, except for a possible eighteenth-century inscription in Spanish (Sale and Padgett 1995).

Under the supervision of Andrew Thorn (1991), a core team of fourteen participants and Chumash volunteers removed and camouflaged painted and incised graffiti from within the interior amphitheater-like portion of Painted Rock. A major lesson from the hands-on experience is that, unlike the graffiti mitigation efforts under near pristine conditions in Australia, badly vandalized sites such as Painted Rock necessitate elbow grease, perseverance, abrasive materials, chemicals, and the application of pigment.

In addition to acquiring vital hands-on graffiti mitigation skills, participants consulted with knowledgeable invited visitors on physical analysis and dating methods at the site (Scott 1991), biological growth, animal activities, a range of alternative site management strategies, and Indigenous perspectives. The landscape and regional context of Painted Rock was clarified by visits to neighboring sites as well as to sites farther afield in Southern California.

Results of the GCI 1988-1991 Painted Rock Workshops within the Carrizo Plain

By the time the graffiti mitigation project commenced in 1991, the parking area had recently been moved, a hiking trail linking it to Painted Rock almost a mile away. These infrastructural modifications, recommended during the 1988 and 1989 workshops (Rosenfeld 1988, Stanley-Price 1989), resulted in a noticeable decline in graffiti at the site and nearby rock outcrops. Re-aligned fences not only prevented access to cattle and vehicles from reaching the various rock outcrops with precontact imagery, but also helped channel visitors to the trailheads. Materials available at the Goodwin Educational Center now include site visitation rules, trail brochures, a kiosk, and interpretive signage.

Baseline comparative photos were taken of all 151 panels at the site following the graffiti mitigation and regular monitoring by trained site stewards and BLM staff has documented changes since then. According to site steward logs, newly added graffiti averages 0.84 occurrences per year. Fortunately, none of these are on top of precontact images (Anonymous n.d.).

BLM archaeologists Duane Christian and Tamara Whitley undertook similar proactive management measures that helped minimize the occurrence of vandalism at Painted Rock and nearby precontact rock imagery within the Carrizo Plain National Monument, which covers 99,881 hectares within the Carrizo Plain. During Class II Inventory surveys for the BLM, Whitley (2003) found an additional three precontact sites with imagery. In 2005, another site was added to the inventory (Whitley 2005). As a result of these investigations, 100 nationally significant archaeological sites—those that include precontact rock images, cupules, bedrock mortars, village middens, lithic scatters, quarries, and rock cairns—are now part of a National Historic Landmark, the Carrizo Plain Rock Art Discontiguous District.

The BLM and the Carrizo Native American Advisory Committee (CNAAC) convene triennial meetings to discuss issues such as access for ceremonies and acceptable forms of research, conservation, and management (Smith et al. 2010). With CNAAC's consent, laser-scanners made 3D records of the rock surfaces within Painted Rock's amphitheater, thereby attempting a "virtual preservation" approach (Tamara Whitley, personal communication, 2010). In 2010 Loubser and Simon (2011) conducted detailed recordings and condition assessments at Painted Rock and in 2012 they did the same at seventeen additional precontact sites within the Carrizo Plain National Monument (Loubser and Simon 2013). Detailed maps and digital tracings of each motif resulted in the construction of a relative

chronology and calculation of correspondence of precontact images on the Carrizo Plain, which can be used for interpretive and scholarly purposes.

Painted Rock is currently open to the public, though tourism at the other rock imagery sites in the area is not actively encouraged. Since the Painted Rock workshops in the late 1980s, the BLM has implemented a variety of management decisions to promote Painted Rock and draw attention away from the other sites. Painted Rock is closed to unguided visits between March 1 and July 15 each year, though the Goodwin Education Center offers guided tours through reservation between March and the end of May. A new strategy of site visitation requires unguided visits to Painted Rock obtaining a BLM permit, which can be obtained online at Recreation.gov. Guided tour bookings can be done on the same web site.

Results of the GCI 1988-1991 Painted Rock Workshops Farther Abroad

Following the 1991 graffiti mitigation workshop, participants conducted conservation and management work with greater confidence in various parts of the world, primarily in Australia, North America, New Zealand, Sri Lanka, South Africa, and Tanzania. Graffiti mitigation and site management workshops conducted by participants farther afield include Bolivia, Canada, Hawaii, Jamaica, Lesotho, and Puerto Rico. These workshops, including presentations at conferences, helped spread knowledge regarding basic principles and best practices in site conservation and management to a wider audience. Knowledge gained by participants during the earlier 1988 and 1989 Painted Rock workshops and literature disseminated during those workshops, enabled agency personnel and other people involved in conservation and management to better understand problems and best practices associated with sustainable preservation of rock imagery.

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3.2 Volunteers for Rock Art: Tapping the Potential at Little Lake, California

Jo Anne Van Tilburg and Wendy All

The UCLA Rock Art Archive (RAA) thrives through its affiliation with the Cotsen Institute of Archaeology, but the real secret to its success is dedicated volunteerism. A productive team of volunteers participate in integrated archival and field lab experiences and support a successful public education and outreach program in the interest of rock art education and site conservation.

Because of RAA's success, we suggest that the program can be adapted for other areas that have vulnerable rock art sites and offer, as a case study, the Little Lake Ranch Research Project (fig. 3.3). A program with unique professional credentials, the Little Lake project spanned more than five years of weekend field seasons and daily lab work and culminated in both a major rock art database and a well-reviewed research publication. The project was staffed by a cadre of passionate rock art enthusiasts and long-term RAA volunteers in the venerable tradition of the "citizen scientist." Volunteerism was a social undertaking within a sophisticated learning environment and we suggest guidelines for replicating our program in other contexts.

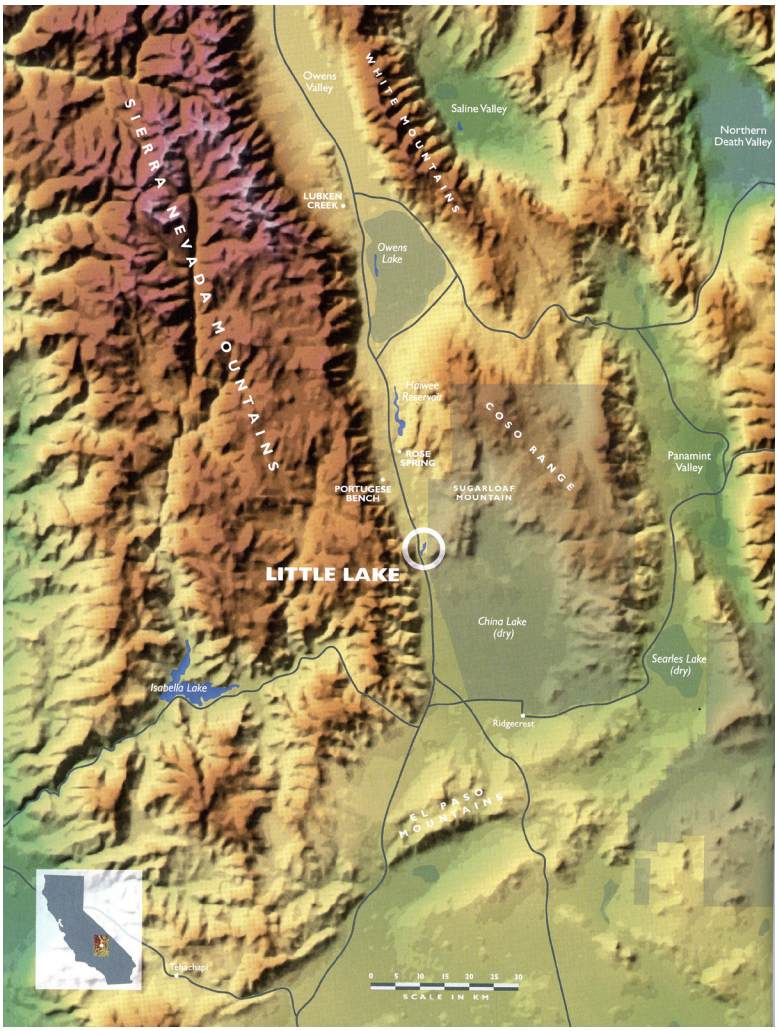

FIGURE 3.3.
Topography of Little Lake Ranch, Rose Valley, California, and surrounding area.

Volunteerism: Recognizing Issues and Establishing Goals

California rock art sites, though profuse and endangered, are historically marginalized by mainstream archaeology. The late Robert F. Heizer, who founded the California archaeological survey in 1948, was an early champion of rock art as a legitimate line of academic inquiry. He called upon students and independent researchers to contribute to his early database and these volunteers formed the vital backbone of early California rock art research and site conservation. Heizer's rock art papers, curated at the RAA, provide basic documentation for threatened rock art sites throughout California.

The well-established management strategy of the RAA requires a professional archaeologist to supervise one or more volunteer archivists. Continuing Heizer's tradition of recruiting volunteers through teaching, Clement Meighan created a rock art recording class and taught it in the UCLA Extension Division for five years. Jo Anne Van Tilburg served first on the Board of the RAA and in 1997 was appointed RAA director. Van Tilburg recognized that a larger volunteer staff with varied expertise was needed to move forward in the digital age. The objectives were to establish a visual database of rock art resources and, following Meighan's program, to expand the volunteer base through adult education.

Creating Volunteerism: Integrating Field and Lab

Van Tilburg converted the UCLA Extension Division's rock art field methods class into two coherent projects: the Riverside County Rock Art Survey and the Little Lake Research Group. She and the RAA volunteer staff, headed by Gordon Hull, conceptualized a new role for the archive as a digital teaching lab. In short, the idea was that field teams would collect visual data while learning recording methods and then process their data in the archive, thus learning database management. With this help, the Archive would gain data, the database would see positive use, editing and revision, and student participants would experience the results of good field recording transformed into a research tool for others.

The UCLA Extension class stressed teamwork and collaboration and, through the positive learning and social experiences they experienced during fieldwork, the class coalesced into a lab group with shared interests and a desire to build upon their experiences. A core group of thirty volunteers held bimonthly meetings to address and discuss some of these questions and interests but also kept the group involved. Eventually, the group dubbed itself the "Captured Visions Research Group" (fig. 3.4), a name that refers to a fundamental

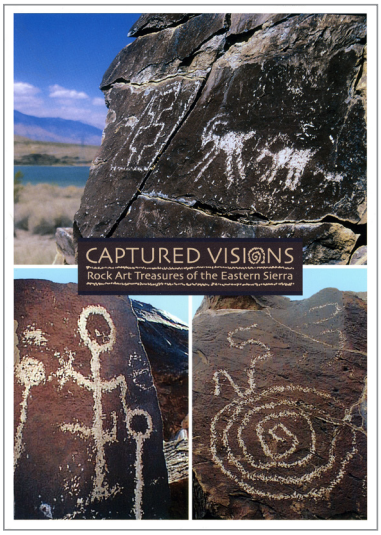

FIGURE 3.4.
Captured Visions promotion created by volunteer group for public outreach.

field recording task—the digital capture of rock art imagery—but also alludes to the revelatory experience that is the genesis of some, but not all, Little Lake Ranch rock art.

Nurturing Volunteerism: Legacy

Production of the visual database resulted in two major outcomes. The first is a contribution to site conservation. Our data demonstrated how some rock art panels were missing or moved due to seismic activity or flooding. This earned the Captured Visions team and the RAA the Governor's Historic Preservation Award, sponsored by the California Office of Historic Preservation and California State Parks. Once field and lab data were integrated, the Captured Visions Research Group enthusiastically transformed itself into the Little Lake Writing Group. The legacy of cooperation resulted in a coauthored volume, *Rock Art at Little Lake: An Ancient Crossroads in the California Desert* (fig. 3.5).

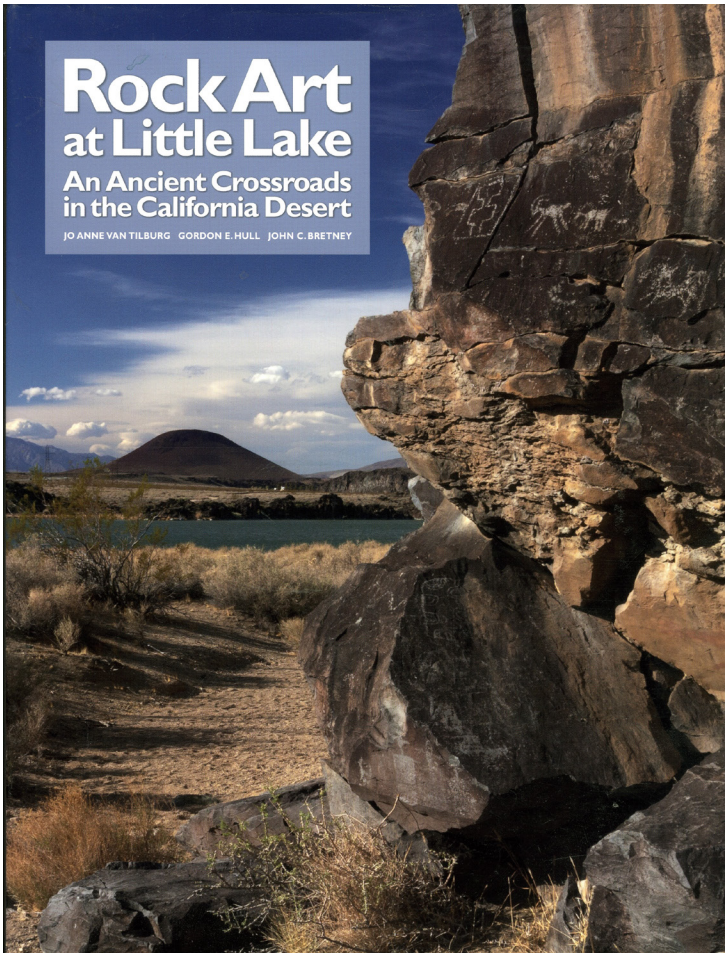

FIGURE 3.5.
Rock Art at Little Lake (2012), volunteer researched, designed, and produced publication, Cotsen Institute of Archaeology Press.

Lessons Learned

Not all volunteer experiences are equal. Some programs unfold naturally or surprisingly, while others demand considered and detailed planning. Not all areas have the same quality of educational resources or motivated participants. Most areas, however, have human populations concerned with today's changing world and their place in it. Rock art sites have a profound ability to enrich the human experience through a powerful magnetism that stimulates feelings of group unity by recognizing individual creativity. Helping an interested group build upon the power drawn from the recognition of a shared past stimulates thinking about the progress of the present and is a key part of developing volunteer participation.

There is growing recognition that management of rock art sites throughout the world is required to gain important insights into shared human behaviors. Yet proper site recording remains an emerging concern in some areas. We recognize that the Little Lake program of volunteerism organized within a major university and based in a populous city is not replicable everywhere, but we argue from personal experience that values-based rock art methods are transferrable, particularly to locales having proactive communities concerned with establishing and expressing social identity. Within the framework of local customs and procedures, and under the leadership of a local, heritage-based manager with appropriate skills, volunteerism can be a powerful force in stakeholder education while gaining professional recognition for rock art research and achieving good conservation outcomes for rock art sites.

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3.3 The Alexandria Project: Baseline Documentation of an Archaic Library

Carolyn Boyd

Shumla Archaeological Research & Education Center (https://shumla.org/) is a non-profit organization with a mission to preserve the 3,000-year record of hunter-gatherer rock art in the Lower Pecos Canyonlands. Rock shelters in this region of southwest Texas and Coahuila, Mexico contain some of the best-preserved and longest records of forager life-ways in North America, from about 13,000 years ago to European contact (Shafer 2013). Approximately 4,000 years ago, artists began producing complex murals along canyon and rock shelter walls, some stretching more than fifty meters in length and extending ten meters in height. These paintings are some of the oldest pictographs in North America. Sophisticated in their production and their content, the murals are forcing us to reconsider the complexity of hunter-gatherer belief systems and their relationship to the myths and cosmologies of later agricultural societies (Boyd and Cox 2016) (figs. 3.6-3.8).

FIGURE 3.6.
Cedar Springs Shelter (41VV696). Artists of Pecos River style rock art often portrayed anthropomorphs wielding a spear thrower (atlatl) and a staff. This unusual white anthropomorph (125 cm tall) carries two differently colored atlatls in its right hand and two staffs in its left hand, also of different colors. Image: courtesy Shumla Archaeological Research & Education Center.

FIGURE 3.7.
Halo Shelter (41VV1230). Halo Shelter is one of the premier rock art murals in the Lower Pecos Canyonlands. This section of the mural spans fifteen meters and holds more than 200 figures painted in red, yellow, black, and white. Image: courtesy Shumla Archaeological Research & Education Center.

In August 2016, Shumla launched an intensive field project designed to preserve this library of more than 300 pictorial manuscripts (Koenig et al. 2019). The project name, The Alexandria Project, harkens back to the Library of Alexandria in Egypt, which burned in 48 B.C. A staggering amount of knowledge about ancient philosophy, astronomy, and mythology was destroyed by that fire. The information encoded in the rock art of the Lower Pecos is no less significant. The Alexandria Project is designed to expediently catalog and digitize the Lower Pecos library and the wealth of knowledge it contains before it is lost to vandalism, changing environmental conditions, and the ravages of time. The project goals include:

- To establish a baseline record of the rock art in its current condition
- To generate a dataset that scholars and students around the world can use to conduct research and answer globally significant questions
- To inform decisions about which rock art murals should be prioritized for full documentation based on imminent threat and research import
- To increase public awareness in the importance of preserving and protecting rock art sites

As of December 2020, Shumla archaeologists have engaged site managers, landowners, and students while completing baseline documentation of 229 rock art sites north of the US/Mexico border. Concurrently, they have been working with Mexican archaeologists to plan for expanding the Alexandria Project south of the border into Coahuila. Baseline documentation involves two levels of data collection: core data and high-resolution panel data. Core data includes completion of a standardized state archaeological site form (TexSite), site maps, field notes, and photographs of other archaeological features and the landscape context. Shumla also collects detailed information about the rock art, which is entered into a searchable database, allowing researchers to search for specific styles, agents of rock art deterioration, and specific iconographic symbols and motifs. The iconographic data collected during the Alexandria Project affords a unique opportunity to create a detailed catalog of pictographic elements across the region and to identify patterns in their association and distribution.

FIGURE 3.8.
Panther Cave (41VV83). Anthropomorphs representing ancestral deities and mythological characters line the walls of Panther Cave. Some of these figures stand more than three meters in height. Artists adorned their bodies with headdresses, masks, and objects attached at the wrist, elbow, and hips. Many of the anthropomorphs carry a spear thrower (atlatl) in their right hand and other paraphernalia in their left. Image: courtesy Shumla Archaeological Research & Education Center.

High-resolution panel data includes 3D modeling and gigapanoramas. Shumla uses Structure from motion (SfM) photogrammetry to create 3D models of rock art panels by taking hundreds of overlapping photographs with a hand-held digital camera. These photographs are stitched together to create a 3D surface. Gigapanoramas are similar in concept, except that photographs are taken using a stable tripod mounted with a motorized pan-head (Gigapan Epic Pro). This allows for mechanical, incremental movements to capture images with at least 50% overlap. The main difference between a standard panoramic image and a gigapanoramic image is the size. A gigapanoramic image, or GigaPan, is a panorama containing at least one billion pixels. File sizes for processed GigaPans and 3D models range from 500 MB to 85 GB. Shumla has uploaded many of these to the Gigapan and Sketchfab websites for public viewing: https://sketchfab.com/shumlaarchaeological-center and http://gigapan.com/profiles/ShumlaArchaeologicalResearchCenter.

Shumla also disseminates results of the project through peer-reviewed publications, museum exhibits, professional and public presentations, and social media, such as a monthly eNews (https://shumla.org/enews-archive/enews/), blog posts (https://shumla.org/research/shumla-blog/), and Facebook (https://www.facebook.com/SHUMLA/). At an annual BBQ, Shumla shares updates on the project with landowners and site managers and recognizes these individuals and organizations for their important role as stewards of the rock art.

Shumla protects their data through incremental backups designed to maximize performance and data redundancy. In addition to a Redundant Array of Independent Disks (RAID) 6 configuration to protect the data in case of hardware defects, data are backed-up daily to an off-site server and monthly to an off-site cold storage location.

Shumla is collaborating with the Center for Archaeological Studies (CAS) at Texas State University to develop a long-term, comprehensive digital curation strategy for the Alexandria Project dataset. Their aim is to curate these data using industry standards to ensure digital preservation into perpetuity. This will form the foundation for future public and researcher access platforms, which will raise public awareness for site preservation and protection and facilitate further scholarship in Lower Pecos rock art.

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3.4 Improving Rock Art Conservation and Management in the United States

David S. Whitley

Euro-American interest in North American rock art has a long history. Famous Puritan religious leader Cotton Mather published one of the first reports, on Massachusetts petroglyphs, in the eighteenth century. Like other researchers into the late nineteenth century, Mather's interests were primarily philological: studying rock art as a putative clue to the origins of writing. Enough was known, at least in a descriptive sense, for a continental synthesis of the art in the mid-nineteenth century. But by Garrick Mallery's (1895) treatise, interpretation had shifted from language to ethnography: what we could learn about the art from tribal traditions and practices (Whitley and Clottes 2005).

Despite this early history, professional archaeological interest in US rock art languished during the twentieth century. With the exception of a handful of one-off monographs, rock art was effectively unstudied by professional archaeologists and not taught to their students. Although again there are minor exceptions, this pattern has continued into the twenty-first century. Since about 1970, meanwhile, US archaeology as a profession has dramatically changed. Once an almost exclusively academic profession, 80 to 90% of American archaeologists today are employed in some aspect of heritage management (Whitley 2009)—or, as it is labeled in the US, cultural resource management (CRM). Although adequate training for CRM archaeology is a larger disciplinary problem, it is fair to say that few if any CRM archaeologists, or future archaeologists, are trained in rock art—how it can be studied, its intellectual and other kinds of significance, and especially how it should be managed and conserved. Meanwhile these same CRM archaeologists are trusted with its care.

It follows that an important approach to improving the long-term sustainability of US rock art is to target rock art outreach and management training for CRM archaeologists. Key among these are agency archaeologists: those who work for federal and state agencies and are primarily responsible for site management. The relevance of this conclusion is emphasized when federal land ownership in the western US is considered (Table 3.1). As this illustrates, federal agencies (e.g., National Park Services, Forest Service) are the primary managers of about half of the lands in the western states, and this proportion includes the vast majority of open-space lands that are likely to contain extant rock art sites. Agency archaeologists are thus responsible for the treatment of a very significant proportion (if not the majority) of the total of US rock art sites.

This is well illustrated by the Naval Air Weapons Station, China Lake, California. This one-million-acre portion of the Mojave Desert includes the Coso Range, which contains the largest concentration of petroglyphs in North America and likely one of the largest corpora in the world (figs. 3.9-3.11). No accurate tabulation of the number of motifs at this locality has been obtained, but credible estimates place the total at over one million.

The Coso Range, with respect to rock art management, is a rare success story. It was one of the originally designated US National Historic Landmarks (NHL), thereby acknowledging its great national significance. Recognizing its importance, the US Navy set aside almost 175 square kilometers (36,450-acres) within its bombing and missile testing ranges to preserve this archaeological locality. In addition to a site visitor program, run by the local Maturango Museum, the US Navy has facilitated substantial research on the art, developed a Memorandum of Understanding with nine local Native American tribes to allow access

TABLE 3.1
Amount of land managed by federal agencies in the western United States (source: Stowell 2016).

State	Percent
Alaska	61.2%
Arizona	38.6%
California	45.8%
Colorado	35.9%
Hawai'i	20%
Idaho	61.6%
Montana	29%
Nevada	84.9%
New Mexico	34.7%
Oregon	52.9%
Utah	64.9%
Washington	28.5%
Wyoming	48.10%
West. States Avg.	49.6%
50 US States Total	27.40%

FIGURE 3.9.
Two anthropomorph petroglyphs from the 175-square-kilometer Coso Rock Art National Historic Landmark, California. Image: David S. Whitley.

FIGURE 3.10.
Some Coso petroglyphs, like these variations of anthropomorph motifs, exhibit no evidence of weathering or rock coating. Combined with historic horse and rider motifs, this helps support the argument that the Coso rock art tradition continued into recent times. Image: David S. Whitley.

FIGURE 3.11.
Although traditional interpretations claimed that the Coso petroglyphs were made for hunting magic (e.g., Grant 1965), the majority of the motifs are geometric designs such as this example, which has no obvious logical connection to an association with hunting. Image: David S. Whitley.

for religious and other purposes, and completed a management plan for the district (Whitley and Hale 2010).

The Coso Range is a success story for two reasons: strong public interest in the sites resulting in the site visitor program conducted by the local museum and individual agency archaeologists at China Lake who, recognizing the importance of the petroglyphs, sought and obtained funding to bring in rock art specialists to assist with developing a management program. The agency archaeologists themselves were not rock art specialists; it was instead individual influences on the agency archaeologists, by the rock art community, that caused them to see and act on the need to proactively manage the petroglyph sites.

Our best strategy for improving the sustainability of US rock art then is to influence and instruct individual agency archaeologists about the need for and the process of managing the sites on the lands that they control. These agency archaeologists are effectively the gatekeepers to rock art sites. Properly approached by the rock art community, they have the potential to become the sites' salvation.

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3.5 Achieving Effective Community Engagement in Australia

Paul S.C. Taçon

Archaeologists and First Nations communities have been working closely together on cultural heritage research projects in Australia for several decades (e.g., see Davidson et al. 1991). Engaging with communities collaboratively for rock art research and conservation has occurred since the 1970s in some parts of the country, especially Kakadu/Arnhem Land (e.g., see Chaloupka 1993; Taçon 1989). Genuine friendships have developed in the process and many communities have been effectively engaged in rock art research with particular rock art specialists for long periods of time.

This is partly because for Aboriginal people across Australia, rock art is considered to be part of living culture rather than a "relic" or archaeological artefacts (Taçon 2019a; Williams et al. 2019). And it was noted since at least the late 1920s that Aboriginal people in Arnhem Land and elsewhere took great pride in their rock art:

> The local tribes are very proud of their works of art, and never missed a chance of conducting our party to any of their art galleries which happened to be located in the districts we traversed. Our interest in and admiration of the work were greatly appreciated (Basedow 1928:9).

Rock art continues to play various roles in contemporary society not only in Australia, but in many parts of the world (see Brady and Taçon 2016). Furthermore, for Indigenous peoples in various countries rock art is a part of contemporary identity and is fundamental to well-being, as is heritage more generally (Taçon 2019a; Taçon and Baker 2019). But in today's rapidly changing world, the well-being of individuals and groups is increasingly challenged. The physical well-being of rock art and other forms of heritage is also threatened, with important sites increasingly impacted by mining and other forms of development. For instance, in 2020 one of the most important rock shelters in Western Australia, in Juukan Gorge, Pilbara and with occupation extending back over 46,000 years, was blown up by Rio Tinto for mining (Hepburn 2020), sacred trees hundreds of years old were cut down in Victoria to widen the Western Highway near Ararat (Blakkarly 2020), and graffiti increased at rock art sites in various parts of the country.

Well-being can be defined in a number of ways (e.g., social, personal, economic, cultural, environmental, psychological, spiritual, or physical), but essentially well-being consists of a positive sense of personal and cultural wellness that results from strong cultural identity. Strong cultural identity is underpinned by connection to tradition, heritage, and shared histories. Well-being is thus defined as a positive sense of psychological, physical, emotional, and spiritual satisfaction that results from being part of a culture and community that actively engages with its heritage. Consequently, when heritage, including rock art, is damaged, destroyed, or threatened, the well-being of individuals and communities is negatively impacted.

This was brought to the fore in December 2018 when a fire destroyed a viewing platform made of a recycled plastic product and nearby hand and hafted stone axe stencils in a Carnarvon Gorge, Queensland shelter called Baloon Cave. Aboriginal Elder Milton Lawton said everyone associated with the site was spiritually wounded by the fire event. He had had disturbing dreams for weeks after the fire and when he saw what the fire did to Baloon Cave he and his family became physically ill for six days. Emotions ran high for many months after the fire and many people in the community felt spiritually demoralized

for some time. However, everyone wanted healing to take place and something positive to come out of what happened (Taçon 2019b).

The tragedy of Baloon Cave led to the First Nations community associated with Carnarvon Gorge to work out a new relationship with Queensland Parks and Wildlife to better protect rock art sites. New channels of communication and avenues of funding opened up. But for a variety of reasons, it is often difficult for Indigenous people in Queensland or elsewhere in Australia to get resources to conserve, manage, and protect their rock art for future generations or to maintain ongoing engagements with parks staff, archaeologists, and rock art specialists (Winn and Taçon 2016).

At the beginning of any rock art research project in Australia important conversations with relevant community members, such as Aboriginal Traditional Owners, Custodians, and Mangers have to take place if effective engagement is to be initiated. At initial meetings not only is it explained what research is desired to be undertaken, why and how, but also community members are asked what they would like to get out of research on their rock art. Common requests from First Nations people include making videos of collaborative research to be shared with other community members, rock art conservation and management plans, information for rock art tourism, various forms of training, short-term employment, information for small exhibitions in cultural centers, co-authorship of academic papers as relevant, plain English reports after each field season, assistance with establishing databases and/or archives, highly visual short rock art books or other educational products, and assistance with travel to academic conferences for co-presentation. Communities also emphasize the importance of their retaining intellectual copyright over their rock art imagery.

Once relationships have been established, ongoing communication, collaboration, and respect are some of the key ingredients for maintaining effective community engagement. It also is important to give back to communities, to maintain an even playing field, and to keep promises in relation to what the communities will get out of the research.

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3.6 Out of the Archive. Rock Art Exhibitions and Community Involvement: The Case of the Frobenius Rock Art Collection

Richard Kuba

The Archive

The Frobenius Institute for Research in Cultural Anthropology in Frankfurt has the oldest and most comprehensive collection of copies of prehistoric rock paintings in the world. It comprises about 8,600 copies from four continents, many of which are now considered rarities. The significance of this archive lies above all in the age of the copies—they were copied and painted by some two dozen professional painters on site between 1913 and the early 1960s—as well as in the regional breadth of the pictures, which come from Africa, Europe, India, Australia, and Oceania. In some cases, the copies made by members of the Institute are now the only remaining documentation of certain rock art ensembles, as the original sites have since been destroyed.

The founder of the Institute, Leo Frobenius, discovered the cultural and historical value of rock paintings in the Sahara and southern Africa at a very early stage of his career. His commitment to rock art research began in the last years of the nineteenth century. The first expedition explicitly dedicated to rock art documentation took him and a staff of experts and painters to the North African Sahara Atlas from 1913 to 1914. They mostly copied the motifs on canvas in their original size. Especially in the interwar period, the Institute undertook several further rock art expeditions, e.g., to the Sahara, South Africa, Norway, Northern Italy, Southern France, and Eastern Spain as well as to New Guinea and Australia. Today, the archive consists of drawings, rubbings, and paintings in various techniques and in variable formats of up to 2.5 x 10 meters as well as thousands of photographs documenting the copying process and the original rock art sites.

The interest in prehistoric art is related to the developing avant-garde painting and sculpture in the first decades of the twentieth century in Europe and the US. From the late 1920s onwards, parts of the collection were shown in numerous exhibitions. The rock art, converted into two dimensions, in rectangular form, and hangable on a wall, was presented to the public like recognized masterpieces. Not only in Germany, but also in Paris, Brussels, Amsterdam, Zurich, Rome, Johannesburg, and New York, the unusual paintings generated great attention with a large audience and inspired renowned modern artists. The 1937 exhibition at New York's Museum of Modern Art was so successful that the paintings went on a two-year tour through thirty-one US cities. It was the first time these rarely seen and distant images were brought into the world at large.

After having been almost forgotten, the Rock Art Archive came to life again some ten years ago, due to the development of new documentation techniques, especially color photography, since the 1960s. As part of a project financed by the German Research Foundation the collection was accessed, indexed, and digitized. Since then, the Rock Art Archive is accessible via the internet in the form of an image database. Furthermore, the Rock Art Archive was stored in accordance with the principles of long-term conservation and it was recently nominated for the UNESCO “Memory of the World” register.

Exhibitions

The digitization of the collection proved essential for developing several exhibition concepts around the archive. In 2016 some 120 historical rock art copies were exhibited in the prestigious Martin-Gropius-Bau venue in Berlin. It was the largest display of copies from

Frobenius's expeditions since the 1930s and drew some 40,000 visitors. The catalogue was reprinted three times and reviews were extremely positive. A smaller exhibit on African rock art was shown in Dakar, Senegal, in early 2017, involving modern artists of the vibrant Dakar art scene and in the second half of 2017 the exhibition *Frobenius, El mundo del arte* rupestre was seen by over 200,000 visitors in Mexico City's Museo Nacional de Antropología. In 2019 the exhibition *Frobenius. The Art of Research* drew over 10,000 visitors to Frankfurt's Museum Giersch. It showcased the adventurous expeditions undertaken in the first half of the last century to document worldwide rock art and the biographies of the daredevil painters, often young women, who copied the panels.

All these exhibitions sought to establish rock art for what it is—a unique universal form of human art, connecting ancient and modern worlds, as inspiring to artists and to the general public today as it was a hundred years ago when it became widely known for the first time. Through these exhibitions a number of museums asked for permission to loan rock art copies for diverse exhibition concepts. Among them was the Pompidou Centre in Paris for its 2019 exhibition *Préhistore, une énigme modern*. It focused on the close connection between prehistoric art and modernism. In the most important morning news program on French television, instead of showing works of by Picasso, Mirò or Klee, artists whose work is also shown in the exhibition, it was the two large-format copies of rock paintings made during Leo Frobenius' expedition to what is today's Zimbabwe in 1929 that were highlighted.

Collaboration with Traditional Owners

These exhibitions are meant to increase public awareness of rock art as global human heritage among a more urban public. However, the archive also has a huge potential for outreach to local communities living in rock art regions as well as Traditional Owners. Currently a project has started to initiate the systematic and collaborative assessment of the German ethnographic expeditions to the Northwest Kimberley that were conducted by the Institute in the late 1930s. (fig. 3.12). The project will foremost draw on unpublished archival materials (photos, drawings, sketches, reproductions of rock art images, personal

FIGURE 3.12.
Janet Oobagooma and Leah Umbagai inspecting museum objects from their Kimberley communities in Frankfurt.

notebooks), and the direct input from members of the Wanjina Wunggurr community. As such, the project is a case study of critical research history and anthropological knowledge production. It is highly significant for the Aboriginal communities that are involved in this endeavor. The project is also designed to productively contribute to key contentious issues for ethnographic or anthropological archives, museums, and collections today. The project aims to contribute to the discussions about current challenges by concentrating on the analysis of a corpus of relevant materials from the Kimberley that are held in German institutions, summarize and digitize these, initiate the reconstruction of the circumstances and intellectual contexts of their creation, and assess their significance and future potentials in a deeply collaborative fashion. In early 2021, the Traditional Owners of Kimberley rock art were closely involved in the planning of a new rock art exhibition in Zurich's Museum Rietberg.

3.7 Rock Art Conservation in Wales through SWOT

George Nash

The Upper Palaeolithic site of Cathole Cave is located on the Gower Peninsula (fig. 3.13) and in 2010 a rock art discovery there was considered to be of international importance. The cave is now only one of two sites in the British Isles that contain Upper Palaeolithic rock art.

FIGURE 3.13.
The Upper Palaeolithic site of Cathole Cave is located on the Gower Peninsula, southwest Wales.

At the time, most areas of the cave were publicly accessible and had been subjected to systematic and accidental vandalism, usually through archaeological and antiquarian investigations, campfires, and graffiti. The cave site stands within an area still frequented by many thousands of visitors each year, usually during the summer months. The long-term damage probably started with an archaeological excavation in the main gallery of the cave by Colonel Woods in 1864. During this excavation over c. 1m of deposit was removed across much of the main gallery. The rock art discovery was of an engraved cervid, possibly a reindeer (fig. 3.14). This and several other engravings of possibly a similar date were located towards the rear of the cave. Samples from an overlying flowstone revealed two minimum dates of 12,572 ± 660 cal. BP and 14,505 ± 560 cal. BP using uranium-series disequilibrium dating.

FIGURE 3.14.
An engraved cervid.

It became apparent that the rock art and the associated archaeology required a long-term strategy to protect and preserve this unique resource. As a result, a SWOT (Strengths, Weakness, Opportunities, and Threats) analysis was applied and identified issues such as excessive visitor footfall, vandalism, and threats to the wildlife, in particular protected bats. Involved in the SWOT analysis were a number of stakeholders who had vested interests in the cave, its landscape, its ecology, and archaeology. The stakeholders included Natural Resources Wales (landowners), Cadw (Governmental Welsh Heritage Agency), National Museum of Wales, and academics from the University of Oxford, who were involved in the verification process. The project management was administered by me through the Department of Archaeology, University of Bristol and all documentation was relayed to Natural Resources Wales. Strengths of the site included its archaeology and its research history, as well as the discovery of datable rock art. Weaknesses included easy accessibility to the site and to those sensitive areas of the cave where the rock art is located. Identified opportunities were mainly connected to education, information dispersal, and research, while threats were associated with further visitor footfall and vandalism, in particular, the potential damage to the rock art.

From the results of the SWOT analysis, a decision was made to erect a steel grille across the rear section of the main gallery. This device, funded by Cadw was installed in 2013 allowed the public access to the cave but, at the same time, restricted access to the rear section where the rock art is located. SWOT also concluded that better monitoring of the cave and the surrounding landscape was needed. As a result of the SWOT analysis the site is now better managed and monitored with regular inspections, controlled access in the more sensitive areas of the cave, and seasonal management of the vegetation and undergrowth of the surrounding landscape.

3.8 Rock Art in Egypt

Salima Ikram

Due to the wealth of pharaonic monuments, traditional rock art plays a much smaller role in tourism in Egypt than elsewhere in Africa, although it remains a focus of scholarly research. Painted remains are rare and are primarily focused in the southwest corner of Egypt at Gebel Uweinat, an area that is shared by Libya and Sudan. The area is protected insofar as special permits are required to travel and camp there, which holds true for most of the rock art sites in Egypt's Western and Eastern Deserts, save for those found within the oases of the Western Desert (the Eastern Sahara). The majority of the surviving rock art in Egypt is carved, pecked, scraped, or incised, and is found on rock faces along the Nile Valley, with concentrations starting south of Luxor, as well as in the surrounding deserts.

The construction of the Aswan High Dam in the 1960s flooded several archaeological areas, and in response, several rock art panels were removed for safety, together with the temples in their vicinity, and can be seen in their new locations, notably at Kalabsha, as well as in the Nubian Museum in Aswan. Concern for the preservation of rock art is high, and discussions are underway as to how to protect sites from vandals as well as from quarrying activities. Suggested solutions include establishing areas as protected and patrolled parks, as well as moving panels to museums, in addition to extensive documentation projects.

There are many collaborative rock art projects throughout Egypt, with different scholars with various specializations from all over the world working together. The Cave of the Beasts (fig. 3.15) in the Eastern Sahara has been worked on by a German team; an Egyptian-German team is carrying out rescue work along the Darb al-Tawil, going from

FIGURE 3.15.
Cave of the Beasts—paintings showing humans, giraffes, and possible lions/baboons or headless creatures. Image: Salima Ikram.

Asyut to Dakhla Oasis, a Polish mission is active in Dakhla Oasis, a Pakistani-International mission in Kharga Oasis (fig. 3.16), a Swedish-Egyptian mission in Gebel el-Silsila, a Belgian-US group working in ElKab, to Norwegian-British-Egyptian in Aswan, several Egyptian missions, and Italian groups working in the area of Farafra Oasis and Aswan, to name but a few projects. It is notable that in Egypt, most rock art missions are international.

FIGURE 3.16.
This image from the Kharga Oasis shows different periods of petroglyphs from c. 3900 BC to 1200 BC. Image: Salima Ikram.

3.9 The Power of Rock Art

Terry Little

The opening lines of a statement prepared and endorsed by a working group of rock art professionals and enthusiasts from every continent, brought together as the Rock Art Network (RAN) by the GCI at a colloquium in California and Texas in 2018 reads, "Rock art—ancient paintings and engravings on rock surfaces—is a visual record of global human history. It is a shared heritage that links us to powerful ancestral worlds and magnificent landscapes of the past. It tells the story of the birthplaces of art, the dawn of artistic endeavors."

Despite it being a valuable cultural asset, rock art is often not understood, respected, or valued by the general public. Decision makers and governments offer little support for its protection and valorization compared to other types of threatened natural and cultural heritage. Attempts to reach a wider public through museums, exhibitions, books, tourism products, radio interviews, and websites have not yet significantly raised public awareness. With members throughout the world, RAN is well placed to distribute this statement widely to people in all walks of life and awaken an interest that will ensure a longer life for the rock art legacy of our ancestors (fig. 3.17).

In response to this perceived need, the above statement is aimed at demonstrating both the values and threats for rock art. The statement was created as a tool to increase awareness and support the efforts of people and institutions whose aim is the preservation of this treasure of humankind. It has so far been translated into over forty-eight languages and this effort itself has sparked debate about the meaning of the message in different communities where rock art is found.

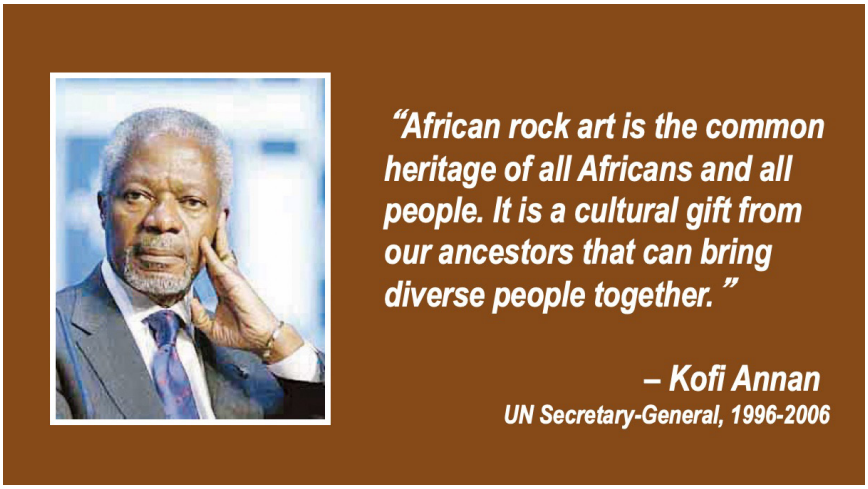

FIGURE 3.17.
Kofi Annan was a champion for the preservation of Africa's rock art heritage during his tenure as the United Nations Secretary General (1996–2006).

CHAPTER 4

Replication of Rock Art as Conservation (France/Spain)

Terry Little

The third colloquium of the Rock Art Network (RAN) took place in France and Spain in 2019 and presented participants the opportunity of visiting three of the world's best-known rock art sites, albeit through their in situ replicas. Chauvet, Lascaux, and Altamira are listed UNESCO World Heritage sites and offer examples of the values and challenges of replication as conservation, as heritage, and as drivers of local economies. Site visits were interspersed with discussions on a wide range of topics including preventive conservation, public outreach, and collaborative efforts of RAN members both individually and institutionally (fig. 4.1). The network also took action to generate strategies and solutions for the recognition, sustainable use, and conservation of rock art as a global resource of universal value to society at large and specifically to communities that have responsibility for the care of sites. This chapter includes an appraisal of the rock art facsimiles of the Lascaux and Chauvet caves in France as sites for tourism resources as well as tools for conservation, research, teaching, and learning (fig. 4.2). What are the ingredients for making a visit to replicas feel authentic?

FIGURE 4.1.
RAN members in the replica of Altamira Cave, Spain in 2019. Image: Noel Hidalgo Tan.

FIGURE 4.2.
RAN members visiting the replica of Lascaux, France in 2019. Image: Tom McClintock.

Including the three iconic rock art sites mentioned above, there are 1121 sites that, as of 2020, UNESCO has deemed as being unique, irreplaceable, and authentic. Forty-eight of these sites on five continents specifically contain rock art. This chapter looks at various ways in which the UNESCO World Heritage Center guides this aspect of rock art heritage. Other articles look at technology—in terms of monitoring and management through the CARE app— that is being used in the United Kingdom. It also discusses public accessibility through digital representations, tools like DStretch and photogrammetry, mobile phone devices, and the large variety of social media channels. Another article is about the example of access at the Bryn Celli Ddu passage tomb in Wales, which has significantly increased public engagement and interest through a number of creative archaeology programs.

Chauvet is also the subject of an exceptional book—both in size and perspective—which aims to re-situate art and archaeological remains within their physical, temporal and cultural contexts. The cave of Altamira in Spain, for example, had more than 170,000 annual visitors until 1978 when it was defined as being chronically ill. A 2014 Preventive Conservation Plan defined systematic working methods to better conserve the Altamira cave and its art, and authorities now allow only five visitors per week to the actual site. As a comparison, consider that there were 20,000 daily pre-Covid visits to the Mogao Grottoes in China during holiday periods. The Altamira cave replica completed in 2001 accommodates thousands of daily visitors.

4.1 Rock Art Site Facsimiles: Genuine Tourism Resources which also Serve as Tools for Conservation, Research, Teaching, and Cultural Mediation

Jean-Michel Geneste

The objectives for making facsimiles are multiple: they primarily concern tourism, conservation, and research. These productions do, however, also satisfy other educational and cultural goals.

A Primary Concern for Tourism

Rock art replicas were originally inspired by the need to provide the public with access to sites with fragile conservation conditions or to those sites that were difficult to reach and required protection and prioritized conservation efforts. Replicas usually concern caves and ornate shelters as their dimensions, access, and internal climatology are frequently obstacles to their being open to the public whose presence is the cause of disturbance of their environment. Caves that are vast, well-ventilated, and have been opened to the outside environment for a long time are subject to fewer restrictions, although even these are always systematically limited. (for example, Niaux and Rouffignac in France). The capacity of these newly designed tourist sites is much greater than the original ones. For example, Lascaux IV and Chauvet 2 (which opened in 2015 and 2016) receive hundreds of thousands of visitors per year (fig. 4.3).

FIGURE 4.3.
The building housing the facsimile designed by the architects Fabre and Speller. Chauvet 2 replica, Ardèche, France. Image: J. J. Delannoy.

Undeniable Authenticity

"Lascaux II" was inaugurated in 1980 and was the first of the architectural facsimiles to be opened to the public as an autonomous tourist establishment. At that time, only a part of the Lascaux Cave was replicated—those rooms whose painted walls were the most easily reproduced. Due to the technical difficulty of working on concrete applied to a metallic architecture, painted works with engravings were not reproduced. The advent of composite

materials in the early 1990s allowed for the development of much lighter and more accurate decorated walls. At the same time, the digital recordings of painted walls and of archaeological sites in their entire dimension made the implementation of 1:1 copies of sites possible. The reproductions of easy-to-handle panels are made in workshops before being assembled in their final place of exhibition.

This new generation of facsimiles, which replicate vast caves in their entirety, allows the public to be fully immersed in a universe which is close, if not identical, to that of the original models greatly favoring the emergence of multiple sensations and emotions. It also assumes the monumentality and authenticity of the original site more than the previous ones, which were often partial.

The facsimiles of rock art sites have reached a level of authenticity that is good enough to no longer be the object of the types of previous criticism (fig. 4.4). The commitment of archaeologists and scientists in the making of the most recent Chauvet, Lascaux, and Cosquer replicas (Cosquer is currently in progress) is a generally accepted principle. This makes it possible to validate the scientific and artistic conformity of the copied works to the originals by ensuring their technical authenticity, since they are often made with techniques and pigments similar to the originals. It is also a matter of validating the geomorphological conformity of the floors, walls and ceilings, as the artistic works are presented in the geological, environmental context of the underground environment. All these elements contribute to making these facsimiles into clones of the original sites that restore unique prehistoric works without betraying their uniqueness. From macro to micro, the scales of digital reproduction are also those of research and conservation.

FIGURE 4.4.
The geological landscape occupies a vast area in this life-size replica, requiring concentrated technical efforts for its realization. Chauvet 2 replica, Ardèche, France.
Image: J. J. Delannoy.

A Research Tool

Digital surveys are one of the fundamental study tools for researchers working in fragile sites where they can only stay for a very short time and in ways that are sometimes difficult to prepare for. Working in the laboratory from digital models recorded in situ once and for all is therefore an ideal solution that contemporary technology has made it possible. The digital models used in these sites must make it possible to approach different scales: that of geological sites which extend tens, hundreds, or thousands of square meters as well as that which allow a detailed reading of the finest engraved works.

The Digital Model Behind the Replica: A Strategic Conservation Tool

The recording of a three-dimensional digital model has also become a major curatorial gesture. Although the costs remain high, such a tool provides the authorities who manage archaeological sites with a multi-purpose reference tool. The digital model is effectively used for research as well as for checking the state of conservation or for making a copy of works (figs. 4.5-4.7). To establish a monument's digital recording is to create an inventory of fixtures at a given time that will serve as a reference—a baseline. It can serve as a preview of different future needs (e.g., technical, scientific, conservation, museological, tourist, educational, promotional) for sites of all periods and materials, not only for rock art, archaeological sites, monuments, murals, or statues. The recent destruction of archaeological

FIGURE 4.5.
The stainless steel architecture that supports the walls was made by the ironworkers from the digital model. Chauvet 2 replica, Ardèche, France. Image: J. J. Delannoy.

FIGURE 4.6.
The finishing and coloring phases of a natural replica wall in sprayed concrete. Chauvet 2 replica, Ardèche, France. Image: J. J. Delannoy.

FIGURE 4.7.
An ornate pendant being installed in the replica. Chauvet 2 replica, Ardèche, France. Image: J. J. Delannoy.

sites in areas of armed conflicts has been partly offset by pre-conflict digital recordings. It has also become a strategic conservation gesture.

A Mediation Tool and a Teaching Aid

During the visit to a site's replica, teachers are able to use reproductions that present a rock art site as an artistic and environmental ensemble that is not dissociated from its context. Rock art is a set of technical and artistic expressions inscribed in the physical world and all scales of reading are necessary to understand its meaning. It becomes entirely accessible at the same time in the facsimile. Recent experiments conducted with European university students who have the opportunity to visit the replicas of Lascaux and Chauvet show to

what extent these facilities, which were initially exclusively tourist facilities, can be used as teaching aids for archaeology, geomorphology, art history, or philosophy (fig. 4.8). Today's facsimile is the most authentic experience that technology allows us to create in order to meet professional needs as well as to satisfy and reach out to a wide range of audiences. Having a replica of a rock art site primarily benefits tourism, archaeological research, and monument conservation, but by bringing works to far-flung beneficiaries, they can also serve as teaching and research tools for various fields and disciplines.

The scientific and cultural mediation of rock art requires the development of a new language and conceptual means that can reach an unequalled authenticity and, furthermore, an immersive and multi-sensorial one. The facsimile asserts its autonomy and specificity: one can walk through it and live a unique and personal experience.

FIGURE 4.8.
The Centre International de l'Art Pariétal in Montignac, France is an almost complete facsimile of the Lascaux cave discovered in 1940: 500m2 of reconstruction of the famous walls, 3D cinemas, a rock art interpretation center, and a temporary exhibition space for contemporary art. The designers from the Norwegian architecture agency Snøhetta have imagined a building perfectly integrated into its environment where one walks in as if entering a cave. Image: J. P. Chadelle.

4.2 Preventive Conservation at the Cave of Altamira, Spain

Pilar Fatás Monforte

Altamira's rock art is extremely fragile heritage. While this is an intrinsic feature of all rock art expressions, it is further aggravated in the cave of Altamira because of both natural and anthropic conditions. Altamira has a geologically unstable formation where rocks that have been sinking and falling rocks since Prehistory; it is a cave that is in the process of collapsing and gradually disappearing through natural evolution. For this reason, after it was discovered, several interventions were performed which did improve its stability but also irreparably changed the cave's natural dynamic, prompting serious conservation problems with its rock art. These changes in its "architecture" were joined by the interventions to prepare it to welcome tourist visits in the first half of the twentieth century. These visits, more than 170,000 visitors per year in the 1970s, led to a chronically ill cave where all we can do today is apply preventive conservation measures that slow down the deterioration processes.

When the tourist overexploitation was brought to an end in 1978, the greatest priority for the cave of Altamira has been to protect it and, to that end, a series of multidisciplinary research projects has been undertaken. Over the course of the following forty years, the cave has been characterized physically, chemically, biologically, and geologically in an effort to gain a detailed understanding of the deterioration processes. In parallel, preventive conservation strategies have been put into place to improve its preservation: delimiting the protected area on its surface (allowing for measures like eliminating the presence of pollutants in the water that seeps in and vibrations caused by productive activities and traffic), removing artificial elements inside such as handrails and lights, and restricting access for visitors and for researchers.

In 2014, a new comprehensive diagnosis of its state of conservation was undertaken with the goal of equipping the cave with its own Preventive Conservation Plan (PCP) while also identifying the impact of the human presence on the cave's conservation conditions (fig. 4.9). The PCP defines and implements systematic working methods (measures and

FIGURE 4.9.
Works in the Polychrome hall of the Cave of Altamira within the framework of the Preventive Conservation Plan. Image: Ministry of Culture and Sports of Spain / IPCE.

actions) to better conserve the cave and its art and describes response mechanisms to situations that endanger this conservation. All of this is based on preventive conservation strategies that act at the source of the risk with the goal of slowing down the deterioration and avoiding or minimizing the loss. The overarching goal is to study the losses in order to apply the most appropriate conservation strategies.

The tracking and control actions stipulated in the PCP are defined in a series of protocols applied by different research teams from either the museum or its partner institutions: environmental and microbiological control, geological-structural stability, and the monitoring of the surface activities in the cave's sphere of influence, among others. The PCP also limits the cave's accessibility and carrying capacity, meaning the amount of time people can stay inside the cave without exceeding the thresholds established by the natural environmental dynamic of the cave, while also bearing in mind the cumulative effect.

The research based on tracking and describing the environmental factors and the anthropic influences on them have enabled us to identify the main active risks in the cave. We can, therefore, identify and address deterioration early by applying the most appropriate solutions. The main risks identified are associated with processes related to water infiltration and condensation, microbiology, and geology. In order to understand and apply conservation measures for these deterioration processes, paint dissolution and other processes have been recorded and quantified, the karst in the cavity has been described in greater detail (at a macro and micro level through geophysics), and the water dynamic on the cave's ceiling has been examined via a study of the micro-basins generated on a photogrammetric model.

Altamira's extremely fragile microbial ecology has also led to two major studies on the behavior and genomics of the bacterial colonies living on the walls and ceiling of the cave. Determining their main source of food has enabled us to implement corrective measures in an effort to lower the arrival of nutrients inside it. Likewise, the stability of the rocky massif at the site is constantly monitored, enabling us to identify and correctly associate any potential rock displacements or the opening of fractures which could pose structural risks to the cave. Preventive conservation criteria are applied which enable us perhaps not to avoid but at least to slow down or minimize the deterioration factors that affect the cave of Altamira. Furthermore, they are applied with sustainability criteria to optimize limited, but necessary, resources and ensure that any interventions remain stable over time.

4.3 Rock art on UNESCO's World Heritage List

Pilar Fatás Monforte

In 2020, UNESCO deemed 1,121 sites on five continents unique, irreplaceable, and authentic. Included on the World Heritage List, these are sites with such exceptional, cultural, or natural value that they transcend borders, rendering their protection an international duty and the concern of all humanity. This list was created according to the Convention Concerning the Protection of the World Cultural and Natural Heritage adopted by UNESCO in 1972, as an instrument to protect these extraordinary sites.

Among all the World Heritage sites, forty-eight of them specifically contain rock art (fig. 4.10). For most of these, the rock art itself is the value for which they are included in the List, while in others it is one of the added values to a landscape or natural area. This large number reflects the fact that rock art is the only universal art form over time and space. It is the oldest artform, dating from at least 43,000 years ago. This exceptional, universal feature of rock art has gradually been reflected on the List and the current map, which reveals its widespread geographic distribution.

Chronologically, the first two rock art sites to be designated World Heritage Sites were the Decorated Caves of the Vézère Valley (France) and Valcamonica (Italy), both in 1979. The Rock-Art Sites of Tadrart Acacus (Libya) were added in 1982, and the Cave of Altamira (Spain) and the Rock Art of Alta (Norway) in 1985. Very few were considered again until

FIGURE 4.10.
A map, accessible on the Bradshaw Foundation webpage, produced through a collaboration between RAN members shows the global distribution of rock art sites on the World Heritage List. Image: Bradshaw Foundation.

1994: Serra da Capivara (Brazil), Sierra de San Francisco (Mexico), the Lines and Geoglyphs of Nazca and Palpa (Peru) and the Rock Carvings in Tanum (Sweden).

In 1994 the World Heritage Committee reconsidered the list since, up to that point, many of the "traditional" categories, such as cathedrals or historical cities, had expanded while other forms of heritage, like prehistoric or industrial sites, had been neglected. Furthermore, the list's growth had been extremely uneven in terms of geographic distribution, with most sites in Western countries. Thus, the Committee presented the "Global Strategy for a Representative, Balanced and Credible World Heritage List," which set new strategies to make the list more varied, geographically balanced, and representative of the world's cultural and natural richness. Since then, progressively, other sites with rock art have been honored as World Heritage.

Rock art can be found in all regions and in all landscapes: forests, steppes and deserts, mountains and valleys, in the depths of caverns, and in open air. It is found in massifs such as the Ennedi Plateau (Chad), on steep cliff walls such as the Chaco Canyon (USA), or in post-glacial fjord landscapes like Alta (Norway). In terms of motifs, the majority are animals, particularly those characteristic of the landscape or the climate where they were rendered: elands in Maloti-Drakensberg Park (South Africa and Lesotho); guanacos in Cueva de las Manos (Argentina), giraffes, lions, and rhinos in Twyfelfontein (Namibia) and Matobo Hills (Zimbabwe), horses in Tamgaly (Kazakhstan); camels in Wadi Rum (Jordan); reindeer in Alta (Norway) and deer, bison, and horses in the Palaeolithic Cave Art of Northern Spain (which together with Altamira has been on the List since 2008), to mention a few examples.

While in Palaeolithic art few human figures were painted or engraved and they are not very naturalistic, since at least 10,000 years ago hunting, gathering, grazing, dancing, and fighting scenes have been featured in rock art. Magnificent examples can be found, for example, in the Rock Art of the Iberian Mediterranean Basin (Spain) or Bandiagara (Mali). In contrast to the animal renderings, depictions of human anatomical parts like the vulva and especially the hand, either in outline or as handprints, have been common motifs on five continents since the oldest art; the best example is unquestionably Cueva de las Manos (Argentina).

Depictions without counterparts in nature are called signs. These are frequent and widespread throughout the world and over time. They can be simple geometric shapes like triangles, circles, rectangles, or dots, or more complex ones like spirals and labyrinths. Most of the European Palaeolithic rock art sites have examples of these, as well as sites in Africa (Chongoni, Malawi, and Lopé-Okanda, Gabon), in the Americas (the Prehistoric Caves of Yagul and Mitla, Mexico), in Australia (Uluru-Kata Tjuta and Kakadu National Parks), or the more recent engravings in Sulaiman-Too Sacred Mountain (Kyrgyzstan).

While the motifs are varied, so too are the techniques used to make them. The most common colors in drawings and paintings are red and black, but white tones are also frequent in sites like Kondoa Irangi Rock Paintings (Tanzania). The carvings were made by hitting or incising the rock to create shallow or deep grooves, as seen at Côa Valley and Siega Verde (Portugal and Spain), two masterful examples of open-air carvings. And we cannot forget geoglyphs, huge figures on the ground or on mountainsides made by removing or adding rocks to make the lines of each figure, such as the emblematic Lines and Geoglyphs of Nazca and Palpa.

However, if all rock art has one thing in common it is unquestionably its fragility since it is constantly exposed to both degrading natural and human factors. In addition to raising awareness of the need to enlist everyone in safeguarding this heritage, UNESCO created

the List of World Heritage in Danger for sites that run the risk of disappearing or of seriously deteriorating. Today, Tadrart Acacus (Libya) and Air and Ténéré (Niger) are on this list, due to the socio-political instability of their countries.

Rock art is a visual book that recounts our history and our way of understanding the world. Not only about the past, it is a living culture and part of our identity of what we are today. Therefore, both the oldest and the most recent rock art become meaningful in their landscape, societal, and cultural contexts. Understanding this should lead us to appreciate the extraordinary importance of this cultural expression and the need to preserve, not only its physical integrity through protection and conservation measures, but also its associated values. The sites on the World Heritage List have already been protected but let us not forget that there may be as many as 400,000 known sites with rock art on the planet and they all share the values and features outlined here. Therefore, we all can and should contribute to preserving them.

4.3.1 ICOMOS-IUCN Connecting Practice Project and the Culture-Nature Journey

Janette Deacon

The Connecting Practice Project that the International Council on Museums and Sites (ICOMOS) and the International Union for Conservation of Nature (IUCN) launched in October 2013 with support from The Christensen Fund aims to explore, learn about, and create new methods of recognition and support for the interconnected character of the natural, cultural, and social values of World Heritage Sites. It is designed to test ideas that can influence a shift in conceptual and practical arrangements for considering culture and nature within the World Heritage Convention and beyond, as well as to help define strategies that can translate theory into practice at a site level.

The Forward Together symposium at the US/ICOMOS conference in 2018 expanded these ideas and sought to advance the evolving collaboration between ICOMOS and IUCN by including ICCROM and UNESCO to explore ways to shape more sustainable conservation (see https://usicomos.org/symposium/symposium-2018-proceedings/). At the same meeting, the following were identified in The Presidio Declaration for continuing the Culture-Nature Journey (also called the Nature-Culture Journey) and dovetails well with the principles proposed by the Rock Art Network (see https://usicomos.org/the-presidio-declaration/):

- Taking a landscape approach,
- Recognizing intangible heritage and diverse perspectives,
- Enhancing resilience, adaptation, and sustainability,
- Building capacity for change to a cohesive, unified narrative of World Heritage sites in the U.S.

The first two phases of the project included meetings at two rock art sites, the Maloti-Drakensberg Park World Heritage Site between Lesotho and South Africa and the Petroglyphic Complexes of the Mongolian Altai (Brown and Verschuuren 2019). The third phase began in 2019 to explore practical interventions and new mechanisms for achieving positive results for agricultural and biocultural practices in landscapes (see https://www.icomos.org/en/home-wh/56423-connecting-practice-workshop-7-8-february-2019).

Reference

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4.3.2 World Heritage Outstanding Universal Values

Paul Taçon

According to the ICOMOS Rock Art World Heritage Pre-nomination Guidelines (2010) for successful nomination to the World Heritage List:

1. The outstanding universal value should be justified with comparative analysis and criteria;
2. There should be a very strict selection of sites;
3. Rock art sites nominated to the list will have better chances of being inscribed when: (a) they meet several, and not just one, criteria; (b) adequate research and data about site(s) is extensive and archived in an accessible database about site(s); (c) problems of conservation and management are solved and adequately dealt with; (d) there is a clear and comprehensive nomination substantiated with relevant documentation.

To be included on the World Heritage List sites must be of outstanding universal value and meet at least one out of ten selection criteria. Of the rock art sites or properties on the World Heritage List, 95% fulfill criteria iii: "to bear a unique or at least exceptional testimony to a cultural tradition or to a civilization which is living or which has disappeared"; (45%) fulfill criteria i: "to represent a masterpiece of human creative genius"; 42.5% fulfill both; 20% fulfill criteria iv: "to be an outstanding example of a type of building, architectural or technological ensemble or landscape which illustrates (a) significant stage(s) in human history" (ICOMOS 2010).

We can conclude from these figures and a more detailed analysis of rock art on the World Heritage List that chances of success are better if rock art complexes or groupings, rather than individual sites, are nominated and a landscape approach is taken. Secondly, nominations should include criteria iii and i as a minimum, but chances of success are better if criterion iv is included and/or a natural criterion (one of vii, viii, ix and x). Lastly, there is a need to both expedite the process (as it currently takes far too long) and create an international rock art World Heritage List, one that is possibly supported by a digital archive as suggested in 2010 (see http://whc.unesco.org/en/rocktart/).

Reference

ICOMOS. 2010. Rock art: Pre-nomination guidelines in the framework of the World Heritage Convention. Paris: ICOMOS.

4.3.3 The Periphery of UNESCO World Heritage Sites

Savino di Lernia

North Africa hosts three rock art properties on the UNESCO World Heritage list: Tassili n'Ajjer in Algeria (1982), Tadrart Acacus in Libya (1985), and Ennedi in Chad (2016). The management of the properties and involvement of stakeholders are different, as are the outcomes in terms of preservation and use. Inclusion on the UNESCO World Heritage list typically leads to several advantages: sites are better managed, better preserved, and are more attractive for socio-economic development and tourist exploitation. This disparity can have important repercussions on sites that are in the immediate vicinity of UNESCO properties.

As a case-study, the Tadrart Acacus rock art sites in Libya are separated by a mere fifty kilometers from the massif of the Messak, one of the richest rock art galleries in the world (fig. 4.11). The first rock art site in North Africa (Barth 1846) was recorded here, not far from the world-famous site of Mathendous (2008 World Monuments Watch). At approximately the same time of the Acacus inscription on the list, the entire Messak Plateau became the ground for oil exploration, with irreparable damages to the natural landscape, archaeological contexts, and rock art sites. Oil extraction infrastructures, recently paved roads, and other facilities have dramatically increased accessibility to rock art sites, further endangering their preservation.

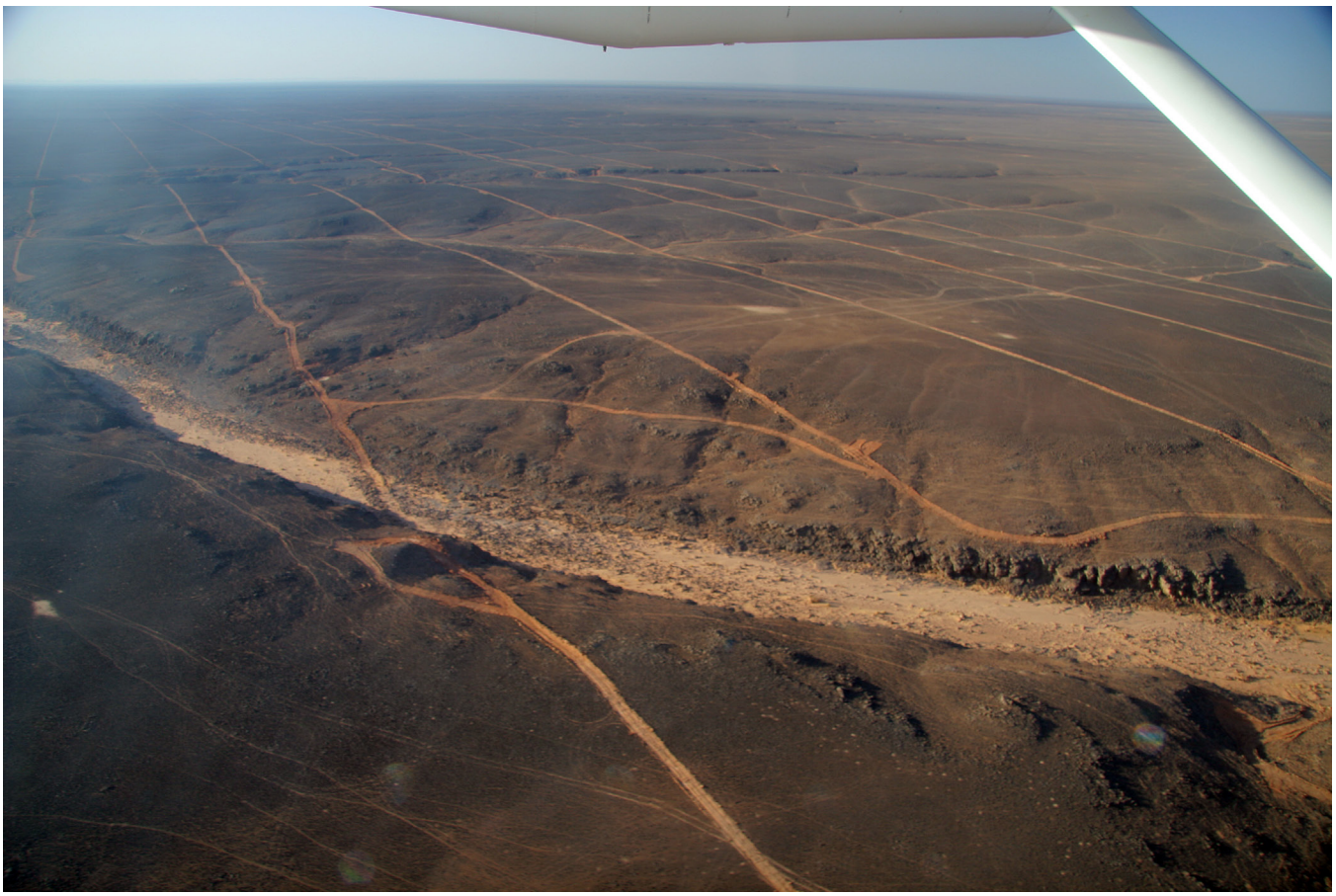

FIGURE 4.11.
Aerial view of the seismic lines scarring the surface of the Messak plateau, southwest Libya. Image: The Archaeological Mission in the Sahara, Sapienza University of Rome.

A similar fate may befall the world-famous site of Niola Doa, on the northern side of the Ennedi Massif (fig. 4.12). The extent of the property listed was reduced by about 20% from the original map (which covered the entire massif), excluding extraordinary sites such as Niola Doa from the UNESCO property. In addition, the buffer zone was completely removed from the northern side and was limited to a one kilometer corridor. For these reasons, the criteria of authenticity and integrity are no longer satisfied (ICOMOS 2016). Given the interest for oil exploration in the region, is the fate of Niola Doa more endangered than other sites falling within the UNESCO property?

The relevance of a UNESCO site generates important benefits for the inscribed property and related activities. Nonetheless, it is necessary to develop adequate management plans so that the conservation of a UNESCO site will not be at the expense of an immediately adjacent context, as these Saharan cases illustrate.

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FIGURE 4.12.
Despite being physically located in the Ennedi Massif (northeast Chad), the magnificent engravings of Niola Doa are excluded from the present boundaries of the UNESCO World Heritage property. Image: David Coulson, Trust for African Rock Art.

4.3.4 Central Asian Rock Art on the World Heritage List and the Tentative List

Knut Helskog

Rock art exists in all five Central Asian countries. Two properties with rock art are included in the World Heritage List and seven (that the States Parties consider to be of Outstanding Universal Value) are included on the Tentative List. Properties nominated to the World Heritage List must be included in the State Party's Tentative List at least one year prior to the submission of nomination. In short, several rock art sites are yet to be nominated.

In Kazakhstan, Petroglyphs within the Archaeological Landscape of Tamgaly site was included in the World Heritage List in 2004 (fig. 4.13). The Tentative List (not yet nominated to the World Heritage List) from Kazakhstan includes the **Petroglyph Site of Sauyskandyk (XVIII BC – III AD) (submitted 2016)**, **Petroglyphs of Arpa-Uzen (submitted 1998)**, and **Petroglyphs of Eshkiolmes (submitted 1998)**.

In Kyrgyzstan, Sulaiman-Too Sacred Mountain in Kyrgyzstan was included in the World Heritage List in 2009. The Saimaly-Tash Petroglyphs, 3200 meters above sea level and only accessible at the end of summer, was included in the Tentative List in 2001and remains to be nominated.

FIGURE 4.13.
The landscape of Tamgaly Valley, a World Heritage Site in Kazakhstan. Image: Knut Helskog.

In Uzbekistan, the Petroglyphs of Sarmishsay site was included in the Tentative List in 2008 (figs. 4.14 and 4.15). The nomination dossier, Petroglyphs within Archaeological and Natural Landscape of Sarmishsay, was nominally improved and re-submitted to UNESCO twice in 2011 and with minor changes in 2012 but is not yet included to the World Heritage List. The Siypantosh Rock Painting and the Zarautsoy Rock Paintings, also in Uzbekistan, were included in the Tentative List in 2008 but have not yet been nominated to the World Heritage List.

No rock art from Tajikistan or Turkmenistan is on either the Tentative List or the World Heritage List.

References

UNESCO: The World Heritage List and the Tentative List (https://whc.unesco.org/en/list/)

Rogozhinskii, Aleksey and Viktor Novozhenov. 2018. Central Asia Cultural Rock Art Landscapes Frequently Asked Questions/FAQs. IICAS: Samarkand. ISBN 978-601-7283-99-5.

FIGURE 4.14.
Rock art from the Sarmishsay rock art site in Uzbekistan, on the World Heritage Tentative List. Image: Knut Helskog.

FIGURE 4.15.
Bulls and people from the end of the Neolithic V-IV thousand years BC and the Bronze Age, III-II millennium BC, Sarmishsay, Uzbekistan. Image: Knut Helskog.

4.3.5 The 2010 World Heritage Survey

Janette Deacon

Management at Rock Art Sites Inscribed on the World Heritage List

The impact that World Heritage listing has had on rock art sites worldwide has been variable and difficult to assess. In an effort to measure the impact of inscription on conservation, management, and visitor numbers, UNESCO sent a questionnaire in 2009 to the managers of thirty-five sites that were inscribed on the list at that time. Fifteen responded although one, I Sassi e il Parco delle Chiese Rupestri di Matera in Italy was not, strictly speaking, a rock art site and Mwela in Zambia was on the Tentative List at the time. Seven responses came from Africa (Tsodilo, Pobé Mengao, Chongoni, lUi-llAis, Mapungubwe, uKhahlamba-Drakensberg, Mwela), four from Europe and North America (Gobustan, Matera, Alta, Tanum), three from Latin America and the Caribbean (Cueva de las Manos, El Fuerte de Samaipata, Serra da Capivara) and one from Asia and the Pacific (Kakadu) (World Rock Art Archive Working Group 2011).

Surprisingly, although site management plans are a prerequisite for inscription, only two of the respondents reported full implementation of their plan, Serra da Capivara and uKhahlamba-Drakensberg. Part of the reason might be that nine of the managers regarded their budget as inadequate. As a barometer of their dedication to conservation, seven sites reported regular monitoring, six did so intermittently, and four had not implemented a program for this purpose. Part of the reason could be that very few staff members are trained in rock art management and none were trained conservators.

In spite of management issues, there was nevertheless general agreement that World Heritage listing had had a positive contribution to public awareness of rock art and thirteen of the sites used a rock art image for branding. Nine sites provided information on visitor numbers.

Reference

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4.4 CARE Rock Art Monitoring App and Portal

Aron Mazel and Myra Giesen

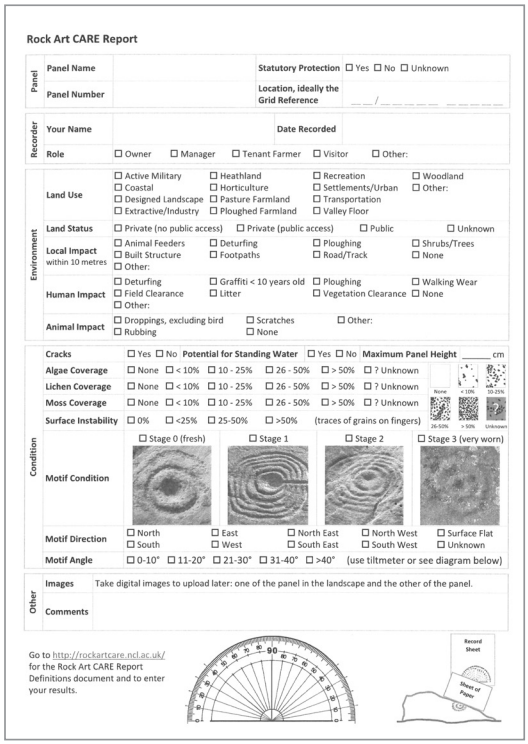
Rock art assemblages around the world are threatened by a wide range of factors, none more so than the open-air rock art in the United Kingdom (UK) and Ireland, which was made by Neolithic and Early Bronze Age people between about 6000-3800 years ago. About 7000 panels are known of this entirely abstract rock art tradition (Mazel and Giesen 2019; fig. 4.16). Despite its appearance of robustness, this rock art is not only threatened by the intensification of agricultural and industrial practices, which results in carved rocks being scratched by livestock and driven on by farms vehicles, including tractors, but also by climate change. Of particular concern is that the predicted warming of temperatures together with increased seasonally variable temperatures, precipitation, and stronger wind speeds will encourage physiochemical weathering leading to the intensification of stone deterioration (Giesen et al. 2014a).

FIGURE 4.16.
About 7,000 panels of abstract rock art are known in the UK. Despite the impression of durability, rock art panels like the one pictured are under threat. Image: Aron Mazel.

It is clear that we need a better understanding of the mechanisms informing rock art degradation, one that is supported by a monitoring tool kit to recognize the threats to rock art and determine whether management intervention is needed. In response, an interdisciplinary team of heritage management specialists, ecological engineers, and geomorphologists at Newcastle University and Queen's University Belfast established a collaborative project entitled, “Heritage and Science: Working Together in the CARE of Rock Art” (hereafter CARE; *https://rockartcare.ncl.ac.uk/#!/*). The development of the monitoring tool kit will be discussed in the following paragraphs.

The abundance of rock panels together with the reduced capacity of heritage agencies in the UK and Ireland means that these bodies are not able to undertake meaningful monitoring of rock art, particularly as rock art panels tend to be widely scattered across the landscape (Mazel and Giesen 2019). It has, therefore, become crucial to develop a moni-

toring toolkit that can enable public involvement in the collection and organization of information vital for the long-term safeguarding of rock art. In developing our monitoring toolkit, we were conscious of the lack of a universal tool to monitor and evaluate the condition of open-air rock art. We developed a single-paged monitoring form (fig. 4.17), taking into consideration previous recording and monitoring forms along with insights ascertained in previous research in Ireland and the UK (e.g., Barnett and Diaz-Andreu 2005, Giesen et al. 2014b) and those generated through the CARE project.


Rock Art CARE Report

Panel
Panel Name
Statutory Protection ☐ Yes ☐ No ☐ Unknown
Panel Number
Location, ideally the Grid Reference

Recorder
Your Name
Date Recorded
Role ☐ Owner ☐ Manager ☐ Tenant Farmer ☐ Visitor ☐ Other:

Environment
Land Use ☐ Active Military ☐ Coastal ☐ Designed Landscape ☐ Extractive/Industry ☐ Heathland ☐ Horticulture ☐ Pasture Farmland ☐ Ploughed Farmland ☐ Recreation ☐ Settlements/Urban ☐ Transportation ☐ Valley Floor ☐ Woodland ☐ Other:
Land Status ☐ Private (no public access) ☐ Private (public access) ☐ Public ☐ Unknown
Local Impact within 10 metres ☐ Animal Feeders ☐ Built Structure ☐ Other: ☐ Deturfing ☐ Footpaths ☐ Ploughing ☐ Road/Track ☐ Shrubs/Trees ☐ None
Human Impact ☐ Deturfing ☐ Field Clearance ☐ Other: ☐ Graffiti < 10 years old ☐ Litter ☐ Ploughing ☐ Vegetation Clearance ☐ Walking Wear ☐ None
Animal Impact ☐ Droppings, excluding bird ☐ Rubbing ☐ Scratches ☐ None ☐ Other:

Condition
Cracks ☐ Yes ☐ No
Potential for Standing Water ☐ Yes ☐ No
Maximum Panel Height _____ cm
Algae Coverage ☐ None ☐ < 10% ☐ 10 - 25% ☐ 26 - 50% ☐ > 50% ☐ ? Unknown
Lichen Coverage ☐ None ☐ < 10% ☐ 10 - 25% ☐ 26 - 50% ☐ > 50% ☐ ? Unknown
Moss Coverage ☐ None ☐ < 10% ☐ 10 - 25% ☐ 26 - 50% ☐ > 50% ☐ ? Unknown
None < 10% 10-25% 26-50% > 50% Unknown
Surface Instability ☐ 0% ☐ <25% ☐ 25-50% ☐ >50% (traces of grains on fingers)
Motif Condition ☐ Stage 0 (fresh) ☐ Stage 1 ☐ Stage 2 ☐ Stage 3 (very worn)
Motif Direction ☐ North ☐ South ☐ East ☐ West ☐ North East ☐ South East ☐ North West ☐ South West ☐ Surface Flat ☐ Unknown
Motif Angle ☐ 0-10° ☐ 11-20° ☐ 21-30° ☐ 31-40° ☐ >40° (use tiltmeter or see diagram below)

Other
Images Take digital images to upload later: one of the panel in the landscape and the other of the panel.
Comments

Go to http://rockartcare.ncl.ac.uk/ for the Rock Art CARE Report Definitions document and to enter your results.

Record Sheet
Sheet of Paper

FIGURE 4.17.
A single page rock art monitoring form incorporates important features from previous iterations and results from previous research in the UK, Ireland, and the CARE project.

The input of members of the public in two co-experience participatory workshops and face-to-face conversations with seven people responsible for managing the land (such as tenant farmers and landowners) was crucial to ensuring the user-friendliness of the monitoring forms. These interactions proved invaluable, especially with the wording of the monitoring form. Initially, it was intended that the form would be paper based, but during the project the opportunity arose to convert the paper-based form into a bespoke app supported by a portal (see: https://rockartcare.ncl.ac.uk/#!/). This provided us with the opportunity to tap into the immense potential that emerging technologies provide to source rock art monitoring data from the public (Turner et al. 2018). Before finalizing the app, extensive testing was done to rectify any possible glitches by people who were familiar with the project and also by others who had no knowledge of it.

To assist in management decisions, a scorecard was developed where risks are weighted against different criteria. This has resulted in a “traffic light” system where Green = Not At Risk, Amber = At Risk, and Red = At Serious Risk. The scorecard includes two general categories—direct impact and other risks—along with an overall assessment. Guidance is provided on how decisionmakers can respond to risks (https://rockartcare.ncl.ac.uk/#!/guidance).

Regarding the monitoring forms, it is intended that: (i) once they are submitted to the portal, PDF copies are distributed via email to the heritage authority responsible for the safeguarding of the rock art in the area in which they occur; (ii) portal administrators can see all the submitted reports, while members of the public can only view their own records; (iii) the option exists for people to complete the form online at the portal (https://rockartcare.ncl.ac.uk/#!/reports/create); (iv) the records will be automatically linked to a geographic location on a map; and (v) explanation of the monitoring scorecard is provided on the portal along with management guidance, although it is emphasized that land managers should seek assistance from heritage officials.

Several challenges have emerged since launching the app. Given that anyone can sign up for it, we have had a few pranksters submitting spurious reports. Fortunately, these can be deleted easily. Another challenge is to futureproof the app and portal as technology develops. This has not yet been resolved. Perhaps the biggest challenge, however, is to get members of the public to download and use the app. To encourage this, we have, for example, issued a press release (http://www.ncl.ac.uk/press/articles/archive/2017/11/rock-artapp/), which was picked up by the BBC (http://www.bbc.co.uk/news/uk-england-tyne-42123939) and other news outlets. We have written short accessible articles (e.g., https://theconversation.com/what-neolithic-rock-art-can-tell-us-about-the-way-our-ancestors-lived-6-000-years-ago-84865), and have given several talks. More needs to be done, though, as the uptake is not as large as we desired. Hopefully, the flyers that we have distributed will help (fig. 4.18).

A valuable lesson we have learned is that we are, as researchers, adept at collecting scientific data and developing user-friendly forms, but we still must find a way to encourage the public to download and use the app. This step requires further consideration as the aim is to engage the public and encourage them to participate in some citizen science, especially given the dwindling capacity of heritage agencies.

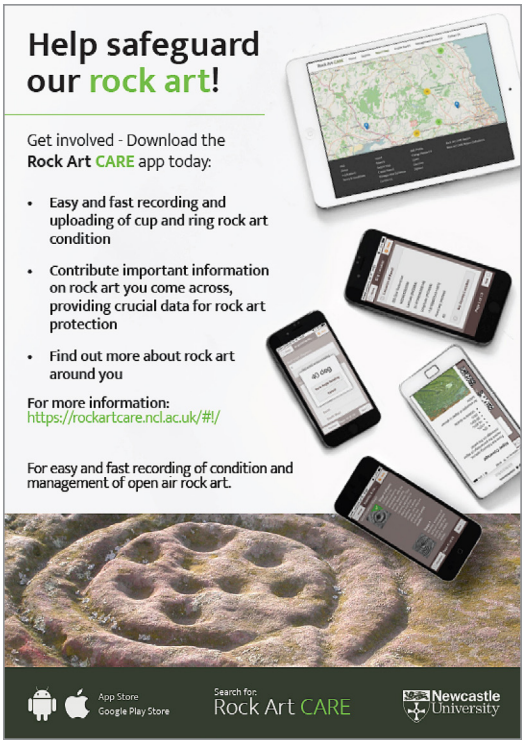


FIGURE 4.18.
An example of a flyer distributed to promote the CARE project.

Acknowledgement

Thanks are due to the Arts and Humanities Research Council for funding the CARE project.

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4.5 Rock Art and Public Engagement: A Case Study from Bryn Celli Ddu Passage Tomb, Anglesey, United Kingdom

Ffion Reynolds

For centuries, Anglesey's remarkably fertile fields have led to the island being feted as "the breadbasket of Wales." This name dates back to the Middle Ages, but the favorable conditions that inspired it, as well as the low-lying island's easily reached location at the heart of the Irish Sea trade routes, has made it a popular place to settle for thousands of years.

Anglesey is unique in Britain for the concentration of a particular type of monumental tomb, known as passage tombs. These megalithic constructions are comprised of long stone corridors that lead to an inner burial chamber that is covered with a mound of earth and stone. Other examples, varying greatly in form, are scattered across Britain—particularly in the Orkney Isles.

Some passage tombs, like the evocatively named Barclodiad y Gawres, or Giantess' Apronful, are decorated with spectacular carvings, while our site, Bryn Celli Ddu, (the Mound in the Dark Grove) is apparently unique among the Anglesey tombs as it was designed to have a solar alignment at certain points of the year. Built between 3074 and 2956 cal BC, it dates to the late Neolithic period, around 5,000 years ago.

Since 2015, the Bryn Celli Ddu public archaeology landscape project has aimed to better understand this location, working with members of the public and with Cadw (the historic environment service for the Welsh Government) to survey and excavate sites in the vicinity. These groups have worked to produce a series of open days and public engagement events focusing on the summer solstice. In 2018, as archaeology and anthropology undergraduates, we developed and undertook a research project to explore the motivations for visiting the site, the value in which people held the site, and the sense of the relationships people had with the site.

Bryn Celli Ddu is a Cadw guardianship monument and is currently presented to the public with two interpretation panels, as well as a series of panels at the public carpark that help place the monument into its regional context. Visitor access to the monument is provided from the carpark along a reasonably flat public footpath.

Public Archaeology at Bryn Celli Ddu

Public archaeology is core to the Bryn Celli Ddu public archaeology landscape research project. The project ethos, based on long-term relationships that have been developed with local people on Anglesey and Gwynedd, seeks to be responsive and creative. Since 2014, a series of events have taken place as part of the public archaeology and engagement work.

At an annual project archaeology Open Day at Bryn Celli Ddu, on the closest Saturday to the Summer Solstice (June 21), the project team and volunteers had the opportunity to engage with new audiences through events at the site. The first Open Day, in June 2015, brought together a series of Neolithic and prehistoric workshops and drop-in activities to the site and around 300 people attended this event (fig. 4.19). Having an event on site was crucial as it allowed the team and volunteers to explain the complexity and nature of the monument and excavations, aided by a series of site tours and various demonstrations focusing on daily life in the Neolithic.

In subsequent years, the Open Day expanded and brought together a larger number of organizations with an emphasis on varied hands-on learning, such as displays and

FIGURE 4.19.
Bryn Celli Ddu Open Day. Image: © Crown copyright (Cadw), 2020.

workshops that were delivered by twelve groups and organizations. In 2016, 716 visitors attended; in 2017, 700 people attended; in 2018, 650 people attended; and in 2019, 2,000 visitors came to Bryn Celli Ddu making this a standout event at a rural, unstaffed Cadw monument.

As part of the events program, an annual Summer Solstice sunrise event takes place on the morning of June 21 (at around 4:30 a.m) in partnership with the Anglesey Druid Order, with around 150-200 people attending each year. Other events include stargazing, an exhibition and public lecture, and site tours. A treasure trail was designed in 2018 around Anglesey's prehistoric sites to encourage a greater understanding of the landscape. Upon completion of the clues in the treasure trail, participants received a pin-badge by presenting their completed work at Oriel Ynys Môn. This also had the effect of driving footfall to the museum—with all 500 pin-badges claimed within a month.

The project also worked to engage with wider local communities: schools, volunteers, and the Young Archaeologists Club / Unloved Heritage group from Gwynedd Archaeological Trust. As part of the schools' outreach program, seven local schools visited Bryn Celli Ddu to take part in art activities and learn more about the Neolithic. The school outreach program was tailored to fit the particular learning needs and interests of the school group. Six out of seven were Welsh language schools and the visit was conducted in Welsh. A prehistoric handling collection and a number of art activities were developed through discussion with teachers (designed for Key Stage II).

Students from the University of Central Lancashire took part in the project for the first time in 2018 and continued to form part of the excavation team in 2019. This was done to increase the number of digging crew as the project has expanded in terms of trench size over the years. On a special visit to Bryn Celli Ddu, The Young Archaeologists Club had flintknapping, pottery, food, and tool-making talks and workshops and, under the supervision of parents and GAT staff, were able to trowel in the Bronze Age burial mound trench.

Additionally, a team of ten local volunteers work under the supervision of parents and GAT staff on the project yearly, all of whom are residents of north-west Wales.

To coincide with the Bryn Celli Ddu landscape project, the 2019 project continued to work on-site with prize-winning Welsh artist and printmaker, John Abell, during the excavation. In one project, he created a triptych of Bryn Celli Ddu using the first records of antiquarians such as Henry Rowlands' first dry-point print of Bryn Celli Ddu in his famous 1723 book, Mona Antiqua Restaurata. Abell's distinctive motifs, intertwining fact with folk memory, have a persuasive sense of storytelling that bring the past and present alive using a beguiling visual language.

Another strand to the project is to collect digital data and create a digital archive for the Bryn Celli Ddu project. In 2020, a Virtual Tour of Bryn Celli Ddu was created to make the site accessible to audiences during the Covid-19 pandemic, when all sites were closed to the public (fig. 4.20). The Virtual Tour can be accessed from the Cadw website: https://cadw.gov.wales/

FIGURE 4.20.
The Bryn Celli Ddu Virtual Tour, 2020. Image: © Crown copyright (Cadw), 2020.

Boxout: Community Spirit

The Bryn Celli Ddu project investigation came about as part of a Cadw initiative aiming to improve visitors' understanding and enjoyment of some of Anglesey's most important heritage sites, including the semi-subterranean chamber at Lligwy, Barclodiad-y-Gawres (which saw careful conservation of its decorated stones as well as the introduction of subtle new lighting to its interior), and Bryn Celli Ddu. Efforts at the latter focused on better visitor orientation, but we were particularly keen that local people should be involved in sharing the site's story too, an aim that formed the basis of the project investigations and excavations. Our project team was made up of forty local volunteers as well as students from Manchester Metropolitan University. Work focused on practical archaeological skills including geophysical survey techniques and outdoor photogrammetry, while local schools were invited to take part in a range of hands-on Neolithic-themed activities.

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4.6 Public Engagement with Rock Art through Digital Accessibility

Tom McClintock

For globally under-resourced fields of cultural heritage such as rock art, building a constituency to support its management and preservation is necessary. In most instances where the forces of preservation have persevered, it is thanks to an engaged and determined coalition of advocates. Indeed, in the face of the pernicious forces of development and industry, the public acts as a bulwark against governmental complacency. So, how are we engaging the next generation of rock art advocates? As a form of heritage that is often remote and relatively challenging to experience in situ, improving rock art's digital accessibility is an important method for generating public interest. Digital representations will never replace the experience of visiting in person, but tools that capture the excitement and wonder of rock art sites warrant wider adoption.

The rise of social media and the ability to share and view images instantaneously on mobile devices have had a great impact on the world's awareness of rock art and its precarity. One impediment to the ability of rock art images to engage an audience—that paintings are often faded and difficult to interpret—has been overcome by visual enhancement tools like DStretch, which is now available as an app for mobile devices (Harman 2016). Used by professionals and the public alike, DStretch has enabled substantive research and introduced a sense of discovery for its users. However, some of the most compelling characteristics of rock art that do not often translate well to 2D representations is a sense of scale, context, and landscape. Talented photographers are sometimes able to capture these qualities, but not all sites are conducive to such framing.

This issue is largely overcome by photogrammetry, a process of producing photorealistic digital 3D models solely from photographs. Where digital modeling once required laser scanning, a technically complicated and often cost-prohibitive technique, photogrammetry has democratized the ability to produce accurate 3D models. Photogrammetry used in this context should not be confused with an older technique of stereo photography that was used to take measurements. While the accuracy and precision of photogrammetric models depends on maintaining rigorous standards of photographic capture, its application for qualitative assessment or demonstration purposes is straightforward. There are numerous photogrammetric software programs that are user-friendly, produce good results, and are not particularly expensive.

The result is a new form of "edutainment." The principal platform for sharing is Sketchfab.com, where users upload 3D models for others to access. Museums, heritage agencies, archaeologists, and enthusiasts are uploading collections of models, making all sorts of cultural heritage digitally accessible from one's home computer. This could have significant implications for the public's awareness of, and engagement with, rock art.

A noteworthy Sketchfab account that demonstrates how photogrammetry can be used effectively is Ancient Art Archive (AAA), a nonprofit founded by National Geographic photographer Stephen Alvarez. See, for example, their model of Shaman Knob in the Mount Irish Archaeological District, Nevada (Ancient Art Archive 2019). What distinguishes AAA's models is their inclusion of the rock art site's context—rarely is a single panel presented in isolation. The model of Shaman Knob features a diameter of approximately fifty meters, including the complete boulder outcrop on which the principal petroglyph panel appears, several minor panels in the vicinity, a modified water catchment basin, and informative

annotations that guide the viewer through the model. With all these features, this site demonstrates how photogrammetric models can be used to engage, educate, and entertain (fig. 4.21).

Digital accessibility doesn't apply only to those browsing the internet at home. At the Chumash site of Pleito Cave in the Wind Wolves Preserve of central California, issues of accessibility and the site's fragility prevented descendent tribal members from visiting their ancestors' painted shelter. Through production of a photogrammetric model and accompanying enhancements of DStretch and Reflectance Transformation Imaging (RTI), the site was presented via virtual reality headset both in the community center, where tribal youth were exciting by its similarity to a video gaming environment, and to elders with mobility issues who were unable to access the site (Robinson and Cassidy 2017).

Philo of Byzantium wrote in his fifth-century guide to the seven wonders of the ancient world, "Only if you travel the world and get worn out by the effort of the journey will the desire to see all the wonders of the world be satisfied, and by the time you have done that you will be old and practically dead." Digital tools promoting public engagement with rock art are making sites accessible in ways unimaginable even twenty years ago, let alone in the era of Philo, when a lifetime of travel was necessary to experience the world's heritage. RAN encourages professionals to adopt these tools and explore new ways of presenting them to bolster the public's appreciation and interest in preservation of this rock art heritage.

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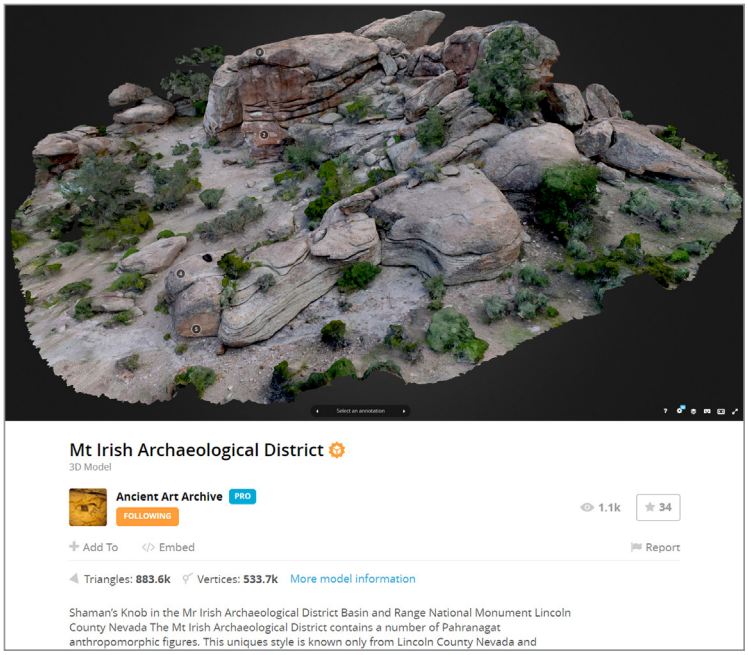


FIGURE 4.21.
This 3D model of Shaman's Knob, Nevada, is exemplary both for its inclusion of the rock art's context and for the addition of annotations that offer more information for the viewer. Sketchfab is an online platform to share 3D models and features many examples of rock art sites and panels from around the world. 3D model produced by Ancient Art Archive and shared with permission.

4.7 *L'Atlas de la grotte Chauvet-Pont d'Arc:* Seeing and Discovering the Cave Through Maps

Jean-Michel Geneste

The *Atlas* is the first of four volumes of the *Monographie de la grotte Chauvet-Pont d'Arc* and aims to present the spirit of the research carried out in the Chauvet Cave. The next two volumes will deal with the study of the cave's wall art, and the fourth volume will be devoted to work on the numerous palaeontological remains (cave bears in particular) and the human-animal relationship. In this first volume, the authors chose to represent the cave through twenty 1/100 maps with texts that reflect a resolutely integrated approach to the twenty years of research by the different disciplinary fields involved in the study of the cave since 1997 with the support of the French Ministry of Culture. This unique editorial choice explains the exceptional size of the book—340 x 480 mm and 384 pages.

This first volume (fig. 4.22) has been conceived and constructed around three main ideas: to carefully re-situate art and the numerous archaeological remains in their physical, temporal and cultural contexts, to consider the subterranean landscapes as a construction that combines natural facts and anthropic actions, and to present the diversity and richness of the data inscribed on the walls and floors of the cave through a federating act: cartography. Representing a decorated cave through maps was one of the challenges of this work. It is both epistemological and methodological given the diversity of the information contained in the subterranean morphologies found in the traces and remains of fauna, as well as in the signs of human presence on the floors and walls. However, one of the ambitions of the *Atlas* was not to dissociate the anthropic traces—through which we perceive human intentions—from the physical, morphological, and landscape characteristics of the cave. Within this "whole" that is the cave as we perceive it today, each element occupies a specific place and has its own dynamics that are in resonance with the other dimensions of the cave. The *Atlas* also aims to provide an account of each of the elements that challenge researchers and visitors within this "whole."

Maps are, therefore, supports for the formalization of information as well as vectors for mediating interactions between the various dimensions of the cave. Two types of maps, geographical and thematic, have been used in this book. These two modes of representa

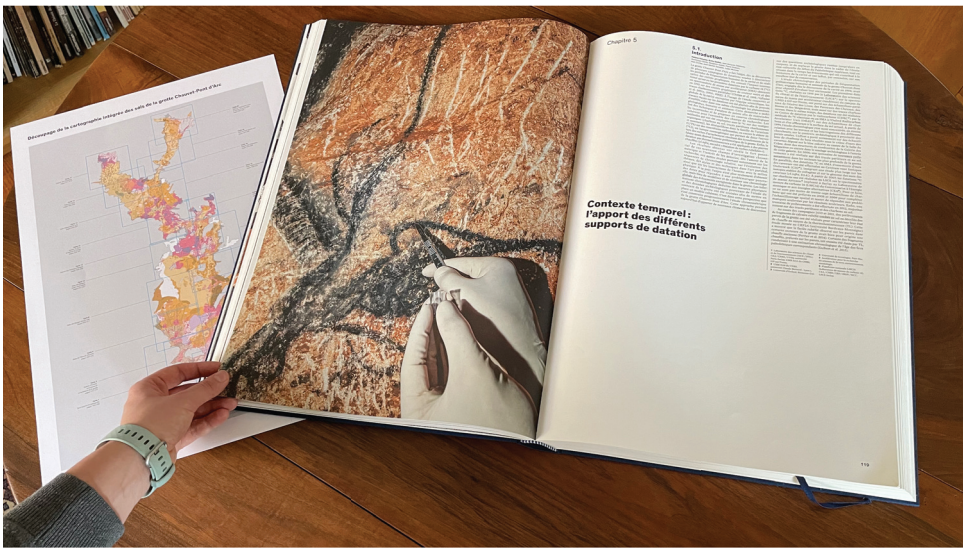


FIGURE 4.22.
The *Atlas* is exceptional by its dimensions (340 x 480 mm) that allow the presentation of detailed maps of the cave in 1/100 scale, full-page photographs of the different archives of the cave, and unreleased synoptic illustrations (frieze of the evolution of the cave). Image: J. J. Delannoy.

tion are both complementary and meet the requirements of any cartographic approach: making it visible and making it legible.

The maps present, zone by zone, the plurality of data identified on the floor, walls, and ceilings of the cavity (fig. 4.23). Their exploratory dimensions make it possible to read the cave in detail, locate the data, and provide information on their spatial distribution. Phenomena that have directly impacted the cave over the last six million years are reported—fields of concern as diverse as geological events, biological activities, residues of physio-chemical phenomena, and indications of human activity.

It was also important to understand the history and evolution of the cave before, during, and after the periods of human and animal visitation. For this purpose, an innovative cartographic representation was developed. Based on the principles of geomorphological cartography, the soil map of the Chauvet Cave was drawn at high spatial resolution in order to transcribe the extreme diversity and the strong interweaving of natural phenomena and anthropic clues contained in the cave's landscapes in the best way possible.

This choice was, above all, intended for the readers so that over the course of viewing the twenty geographical maps they could experience a sensation close to what the researchers experienced in their field of study: that of the richness and interweaving of the anthropic witnesses and the traces left in the natural architecture of the cave.

Thematic maps, on the other hand, offer a distanced and analytical view that puts the information into context. They allow us to question spatial heterogeneities and search for their causes in the field through a new quest for information; One that, in turn, enriches the content of geographic maps. Thematic maps are the presentation media for the contexts

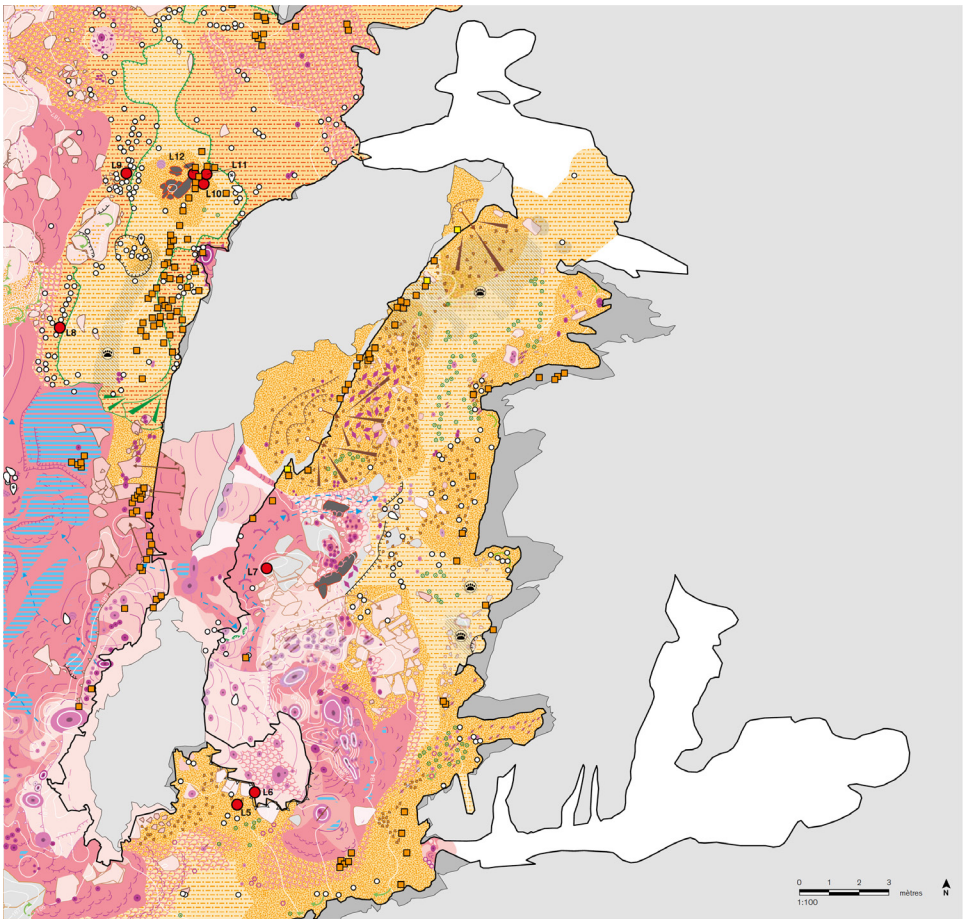


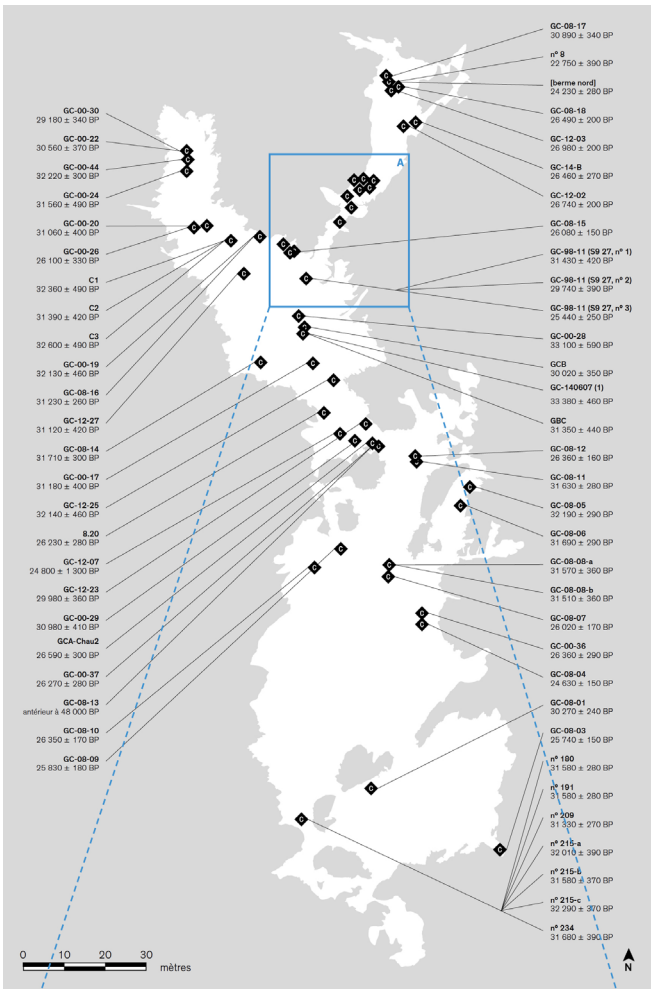
FIGURE 4.23.
Example of the floor map for the Cactus Gallery. The *Atlas* includes twenty detailed floor and wall maps that allow readers to visit the cave from the entrance area to the galleries at the end of the cave. The different mapped areas highlight the diversity of phenomena and remains present in the cave. A chapter of the *Atlas* is dedicated to the presentation of the map legend to help orient the reader.

of art and archaeology developed in this book (fig. 4.24). Five contexts are more specifically developed: the place of maps in the various research projects in the cave, the physical context with the understanding of the morphologies and the different conditions of the wall, the temporal context with the set of results from the different dating tools utilized in the research, the contemporary environment of the periods of occupation, and, finally, the tools and methods of conservation of the cave.

This first book of the *Monographie* also aims to present the spirit of the research carried out in the Chauvet Cave. The book follows a resolutely integrated approach to the work by the different disciplinary fields involved in the study of the cave that has been developed throughout the twenty years of research by the scientific team. The results obtained owe an essential part of their richness to the diversity of scientific points of view and to the multiplicity of their crossings. May this philosophy of open and integrative research, developed in the study of the Chauvet-Pont d'Arc Cave, infuse the work on other ornate sites. This edition will be followed by a document in high-definition, electronic format that will be easier to handle and that will allow users to explore the maps in more detail.

L'Atlas de la grotte Chauvet-Pont d'Arc, directed by Jean-Jacques Delannoy and Jean-Michel Geneste, mobilizes more than forty authors who were directly involved in the study and conservation of the cave. It is published by the Éditions Maison des sciences de l'homme (M.S.H.) in the "*Documents d'archéologie française*" collection. It can be ordered in bookstores or on the website: https://www.lcdpu.fr/livre/?GCOI=27000100129280

FIGURE 4.24.
Example of a thematic map.



Co-director biographies:

Jean-Jacques Delannoy teaches geomorphology at the University of Savoie Mont-Blanc. As a member of the scientific team of the Chauvet-Pont d'Arc cave, he uses a geomorphological approach focused on archaeological and conservation issues, based on high spatial resolution cartography. This approach is now being applied to other decorated sites (in Australia, Canada, and Spain) where he works. He has also worked on the contents of the Espace de restitution de la grotte Chauvet (Grotte Chauvet 2 Ardèche) and accompanied its realization.

Jean-Michel Geneste, archaeologist, was curator of the Lascaux Cave, director of the National Center for Prehistory (Ministry of Culture), and scientific advisor to several archaeological museums and facsimiles of European caves and decorated shelters, including the Espace de restitution de la grotte Chauvet (Chauvet Cave 2 Ardèche). As an archaeologist of Palaeolithic times, he has excavated numerous sites in different cultural areas, including Central Europe, Siberia, Australia, and North America, studying their cultures from both material and symbolic points of view. Succeeding Jean Clottes, he coordinated research in the Chauvet-Pont d'Arc Cave from 2001 to 2018.

CHAPTER 5

Pandemics, Climate Change, and Tourism

Neville Agnew

There is no longer any denying climate change or the speed with which it is happening. “It is worse, much worse, than you think. The slowness of climate change is a fairy tale, perhaps as pernicious as the one that says it isn’t happening at all…,” wrote David Wallace-Wells in his book *The Uninhabitable Earth* (2019). He points out that more than half of the carbon exhaled into the atmosphere by the burning of fossil fuels has been emitted in the past three decades. Appropriately, given the dire situation of the planet, he writes with a sense of grave urgency: “The story of the industrial world’s kamikaze mission is the story of a single lifetime—the planet brought from seeming stability to the brink of catastrophe in the years between a baptism or bar mitzvah and a funeral.”

Inevitably, a significant number of sites will be lost due to increased global temperatures as carbon dioxide and methane continue their accelerating rise year by year, causing higher temperatures and more and hotter fires, and rock art being destroyed by surface exfoliation and blackening by soot (fig. 5.1). Wooden or composite polymer viewing walkways along the front of rock art shelters only add fuel to the fire and should be not be installed—incombustible steel or masonry, though more expensive, are preferable. Brush and grass in proximity to a rock art shelter should similarly be removed periodically. These simple measures significantly reduce fire damage.

FIGURE 5.1.
A panel of rock paintings at Baloon Cave in Carnarvon Gorge (Right) was completely destroyed after bush fires ignited the site’s viewing platform made of recycled plastic (Left). Despite beliefs, the walkway was highly combustible when a threshold temperature was met. Rock art sites are increasingly at risk as the effects of climate change become more pronounced, bush fires being just one example. Proactivity is essential in developing resilience to these impacts. Image: Paul Tacon.

FIGURE 5.2.
Rock Art surveying along the Ou River in northern Laos. Dam construction along the river has displaced multiple communities and may pose a future danger to the rock art on the cliff face. Image: Noel Hidalgo Tan.

Rise of sea level is the other consequence of climate change. Many coastal sites are within tidal range. Clearly this threat to rock art is not something that can be ameliorated by simple physical interventionist measures. Where rock art occurs within the tidal range of predicted sea level change, documentation should be a priority (fig. 5.2).

For the present, the Covid-19 pandemic has destroyed mass tourism, one of the largest global industries. Tourism will recover and eventually reestablish itself as the situation improves, creating an addictive financial dependency at heritage and natural sites. For now, the tourism income from heritage sites, while often not reinvested in site conservation and management even in the best of times, will shrink further with consequent neglect of sites and lack of maintenance. Ideally, the present situation should be seen as an opportunity to take stock and develop policy guidelines and visitor capacity plans with firm and enforceable limits. These can include policies and budgets for maintenance, site presentation, as well as interpretation materials and staff training designed to enhance visitors' experiences.

The dependency on tourism and the income it generates has been a short-sighted policy in many countries and, like other exploitive industries, it seemed to know no limits. In the future, one may hope for an enforced rational policy at sites that is based on a scientific analysis of visitor carrying capacity such that no damage results from overcrowding and resource availability with respect to water, waste disposal, transportation, and accommodation. In reality, the pressure from business interests and government for ever more tourists and the money and jobs they bring is a powerful incentive to continue expanding—until the next crisis, be it war, pandemic, or natural disaster.

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5.1 Rapa Nui: Tradition and Survival During a Global Pandemic

Jo Anne Van Tilburg

Rapa Nui (Chile) is a small (164 square kilometers), remote island lying in the vast Pacific Ocean mid-way between Tahiti, Society Islands (French Polynesia), and the coast of mainland South America (approximately 3,500 kilometers to the east).

Despite such challenging geography, the island was discovered and settled by voyaging Polynesians ca. AD 900–1000. Anthropologist Grant McCall (1981) recognized Rapa Nui as a human place of tradition and survival and insisted that its story is a study in "the ways in which one human population has dealt with change." Change came to Rapa Nui both before and after 1722, when it was visited for the first time by Western ships, and hundreds of fallen monolithic stone statues (mōai) once upright on megalithic ceremonial sites (ahu) testify to that truth. Rapa Nui again faced change in 2020—this time in the form of a global pandemic.

Tradition

The settlement of the Eastern Pacific is regarded as late but rapid, and megalithic construction on Rapa Nui was established and expanded within a traditional Polynesian chiefdom and a sociopolitical organization based upon successful agriculture. Ethnography and archaeology have established that intensified dry field cultivation (without formalized irrigation) was tempered by the adaptation of a strategy in which rock mulch gardens preserved rainfall moisture and released phosphorous into deforested, nutrient-poor soils. Food production and consumption were once indispensable indicators of rank and status. Communal memory was retained and supported by kinship bonds but also through rock art and sculpture created within a hierarchical, genealogical framework that is still recognized and respected by the contemporary Rapanui community.

Social activities on Rapa Nui in the past centered on extended families and, seasonally, on large gatherings of the entire population to adorn their bodies, sing, dance, and eat staple foods cooked in traditional earth ovens (umu). These social interactions are both spiritual and economic and were ubiquitous throughout pre-Western-contact Polynesia. Even today, social success and personal well-being are measured by one's ability to produce, prepare, and share food. Survival on isolated Rapa Nui during the pandemic created food anxiety and impacted hoarding and sharing behaviors, with the numbers of persons involved in celebrations reduced sharply and, in general, limited to small gatherings of close friends or immediate families.

Survival

On March 17, 2020 Rapanui leadership shielded the resident population of approximately 8,000 persons from the risk of Covid-19 infection through three important actions. First, a travel ban was issued. This was a profoundly pragmatic decision, but empathy was its key component. Flights were arranged to evacuate tourists and deliver them immediately to the Chilean mainland. Rapanui people are scattered far and wide in the world but many live, work, or study in Santiago or Viña del Mar, Chile. Close kinship ties link all Rapanui, wherever they are, to their families and the island landscape. Therefore, leadership's second act was to organize repatriation flights to bring home all Rapanui students and others who wished to return.

Once safely home, medical exams and tests were conducted for returnees and residents at the local hospital. Rapanui leaders were quick to establish strict but sensible measures and public officials, local council members, and resident medical staff set individual examples of compliance and cooperation. Sequestration and the familiar requirements of cleanliness and mask wearing were enacted, but no draconian measures were required for voluntary compliance. By the end of April, sequestration was deemed unnecessary and lifted.

Supplies are carried to Rapa Nui by ships from the mainland and fears that this lifeline would be severed had originally arisen within the modern community after the September 11 tragedy in the United States. Food anxiety meant that personal endeavors and goals were subsumed to the needs of the larger family. More and better agricultural practices, as revealed by archaeological research, came to the fore. The pandemic encouraged some people to return to farming and fishing as a lifelong practice now recognized as crucial to survival. The economic impact of tourism, the island's most lucrative industry, on the community is being discussed in terms of what is economically best for all, not just for a few families invested in that industry. The island landscape is now empty of tour buses and beckons with newly appreciated beauty and tranquillity.

As the pace of daily life slowed and sequestration ended, many Rapanui looked at the landscape with fresh eyes. They recognized the damage done over decades by weather and human use to rock art, architecture, and habitation sites. When archaeological and conservation records are compared using modern digital methods, and then discussed with elders whose memories of the sites are long and intimate, the extent of the damage comes into sharp focus. Rapa Nui is a World Heritage treasure, but today climate change threatens Orongo, the island's renowned rock art concentration, with complete destruction (figs. 5.3 and 5.4).

FIGURES 5.3 AND 5.4.
Overview of houses of Orongo and a detail of the entrance to one of the houses located on the very edge of the volcano. Image: Easter Island Statue Project (EISP).

Conclusion

The Rapanui community knows what it means to be alone, isolated, and exploited, but their traditions and experiences remind them that they are survivors. Grant McCall concluded that "a major element of Rapanui belief is a sense of the value of their Island, a value that they find confirmed by the continuous flow of visitors from all over the world … a cornerstone of Rapanui belief … is that only on Easter Island can the Rapanui be truly safe. It is the foundation of their belief in the importance of their Island and of themselves" (McCall 1980, 115).

It was the goal of Rapanui leadership to bring home all who wanted to return. Assurance in personal safety is drawn from the land, its spiritual connections, and an ancestry encoded in ancient rock art and architecture. This is different from the philosophies of ferociously independent peoples dwelling in the industrial West, although inclusiveness and intimate ties are increasingly more valued. Communication remotely, distantly, and through the blue light of a computer screen is not an ideal method of productive or transformative social interaction. Rapa Nui, in its way, displays an instructive force of communal character as we emerge, slowly and cautiously, from the global pandemic.

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5.2 Rock Art in South American Landscapes under Anthropocene Threats

María Isabel Hernández Llosas

The Human Landscapes

Landscapes, by definition (Crumley 2003; Marquardt and Crumley 1987), are the result of long-term human/environment interactions within particular places. Through time, those places have experienced changes and/or continuities, resulting in their present forms. Present landscapes show traces of all the physical and cognitive features which shaped and define them as unique and distinct places in the world.

Across the world, landscapes have been inscribed with rock art, which is, as its name points out, art created using bedrock, detached rocks spread out on a field, outcrops (walls, shelters, caves), and the surface of the Earth itself as natural canvas. South America is no exception, with thousands of rock art sites spread across the continent (fig. 5.5).

Through time, subsequent generations of people have inscribed the land with rock art for purposes as diverse as initiation practices, territorial demarcations, trail markers, and signs to secure power by hegemonic groups, among many others, and the places chosen were intentionally selected to stamp images on them for those specific reasons. In so doing, humans were creating landscapes through rock art because these images, implanted on natural surfaces, transform the land physically and cognitively. The presence of art on the bare natural surfaces is an indication of social significance and special engagements with places. These engagements, consequently, enhance people's relationships with particular pieces of land, producing and promoting a sense of place and belonging (Bradley 2001), something that can endure many generations and may persist until the present day.

These material and immaterial traces of the interrelationships between places, events, and people are still in landscapes and can be revealed by different means. Local/indigenous knowledge systems (UNESCO 2002) are one of the most relevant ones because they link past and present through continuing cultural practices. These practices are sometimes

FIGURE 5.5.
Rock art motifs from Cuchimachay Cave, Peru.
Image: © Rainer Hostnig.

still alive in the minds of local people who cherish and pass on the knowledge encrypted in that landscape to younger generations to keep the memory of the place ongoing (e.g., Uluru–Kata Tjuta Board of Management 2021). i

The Anthropocene and the impacts of Colonial Expansions on Landscapes

In regions of the world that have been colonized through history, this is a particularly sensitive topic because the colonial powers have tried to erase those long-term memories in favor of narratives that give them ideological advantages to subdue the colonized territories, not only physically but also symbolically. It is known that the major impulse of colonial expansion was carried out by Western empires in three waves (Wallerstein 1974, 2011). The first wave occurred between the fifteenth and the nineteenth centuries when different European expansive kingdoms annexed the so-called overseas territories, located far away from the central power, imposing on them political, economic, and cultural rules under strict control. The second wave took place between the nineteenth and twentieth centuries under a different format: changing the methods from direct political domination to economic and underlying interference at economic, political, social, and cultural aspects of the former colonies. The third wave began in the mid-twentieth century and is ongoing, escalating that kind of neocolonialist domination which favors the central powers and their interests. During these three waves a world economic system was developed, reconfiguring the social geography on a planetary scale and generating what has been described as core, periphery, semi-periphery, and external areas with different access to natural resources and cultural independency, producing and maintaining inequalities within and between nations and societies globally (ibid).

Even if the human/environment interaction has always been a force shaping landscapes, until 500 years ago the scale of that interaction was smaller and regional. With the Western expansion and the imposition of the world economic system on the entire Earth system, a major and harmful human impact on the environment is occurring. The result is a massive socio-ecological crisis visible in climate change (global warming) and unwise land use (extractive and exhausting resources) that is endangering the planetary biota (accelerated loss of biodiversity, producing the sixth major extinction in Earth's history) (fig. 5.6). Humankind, under this scenario, became a globally distributed super predator (IHOPE

FIGURE 5.6.
The view from a shelter Quelloacirca, Peru, where landscape damage from mining is visible.
Image: © Rainer Hostnig.

2021). In terms of the socio-cultural impacts, the consequences can be seen in a rapid loss of cultural diversity (homogenization in favor of the hegemonic world views) by lessening local social memory and regional identities, confronting traditional ways of connections with the land, and challenging long-established perceptions of landscape by endangering senses of place. This dangerous, ongoing socio-environmental situation at a planetary scale was defined as Anthropocene (University of Leicester 2016).

The place of South American landscapes in the global scenario

South America, with a long history of colonial domination since the first wave, has been under the pressures caused by the World Economic System and, therefore, exposed to all the threats the Anthropocene implies. The negative impacts on the natural environments together with intense harassment to long-term developed cultures has been intensively disrupting the local landscapes in every aspect. From the highlands of the Andes, threatened by mega mining enterprises, to the lowland jungles endangered by rapid deforestation due to uncontrolled large agro-business and cattle industry, there has been a massive change in land use that is pushing local/indigenous communities out of their traditional territories, sometimes even with mass killings against them.

Rock art, one of the most precious traces of long-term human/environment interactions and an "archaeological signature" that refers to material and symbolic expressions of the past and present people, is another victim of the World Economic System and the consequences of the Anthropocene. All along the continent there are treasures in danger like the geoglyphs in desert coastal of Peru and Chile (Nazca, Atacama), caves and shelters all along the Cordillera de los Andes (Toquepala and Lauricocha in Peru, Cuevas del valle de Cochabamba in Bolivia, Cueva de las Manos in Argentina,), caves and open air sites in the lowlands (Serrania de La Lindosa in Colombia, Sierra de Capivara in Brazil), just to mention a few of them.

Even though some of them are under some sort of protection (having been incorporated into national or local parks or placed on the UNESCO World Heritage List) all of them are under pressure and in danger. The lack of consciousness and actual preservation measures from politicians and local administrative authorities, together with the poor information the general public has on this topic and the expanding pressures of economic interest on the lands where the sites are placed, present a discouraging scenario.

Considering such cultural treasures, it is necessary to increase awareness of their importance through a massive dissemination of their relevance. This can be done through different media targeted to an international general public, increasing education in schools about this topic, providing technical and scientific advice to administrative authorities who manage the sites, and promoting the implementation of realistic strategies with master management plans. Hopefully, this will help protect and save some of this unique legacy.

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5.3 The Future of Rock Art Tourism

Janette Deacon

The future of rock art tourism lies in carefully-planned research to identify what tourists expect and want to experience, how much the local community is willing to invest in providing this experience, and the impacts that visitors and natural causes of decay have on the rock art resource. The twin threats brought about by the Covid-19 pandemic and the potential impacts of climate change have no precedent for rock art tourism, but in the wider frame of human history there is some reason for cautious optimism that it will adapt and even flourish in the future (fig. 5.7).

Research to identify and manage these two risks falls within all four pillars of best practice for rock art (Agnew et al. 2015), but for the purposes of a look into the future, two research topics raised before the Covid-19 pandemic could help to focus the recovery of rock art tourism in the coming years. The first is the contribution of social sciences that have explored the social dynamics and complex relationships between heritage conservation, tourism management, and local communities and the advantages of close cooperation between them (Danz and Gonzalez 2019). The second is the ICOMOS-IUCN Connecting Practice Project that seeks to bridge the divide between nature and culture and has the potential to widen the range of offerings for cultural tourism and rock art in particular

FIGURE 5.7.
RAN visited the site of Twyfelfontein, Namibia, during the 2017 colloquium. Twyfelfontein is the most visited rock art site in Namibia and is inscribed on the World Heritage List. Image: Terry Little.

(ICOMOS-IUCN Connecting Practice Project; Brown and Verschuuren 2019). In the time of Covid-19, rock art tourism has a major advantage over many other forms of cultural tourism in that in many cases the rock art is in the open and health risks are consequently lower.

The effect of the pandemic on tourism in general has been catastrophic. Some forty million people in the industry worldwide have lost jobs and incomes, and nobody can predict when the situation might improve. In some instances, at least, the hiatus in tourism caused by the pandemic presents an opportunity to focus on a local solution to analyze the data accumulated at rock art tourist sites thus far, identify the effects of over-tourism, weather, and climate on the rock art, and propose research-based adjustments where possible for identification of threats and actions to control them in the future. Wherever there are staff members, or volunteers, or neighboring communities who have the interest and expertise, two kinds of research could be applied during this time: "homework" that can use existing records for analyzing social patterns of visitor behavior and interests and "housework" that can apply the methodology of condition reporting at site level to examine the vulnerability of the rock art that the tourists come to see, as well as identify areas that will be at risk from both tourism and climate change in the longer term.

Homework can produce an accurate assessment of tourist interests and preferences based on data from the recent past by bringing people together at a local level to gather and share information and develop and strengthen social networks around a rock art tourist site. Digital data processing by staff, volunteers, and neighboring communities—even in high school mathematics classes—using numbers from annual reports and management plans can establish a baseline for tourist behavior. Did numbers fluctuate seasonally? What accommodation was favored? What rock art-related items sold best in shops? It is critical that the local dynamic is well understood if local solutions are to be found.

Housework at some rock art sites has already given managers the chance to catch up on monitoring and condition reporting. In the underground cave of Rouffignac in France, for example, paintings were found that had not been noticed before. In the USA, there have been reports of an increase in graffiti at open-air sites. Replicas like those of Altamira, Lascaux, and Chauvet have been closed and might require adaptation of the air conditioning to reduce the risk of Covid-19 infection. In remote rural areas where the site managers are dependent solely on income from visitors, all activity has stopped, including monitoring and maintenance. This is likely to have a negative effect on infrastructure that will need repair if it is not being used and cared for regularly.

Sophisticated condition reporting will be necessary to prepare for climate change with dedicated research to identify risk factors such as flooding, subsidence, fire, higher wind speeds, rising sea level, changes in relative humidity, drought, temperature extremes, and microbiological growth. By mapping them, local communities can monitor sites regularly and action can be taken when needed. As this work of identification and mapping will be time consuming when a lot of individual sites are involved, the research methodology could focus initially on rock art sites that are open to the public.

A potential research field that embraces both homework and housework is the CultureNature Journey (CNJ), an off-shoot of the Connecting Practice Project currently being explored by young professionals in the heritage field under the umbrella of ICOMOS, IUCN, ICCROM, and UNESCO. The goal is to develop and interconnect concepts of culture that are embedded in nature. A group of rock art sites suitable for tourists within a radius of say, 100 kilometers, could develop an economy of scale and enrich the visitor experience with a connecting story that has not been possible thus far when sites are presented and

marketed individually. Sharing methods and results is an important part of the Rock Art Network and initiatives such as these have the potential to cushion the effects of the pandemic and climate change.

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5.4 Can a Mining State be Pro-Heritage? Vital Steps to Avoid Another Juukan Gorge

Jo McDonald

The destruction of 46,000-year-old Juukan Gorge sites in the Pilbara in Western Australia has created great distress for their Traditional Owners, seismic shockwaves for heritage professionals, and has appalled the general public (fig. 5.8).

The fallout for Rio Tinto, the mining company that destroyed the sites, has been profound as has the groundswell of criticism of Western Australia's outdated heritage laws. A path forward must ensure a pivotal role for Indigenous communities and secure Keeping Places for heritage items. More broadly, we need more Indigenous places added to the Australian National Heritage List, ensuring them the highest form of heritage protection.

In a state heavily dependent on mining, the model for this could follow the successful seven-year heritage collaboration I have been part of on country with Murujuga Aboriginal Corporation (MAC) and Rio Tinto in the Dampier Archipelago (Murujuga). As Director of the Centre for Rock Art Research and Management at the University of Western Australia, I am funded to undertake research supported by Rio Tinto's conservation agreement with the Commonwealth. Rio Tinto funding enables research documenting the significant scientific and community values of the archipelago, feeding into the management of this estate by MAC, who represent the local coastal Pilbara groups. It also resources Indigenous rangers and trains undergraduate students at an annual field school.

The Murujuga conservation agreements, made between the Commonwealth and both Rio Tinto and Woodside, were negotiated when the archipelago's one million-plus engravings and stone features were added to Australia's National Heritage List in 2007.

Murujuga is one of only seven Indigenous rock art places on the National Heritage List. There are 118 listings in total in Australia (only twenty of them Indigenous). Murujuga is the only NHL-listed Indigenous site with a conservation agreement requiring industry to fund heritage protection.

Rio Tinto does not have a similar agreement with the Traditional Owners of Juukan Gorge, the Puutu Kunti Kurruma Pinikuru (PKKP) peoples—nor do any of the other Pilbara resource extraction companies with their host native title communities. These mining tenements are managed by a range of royalty agreements, which recognize native title rights but are flexible and obviously require greater transparency. Despite working closely with

FIGURE 5.8.
Juukan Gorge rock shelters, Western Australia, before they were destroyed by Rio Tinto in May 2020. A screenshot of a PKKP Aboriginal Corporation supplied video taken in 2015. Photo approved by PKKP Aboriginal Corporation.

Rio Tinto, I have been dismayed by the Juukan incident and the fault lines it has revealed in Rio Tinto's historically significant investment in heritage management and agreement-making with Aboriginal people.

PKKP has expressed their distress at the company's behavior. Clearly, there is much for Rio Tinto to improve in their communications and agreement-making. But similarly, the WA Heritage regulation process is seriously flawed.

Conserving Aboriginal Heritage

Many of the changes in the WA Government's new Aboriginal Cultural Heritage Bill 2020 are welcome: in particular, the recognition of native title (the recognition by Australian law of Aboriginal and Torres Strait Islander people's traditional rights and interests in land and waters held under traditional law and custom), allowing "stop work orders" to halt development if an Indigenous community identifies that it has begun without their permission. The Bill also provides for increased penalties for damaging heritage.

But Aboriginal groups, including many in the Kimberley and south-west WA, fear the onus for this regulatory process will be passed onto them and—despite being the appropriate people to manage their own heritage—they will not be adequately resourced to do so.

Heritage sites likely to be at risk in the future will number in the thousands, given the current footprint of Pilbara mining is a mere 1% of the planned expansion over the next century. A new paradigm is needed to manage heritage. There needs to be a process of identifying regionally-significant landscapes and earmarking them for conservation before future development footprints are determined, as well as more conservation agreements like the Murujuga one, with industry-funded heritage and conservation programs rather than just mining clearance work.

In the Pilbara, for instance, there are three national parks where mining cannot occur: Karijini, Millstream Chichester, and Murujuga. But more are needed in other native title areas. They should be resourced— with appropriate facilities for tourists—so that Aboriginal heritage rangers can manage them.

Mining compliance surveys, which manage harm to heritage, are a significant economy for many Aboriginal communities. But a number of Pilbara Aboriginal Corporations, including Wintawari Guruma Aboriginal Corporation (WGAC) with whom I have developed a rock art research project, do not want to just participate in the mining economy, which is tantamount to destroying their heritage (figs. 5.9 and 5.10). They want to train local rangers as well as to document, record, and manage their own heritage estates, enabling elders and young people to earn a living on country (fig. 5.11). This approach is equally required in places like the Kimberley, where fracking could be the next resources boom.

Aboriginal Communities Need Keeping Places.

Across the Pilbara, items such as the 7,000 heritage items salvaged from Juukan Gorge, are being housed in locked shipping containers. Secure, air-conditioned Keeping Places are an urgent requirement. These, too, could be funded by industry, becoming the focus of heritage tourism and ranger training and hosting collaborative research on heritage, biodiversity, and conservation. Murujuga, which has been added to the World Heritage Tentative List, already has a tourism management plan and is developing the Murujuga Living Knowledge Centre and additional interpretation facilities.

The state government and industry stakeholders are funding the Murujuga Rock Art Strategy, which will monitor and assess emissions from nearby industry. There are, however, concerning plans to introduce new industry in the adjacent Burrup and Maitland

FIGURE 5.9.
Participants in the Wintawari Guruma Rock Art Research Project (WGAC) record rock art near Tom Price in the Pilbara region. Image: Jo McDonald, CRAR+M Database, reproduced with permission of WGAC.

FIGURE 5.10.
Members of the Wintawari Guruma Rock Art Project recording contemporary values with Traditional Custodians, university researchers, and Rio Tinto heritage personnel. Image: Jo McDonald CRAR+M Database reproduced with permission of WGAC.

FIGURE 5.11.
A Murujuga Ranger recording rock art. Image: Jo McDonald, CRAR+M Database reproduced with permission of Murujuga Aboriginal Corporation.

Industrial Estate. These are being considered by the state before the findings on the cumulative impacts of emissions from the current development are understood. This is an issue, too, for the Australian government, which has ultimate oversight of heritage protection for sites on the national list. Industry expansion within areas of World Heritage significance is unsustainable—and it is here that Australia as a State Party to the UNESCO World Heritage Convention needs to draw a line in the sand.

In WA, the state government asserts that heritage can co-exist with industry. But this will only be possible if the state recognizes heritage is non-renewable—just like the mineral wealth of this country (fig. 5.12).

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FIGURE 5.12.
Ngajarli (Deep Gorge) bird track panel on Murujuga with evidence of industry visible in the background.
Image: Jo McDonald, CRAR+M Database reproduced with permission of Murujuga Aboriginal Corporation.

5.5 The Realities of Rock Art Promotion in the Pacific

Rachel Hoerman

Geography, demographics, and history frame and perpetuate the realities of Pacific rock art promotion. The Pacific is a vast oceanscape that covers one-third of our world. Its 30,000 islands are populated by (and often first discovered and settled by the direct ancestors of) roughly eight million people—one of the broadest cultural, linguistic, and political diversity of human cultures on the planet (WHO 2014; U.S. Census Bureau 2021; Pacific RISA 2021). Millennia of Indigenous cultural development fostered and propelled generations of settlement, masterful voyaging, exploration, and conquest. Interaction, innovation, and adaptation characterized most island populations from ancient through modern times (Liston et al. 2011). Successive eras of foreign, predominantly Western, incursion and economic, religious, and cultural colonization began in the sixteenth century and continues to the present. Indigenous traditions and socio-political systems, combined with the highly local aftermaths of World War I and World War II, resulted in the modern geopolitical contexts, economies, and communities rock art promotion occurs in.

Throughout the Pacific, focus, funding, and interest in protecting natural heritage heavily outweigh what is allocated to cultural heritage. Finite resources and stressors impacting Pacific Island nations take priority. These include emergencies like climate change and sea level rise, water and food security, and access to health care, education, and economic opportunities (Liston et al. 2011; The Pacific Community 2020; UNESCO Office for the Pacific States 2018). Out-migration is an additional major challenge. Foreign governments and aid agencies play outsized rolls in determining the priorities and agendas in many Pacific Island nations. Additionally, some agencies tasked with federal/territory/state historic preservation are fraught with systemic, long-term compliance/operational/management problems and do not function as legally mandated or intended (NPS 2013; Liston and Hoerman 2019). Under these auspices, rock art promotion is curtailed.

Rock art is present, and often plentiful, in many Pacific locales (Wilson and Ballard 2019). However, promoting rock art is often part of a colonizing framework instituted after

FIGURE 5.13.
Overview of Taberrakl rock art site, Ngeruktabel Island, Republic of Palau. Image: Jolie Liston.

FIGURE 5.14.
Red painted geometric motifs from Ulong, Ulong Island, Republic of Palau. Image: Ron Leidich.

World War II. This has evolved to include a heritage sector comprised of federal and state officials, trusts, non-profits, non-governmental organizations, university officials, and, largely, for-profit cultural resources management firms operating out of Guam, the Hawaiian Islands, or the continental United States. Additionally, the historical academic marginalization of rock art was transplanted to the Pacific with the post-World War II advent of widespread archaeological research and was encouraged by a lack of absolute dates that could be used to incorporate rock art into broader archaeological narratives (Martinsson-Wallin 2011: 101-102; Sand et al. 2005: 524; Wilson and Ballard 2019:21; figs. 5.13 and 5.14).

Rock art and rock art promotion are concepts originating within Western academic frameworks. They impose heritage perspectives and values that do not recognize or articulate with local Pacific cultures/communities/needs/priorities (Liston et al. 2011; Mills and Kawelu 2013; MacKenzie et al 2015). The categorical idea and definition of rock art does not fit the storied land and seascapes of many Pacific Island people. Rock art is frequently ensconced in heritage landscapes that are storied spaces layered with meaning, components of ancestral heritage landscapes extending from mountain ridge to ocean reef, and/or sacred/restricted spaces (e.g., see Liston and Miko 2011; Sand et al. 2005: 525, and Van Tilburg et al. 2017; fig. 5.15).

Promoting rock art often requires engaging, endorsing, and perpetuating frameworks, perspectives, ideas, and systems that have failed and harmed, or actively harm, communities and heritage repeatedly (Kawelu 2015; Liston and Hoerman 2019; MacKenzie et al. 2015). Recognizing this and instituting a culturally respectful and appropriate model is a challenge inherent to all Pacific heritage management practice: How can preservation and protection articulate with and uphold local values and cultures through colonizing frameworks, funding structures, and legal systems? Further, the framework of rock art valuation does not recognize or invite local expertise in culturally appropriate, meaningful ways. Few legal pathways for Indigenous custodianship and values or community participation exist

FIGURE 5.15.
Petroglyphs amidst the Waikōloa heritage landscape, Waikōloa Ahupuaʻa, Kohala Moku, Hawaiʻi Island, Hawaiʻi. Image: Rachel Hoerman.

in heritage preservation (MacKenzie et al. 2015). Under these auspices, rock art promotion is a projected framework and suite of defined values that does not align with local governmental, authority, and community cultures, perspectives, frameworks and values, which themselves can be disparate (Kawelu 2014; Va'a 2011).

Ultimately, the question should be whether rock art promotion is welcome, desired, and appropriate for local communities as currently defined. Or would another definition work better? What, if any, kinds of partnership do local heritage authorities and communities want? What does relevant, community-based heritage management look like and who decides? A secondary consideration is how entities like the Rock Art Network can support Indigenous/local definitions and valuations of rock art heritage.

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5.6 Rock Art Conservation in Conflict Areas

Savino di Lernia

Following the Uppsala Conflict Data Program georeferenced event dataset (UCDP GED) dataset, the number of armed conflicts from 1990 to 2016 oscillates from 80 to nearly 150, with more than fifty countries involved (Croicu and Sundberg 2017). The death toll is higher in state-based conflicts, with Syria, Afghanistan, and Iraq alone reporting 80% out of all the battle-related deaths in 2016. A large number of countries are affected by at least one ongoing conflict, with the highest concentrations in Africa and Asia (fig. 5.16). The actual fighting areas define significant clusters in the Mediterranean and Intertropical Africa, the Near East, and southern Asia. The density of populations varies strongly—with highest peaks in south-central Asia—but the estimate of approximately 840 million people, roughly 12% of the world's population, seems reliable. Even worse, on a planetary scale, one out of six children live in conflict zones (Bahgat et alii 2016). Poverty, lack of security, social instability, and turmoil are elements of the same picture. The effects of global warming and environmental deterioration strongly contribute to further deteriorating life conditions in large parts of the planet.

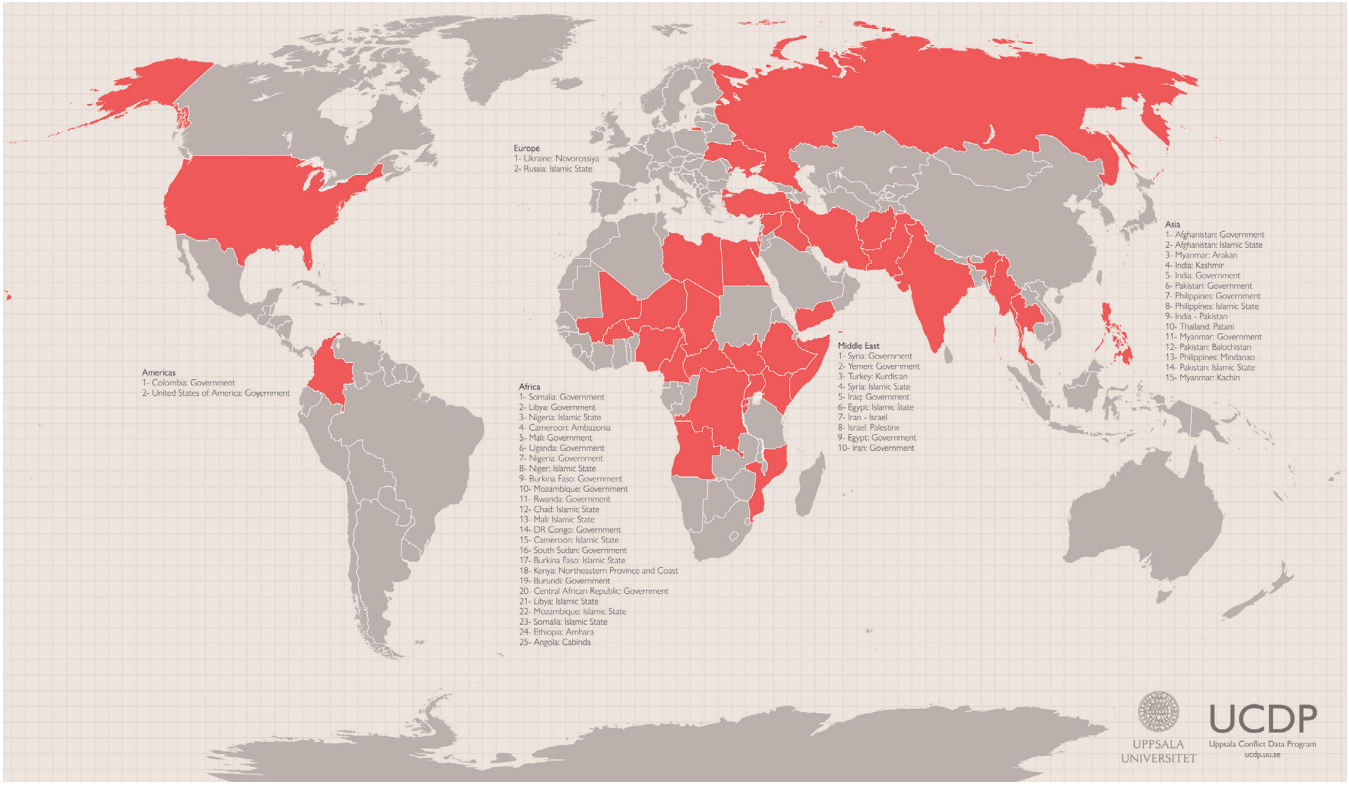

FIGURE 5.16.
Map of active state-based conflicts, 1946–2020. Adapted from https://ucdp.uu.se/downloads/charts, based on Pettersson and Öberg 2020.

Given the widespread presence of rock art across the globe, it is not surprising that virtually all areas affected by armed conflicts host some extraordinary evidence of ancient and more recent human creativity. Although it is very rare to record direct damage to artworks in state-based conflicts, one example of related-conflict damage is represented by bullet impacts on San rock art in the UNESCO World Heritage site of Giant's Castle Main Cave in the Drakensberg, South Africa (fig. 5.17), where in autumn 1873 British troops decided to use San rock art for target practice (Mol and Gimez-Heras 2018). Impact of deliberate shooting on rock art panels is unfortunately widespread, representing a particular case of vandalism related to weapons and violence. The increase of vandalism and deliberate destruction is more common in one-sided fighting, as recorded in the Near East and Libya (e.g., di Lernia 2015). Yet, conflicts, turmoil and social instability have always had a severe impact on rock art and cultural heritage as a whole and there is the difficulty, or even impossibility, of the local institutions to work in the areas where rock art properties are located. This applies to virtually all locations in the world and strongly increases where

FIGURE 5.17.
Damaged painted art from Giant's Castle Main Cave (South Africa), showing bullet impacts. Image: Tom McClintock.

artworks are situated in very remote regions. In places where armed conflicts are particularly durable and still ongoing, access to rock art is often limited and difficult.

In many cases one or more generations were born and raised in an environment of war and have never known peace. Problems of security and subsequent difficulties to obtain full insurance coverage hamper the possibility for local and foreign institutions to acquire research funding. In many cases, the same troubles limit or prevent fieldwork to non-local scientists, with the concurrent effect of further limiting international cultural and scientific cooperation. Poor access to sites and the absence of monitoring of artworks prevents the updating of conservation and management plans, as well as condition reports.

Thus, conflict and instability, whether directly damaging rock art or not, is a major threat to rock art preservation. Several international bodies work to at least mitigate this threat. For instance, despite problems of security, UNESCO was able to undertake a mission to the rock art sites of the Tadrart Acacus—a World Heritage site now on the endangered list (see Fatás Monforte, Article 4.3 this volume)—where ongoing civil conflict makes the area barely accessible (UNESCO 2013). More generally, several member states have sought UNESCO's support post-crisis, such as in Syria and Mali, leading to the creation in 2007 of a strategic program (UNESCO 2007).

Risks to rock art and cultural heritage have certainly increased in the last two decades: the deliberate destruction of objects, monuments, or sites has greatly shocked the international community. It is no coincidence that in 2017 the UN Security Council unanimously voted in favor of the resolution 2346 imposing the protection of cultural heritage in armed conflict. Although this is an important tool, with significant theoretical implications (see: Cuno 2016), the best strategy to protect rock art, as well as other forms of cultural heritage, always involves peace, giving back to people and, especially to children and younger generations, the right to live their culture and their own past.

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5.7 Tourism Aspirations in Australia

Johnny Murison

As a Traditional Custodian of Western Yalanji peoples, we have coordinates to certain cultural heritage sites within the boundaries of our ancestral lands. In 2016, my cousin and I searched for some of those significant sites that were on our list. In one area, and not really knowing where to go, someone or something led us to an amazing rock art gallery so remote that it has been called Magnificent Gallery.

We hadn't been led to Magnificent Gallery by our elders who would then teach us lore and culture, custom, and tradition. No, this was a random trip with the unknown ahead of us. After being blown away by this incredible gallery, we camped for the night, and I said to my cousin, let's see if we can get right to the edge of the escarpment to roll our swags out. In the morning, living like kings eating our hot breakfast, we were blown away again by the breathtaking scenery. My cousin and I looked up at each other and said: "tourism." Although our idea of tourism at first seemed easy, it takes a lot of hard work to get an idea off the ground.

FIGURES 5.18–5.20.
Rock art tourism gives visitors a chance to experience the culture and landscape that makes it such a significant heritage, and contributes to its preservation. (Photos: 5.18. Tropical Tourism North Queensland, 5.19. Jason Charles, 5.20. Erica Murison)

Unfortunately, no elders with scholarly knowledge of the old ways of lore, culture, custom, and tradition took us there to teach us about every item in this gallery, so this was something we have had to learn ourselves. Thus, we learned from uncles, cousins, and other countrymen.

Facing east, Magnificent Gallery is protected from the elements and the Far North Queensland sun, vandalism, and wild animals like pigs or feral cattle. Though, termites have made mud trails over some of the images. Working with Gold Coast Griffith University and Paul Taçon and his team has helped us better preserve and document our art. For instance, photogrammetry, 3D laser scanning, pXRF analysis of paint and other modern technology was used to help us preserve Magnificent Gallery for generations to come.

Since our groups are small—anywhere from two to eleven people—the impact on the art is non–threatening. Our tourism business is now very successful and growing, despite the pandemic (figs. 5.18-5.20). But we will ensure Magnificent Gallery is well-protected for present and future generations.

5.8 A Shifting Landscape for Rock Art Funding After 2020

Terry Little

Apart from the devastating consequences of Covid-19 on people's health and lives, the pandemic lockdowns have resulted in the closure of schools, businesses, and cultural and heritage attractions. Travel, and therefore tourism at those heritage sites which depend on it, will feel the impacts for years to come. Main revenue streams like entry fees, guide fees, and gift shops have turned to a trickle following the precautions which have closed the gates and doors to museums and rock art sites. Diminished resources for heritage institutions and museums will put stress on local communities whose livelihoods have been linked to tourism revenue. Additionally, if the financial motivation to preserve heritage dissolves, the front line of protection can also weaken, putting the future of those resource generators themselves at risk. The situation exacerbates an already perilous funding situation for many rock art sites and raises new challenges while also offering some original opportunities.

Funding for the arts, in general, has faced unique challenges. Institutions have been forced to look at other options to buttress their finances and, certainly in many cases, to simply survive. Even as in-person visitation gradually comes back to life, adaptations that emerged from the past year will likely need to endure, including greater reliance on donors and a mix of in-person and online events.

And, like the rest of the world, the philanthropic sector was also shaken by the pandemic. Many foundations and corporate funders have hit the pause button while they consider their missions and priorities, which are being recalibrated to either redirect funding or finding ways to make more funding available for health and, following history-shaping events in 2020, for issues related to social justice. In an interview in June 2020 Darren Walker, president of the Ford Foundation, stated, "There's never been such an existential challenge to the future of the non-profit sector." He then announced that the Ford would borrow $1 billion so that it can substantially increase the amount of money it distributes. Four other philanthropic organizations pledged to increase their giving by at least $725 million: the Doris Duke Charitable Foundation, the MacArthur Foundation, the W.K Kellogg Foundation, and the Andrew W. Mellon Foundation. There is new funding available—will heritage bodies succeed in finding meaningful links and angles to mobilize these funds?

The Mellon Foundation, the largest supporter of arts and humanities in the US, announced a quarter-billion-dollar commitment in 2020 to fund projects confronting the past and shaping the future by challenging the narratives behind America's monuments. Rock art can certainly be considered as monuments. Could this be an opportunity to recalibrate the narratives about some of the continent's oldest rock art monuments— for example, their significance to Native peoples—through installations, research, and education?

There will likely be more interest in supporting activities which foster new ideas, new ways of thinking, and incubate ideas and innovations in the face of ongoing and new challenges. Projects which invest in local economies and communities should also find funding partners receptive to meaningful pitches. Going local also means finding ways to bring heritage to the people.

Covid-19 has forced many organizations to accelerate the digitization of their products. At the same time, for many, the past year has demonstrated an increasing appetite for digital spaces and experiences. Even after reopening, there will be an expectation of ongoing digital content from the public, requiring investment in expanding existing digital products and creating new channels. The digital sphere removes geographic boundaries: this

also represents an opportunity to use digital products and experiences to attract new types of customers. Take for example the Metropolitan Opera in New York, which had lost approximately $60 million by April 2020. But there was some positive news to accompany this: emergency funding in the tens of millions, 10,000 new donors, and free past performances drew hundreds of thousands of viewers and 15,000 new paid subscribers to its on-demand video platform (Woolfe 2020).

Going digital also means being digitally prepared to raise funds. According to the Chronicle of Philanthropy (Theis 2021), small groups—those making less than $1 million annually—expanded their online fundraising in 2020 by 22.3%. As donors turned to digital donations, the share of total charitable revenue from online giving jumped sharply, from less than 10% in 2019 to roughly 13% in 2020. Future success will likely depend on finding ways to boost online donations, generating income from virtual events, and making online purchases from gift shops possible.

Out of absolute necessity, grant makers have been forced to relax requirements in terms of spending and reporting during the pandemic. Additionally, some of the biggest philanthropists of the year embraced general, rather than restricted, support in their giving. A long-term shift in this direction would be welcome.

The good news is that while the fundraising climate may seem dire at the moment, humans are still wired to give. Donors want to help solve important and urgent problems. To be relevant and successful, it is necessary to ensure that those of us working with rock art create understanding among supporters of the medium for how they can help address urgent needs connected to the challenges we're all experiencing, even if it's not through providing direct Covid-19 relief.

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CHAPTER 6

Nurturing RAN to a Self-Sustaining Future

Neville Agnew, Tom McClintock, Terry Little

The Rock Art Network (RAN) was developed over a period of fifteen years following a series of workshops and conservation and management training courses in South Africa and Australia as part of the Southern Africa Rock Art Project. This Network is an informally constituted body of professional conservationists, archaeologists, filmmakers, volunteers, site managers, and artists from eighteen countries whose creative thinking and action lend great potential in achieving their shared goals of conserving and promoting the world's rock art heritage.

The creation and growth of RAN has been made possible thanks to the expertise and administrative, financial, and moral support of Getty Conservation Institute (GCI) with input, participation, and guidance from members. It is now a forty-member advocacy group, with an unusual, but not unique, approach to creating momentum for rock art preservation and awareness. The concept for RAN is to bring together a group of dedicated rock art people to provide recipes for engaging its audience of the general public and policy-and-decision-makers.

The four colloquia since 2014, held in Australia, Namibia, USA, France, and Spain, have effectively served as venues to meet and discuss issues presented at the sites visited, as well as a stimulus and opportunity for members to form working groups to act upon the ideas that were generated. Members also commit to actions of their own devising and choice. These have included mounting exhibitions, writing for GCI publications, the RAN website, and social media sites, providing assistance in site management, and a variety of other spontaneous efforts that arise when there is a common interest (fig. 6.1).

FIGURE 6.1.
RAN has grown organically in recent years and will continue to work toward accomplishing the common vision of its membership through communication and by strengthening the network of networks. Image: Noel Hidalgo Tan.

As with any professional initiative, there comes a time to tackle the challenges of autonomy and sustainability. To operate and flourish as a dynamic volunteer entity in the future, RAN membership will need to mobilize resources and financial sources without the institutional funding of the GCI. A useful exercise, therefore, would be to identify metrics by which the impact of the group can be assessed—both to highlight successes and promote the importance of such an endeavor to potential sources of funding. An encouraging sign in the last several years has been the willingness and ability of a significant cohort of RAN membership to cover part or all of their expenses to attend colloquia. This demonstrates the value that individual members place in maintaining the relationships forged by the Network, but how can the value that RAN has for its target audiences be measured?

RAN's impact could be quantifiable in some ways, such as the number of unique visitors to the Network's website (hosted by the Bradshaw Foundation), their proactive social media outreach wherein regular articles appear from its members advancing stories of the world's rock art, or the fact that RAN's mission statement has been translated into forty languages. The number of visitors to various exhibitions organized and hosted by Network members, which have come about via connections made during RAN colloquia, is another quantifiable source. The assessment of RAN's impact must be qualitative, although the percolation of information, awareness of global issues and solutions, and building relationships of global and professional diversity has manifested in ways that would be difficult to summarize.

Members are broadly capable of articulating these quantitative and qualitative impacts of RAN among its membership, although it will be necessary to promote these impacts to others if RAN is to develop sustainability. The fundraising experience and know-how of a number of members will be valuable resources in seeking funding to undertake future colloquia at sites with issues of relevance to rock art conservation and public awareness. The purpose of limiting membership is to allow for focused discussions during meetings, as well as to encourage a productive ethos of collaboration. This format generates useful discussions with an added benefit of less onerous logistics when planning joint activities (fig. 6.2).

FIGURE 6.2.
One of RAN's significant and tangible achievements has been the proliferation of exhibitions, which have arisen spontaneously between members through communication and collaboration. Image: Tom McClintock.

During the Covid-19 pandemic, the Network has continued quarterly discussions through Zoom meetings, including planning for the future colloquia that are considered a critical component of RAN activities. At the invitation of community members and the local authorities the next colloquium has been proposed to take place on Rapa Nui (Easter Island) as soon as the time is right.

Future actions will require the further development of an organizational framework to formalize RAN activities and communications, including a rotating secretariat or administrator for coordinating and organizing meetings, a strategy plan with action items, fundraising if future colloquia are to continue in countries such as Scandinavia, New Zealand, Western Australia (Burrup Peninsula and Kimberleys), Colombia and Brazil, China and Korea, Mexico, and, in the USA, Utah and Colorado. These countries and regions have a wealth of rock art and, as well, many of the critical issues—climate change, development, overtourism, vandalism, graffiti removal, and various conservation issues such as the need for documentation of threatened sites and for conservation and public outreach—can be seen first-hand. Moreover, the geographic diversity of membership provides access and credentials for the group to ensure productive meetings on site and with the participation of site authorities, staff, and local communities.

The Network is still an inchoate volunteer organization that, in order to remain viable and relevant, will require its members' ongoing enthusiasm and commitment as well as their modest financial support. It can achieve this by generating enduring energy within the group that will, hopefully, serve to inspire a new generation to care for and promote rock art.

The four short articles in this chapter highlight achievements and successful collaboration between RAN members.

6.1 Promoting Awareness and Safeguarding Rock Art Through Exhibitions

Aron Mazel

It is well recognized that a key element of safeguarding ancient rock art is getting people to appreciate that it forms an important part of our global heritage extending over 50,000 years. The relationship between the appreciation and safeguarding of heritage is succinctly captured in the saying by Freeman Tilden over sixty years ago (National Park Service Administrative Manual, cited in Tilden 1957, 38): "Through interpretation, understanding; through understanding, appreciation; through appreciation, protection." Complementing this, Agnew et al. (2015) have, more recently, spoken about the need to develop and promote exhibitions about rock art to significantly enhance awareness and thereby promote its safeguarding.

The Rock Art Network (RAN) is a global network whose primary objectives are to foster public and political awareness of ancient rock art—a fragile and irreplaceable universal heritage—and to promote its safeguarding. During the last few years these objectives have been furthered through a series of exhibitions by its members, while others are in the pipeline. The first of these exhibitions was *Colour and Power: San hunter-gatherer rock art in the uKhahlamba-Drakensberg* (fig. 6.3), which was shown at the Altamira Museum in Spain between September 2019 and August 2020. This exhibition emerged through the collaboration of two RAN members, Pilar Fatás, Director of the Altamira Museum and Aron Mazel who has been researching rock art in the uKhahlamba-Drakensberg mountains (South Africa) since the late 1970s. After agreeing to do the collaborative exhibition project at a RAN meeting, Pilar obtained a budget for it, while Aron conceptualized the themes and wrote the exhibition text. The exhibition focused on issues people commonly want to know about rock art, such as the abundance and diversity of the art, its chronology, how the paint was prepared, how paintings were made, their interpretation, and sadly, in the case of the uKhahlamba-Drakensberg, how the rock art tradition came to an end in the nineteenth century. There was also a panel about Didima Gorge, a particularly special rock art place in the uKhahlamba-Drakensberg Park.

FIGURE 6.3.
Colour and Power: San hunter-gatherer rock art in the uKhahlamba-Drakensberg exhibition at Altamira Museum. Image: Aron Mazel.

As is often the case with exhibition development, the collaborative net was expanded to bring the exhibition to fruition. Images were sourced not only from Aron's personal archive, but also from David Coulson (Trust for African Rock Art, TARA), the universities of Cape Town and the Witwatersrand, Iziko Museums of Cape Town, and the KwaZulu-Natal Museum. The text was edited by Ann Macdonald and the translation from English to Spanish was done by a PhD student of Aron's, Alix Ferrer-Yulfo. Pilar sourced San hunter-gatherer artifacts from the Museo Nacional de Antropología in Madrid to enhance the exhibition and arranged for the striking design by NEXO and production by Ergo.

Not only was the *Colour and Power* exhibition seen by visitors to Altamira Museum, but social media outreach (mostly via the museum's Facebook page and the Bradshaw Foundation website) extended the reach of the exhibition to many more people. For example, in December 2019 and January 2020, the museum created eight weekly image-rich posts about the exhibition, some of which were widely shared, probably reaching thousands of people.

The *Colour and Power* display has laid the basis for further RAN exhibition efforts, which are set to continue for many years to come. Following *Colour and Power*, an exhibition was developed by María Isabel Hernández Llosas entitled *Quebrada de Humahuaca: art in the landscape. Narratives and images of agropastoral societies in Argentina's Los Andes* (fig. 6.4), which ran at the Altamira Museum from December 2020 to June 2021. Plans are underway for it to be followed by exhibitions at the museum by other RAN members about the rock art of the Pecos River region of Texas (Carolyn Boyd), India (Meenakshi Dubey-Pathak), and Palau (Rachel Hoerman). Expanding on these initiatives, María Isabel Hernández Llosas, Pilar Fatas, and Savino di Lernia are developing an exhibition about the rock art of the Argentinean Andes and Libyan Acacus in their environmental and cultural landscapes. This had been scheduled to open in Rome (Italy) in October 2021 but has

FIGURE 6.4.
Quebrada de Humahuaca: art in the landscape exhibition. Image: Altamira Museum, 2020.

been postponed. Meanwhile, Aron Mazel worked with Martin Hykkerud at the Alta Museum (Norway) on the reshowing of the *Colour and Power* exhibition, complemented by a display of local rock paintings intended to connect these different rock arts sites (fig. 6.5). This exhibition was open to the public between 5 June 2021 and 24 October 2021. In addition, RAN colleagues have worked with their fellow member, Richard Kuba, in setting up the heritage section of his Zurich Museum exhibition, *Art of Prehistoric Times. Rock Paintings from the Frobenius Expeditions*. (12 March through 11 July 2021). In particular, this exhibition provided images of vandalized rock art from around the world to emphasize the fragility of rock art (fig. 6.6).

FIGURE 6.5.
Audience discussing the *Colour and Power* exhibition in Alta, Norway. Image: Mari Strifeldt Arntzen, World Heritage Rock Art Centre-Alta Museum IKS.

FIGURE 6.6.
Art of Prehistoric Times. Rock Paintings from the Frobenius Expeditions. Image: Richard Kuba.

The RAN exhibition initiatives have enabled network members to collaborate in the creation of exhibitions to promote greater understanding and appreciation of rock art with the ultimate goal of promoting its protection. So far, exhibitions have been created or are planned about the rock art of South Africa, Argentina, USA, Palau, India, and Norway. It is now incumbent on members of RAN to sustain these initiatives and to draw on the rock art from many regions to continue raising awareness about this fragile and irreplaceable global heritage.

References

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6.2 Visiting Rock Art Sites: A RAN Working Group Model of Success

Nicholas Hall

One of the main priorities for the Rock Art Network (RAN) is to increase public appreciation of rock art. This is achieved through a variety of Network activities, including the RAN web pages hosted by the Bradshaw Foundation, as well as public outreach activities such as films and exhibitions. One of the areas identified by the Network requiring greater attention around the world is clearer guidance on visiting rock art sites that is directed at the visitors themselves. More authoritative and appropriate information is also needed for tour guides and for those organizations and communities that have rock art sites available for public viewing.

For those rock art sites not fortunate enough to have people who can directly supervise visitors (such as guards or tour guides), their preservation depends on the understanding and goodwill of visitors. Many sites are fragile and are damaged by visitors who are not aware that their actions can be harmful. When visitors do have high-quality guidance and information about the rock art they are seeing, they gain greater appreciation and respect for it. In this way, providing such information can improve both appreciation of rock art and its conservation.

To focus on the task of creating some more authoritative guidance for visiting rock art sites, RAN created a working group to utilize and focus the knowledge and experience of its members. Consisting of six Network members who sought advice from the broader Network to locate source materials and examples, the group considers global issues and drafts material that can be made available via the Network's web page (fig. 6.7).

The outcome is a guide that is available free for anyone to access and use and that provides information about rock art and its origins, variety, meanings, and significance. Having given visitors an increased appreciation of rock art, the guide then provides suggestions about how to best enjoy their experience, while at the same time respecting the rock art and following simple rules to protect the sites.

Aside from directing information to the visitors themselves, the working group also identified an important need for information that could be relayed via tour guides, local host communities, and the agencies responsible for rock art sites that are open to the public. A Care Code for Rock Art Sites is included in the guide with downloadable graphics that can be used by these groups to include in their own material or that can be easily included in brochures or on signs.

Working groups like this one are an efficient way that RAN can practically harness the cultural and intellectual expertise of its global membership for specific projects or outcomes. In this way, the Network can make a tangible and lasting contributions to the international recognition and protection of this fragile and beautiful heritage.

FIGURE 6.7.
An example of a working document to organize the activities and progress of RAN working groups. Image: Nicholas Hall.

RAN WORKING GROUP

PROJECT PLAN

ROCK ART NETWORK
WORKING TO PROTECT A CULTURAL TREASURE

Plan for:	Visiting Rock Art Sites – RAN guide		
RAN lead	Sharon Sullivan		
RAN members	Nicholas Hall, Maria Isabel Hernandes Llosas, Terry Little, Tom McClintock, Rachel Hoerman.		
Objective	To produce a set of materials that can be published on the RAN website which addresses the needs of visitors to rock art sites to enable them to take positive action to appreciate rock art and to support its management and conservation.		
Principles covering work	The work will be done on the basis that: ▪ There will be a range of audiences for the material and we need to be clear what the needs of these audiences are in order to effectively communicate to them ▪ We aim to emphasise responsibility, respect and positive action rather than just produce a list of 'do's and don'ts'eeeeeeeeeeeeee ▪ The materials will include cultural sensitivity and recognition of cultural approaches as well as just addressing physical impacts		
Work plan	*Tasks*	*Who*	*When*
	✓ 1. RAN members invited to comment and provide examples	Sharon and RAN	July/August 2020
	✓ 2. Initial scope of audiences, content and approach	Sharon, Maria Isabel and Nicholas	September 2020
	✓ 3. Working Group Meeting 1 – Revise Project Plan and key documents from discussion	NH	30 September 2020
	❑ 4. Revision of document for #1 content	Sharon	October 2020
	❑ 5. Request additional comment and examples of text from RAN members	Sharon	October 2020
	❑ 6. Review documents for #1 and #2 content	WG	October 2020
	❑ 7. Working Group Meeting 2 to refine content and revise future tasks	WG – TM to send invite NH to send agenda prior	11 November 2020
	❑ 8. Mock-up of possible presentation approach for website	WG	
	❑ 9. Development of downloadable supporting materials	WG	
	❑ 10. Drafts of material prepared	WG	
	❑ 11. Development of draft of materials for RAN review	RAN	
	❑ 12. Final changes	WG	
	❑ 13. Design of supporting downloadables	WG and ?	
	❑ 14. Layout of new page on RAN	Bradshaw	
	❑ 15. Launch	Bradshaw and RAN	

6.3 ABCs of Rock Art: A Children's Book

Wendy All

The idea for a rock art children's book was conceived at the 2017 Art on the Rocks Namibia colloquium. I had a visceral memory of falling in love with images on a museum-quality calendar at the age of three—animals from the Lascaux cave. As that memory rippled through me, I knew the right kind of children's book could introduce rock art in a beautiful way and inspire new generations who would share my feelings.

In 1997, after taking archaeology classes with the archive's director, Jo Anne Van Tilburg, I became a volunteer with Cotsen Institute of Archaeology's Rock Art Archive at UCLA. Our group's success as a volunteer organization was to be the topic of the 2017 colloquium. Because my day job is that of a toy designer and illustrator, the Rock Art Archive incorporated my skills into their field work and publications as part of their collaborative process with volunteers. Now, having the honor to meet members and participate in the Art on the Rocks Colloquium, a new opportunity presented itself. One of the key ingredients of the rock art children's book would be stunning images of engravings and paintings from around the world. What better resource for a potential collaboration than with members who have curated rich collections of images?

Alphabet or ABC books have long-established templates as basic learning tools for children. The format incorporates images of concrete nouns and objects to introduce early reading skills in a fun and memorable way. The theory behind any successful toy or book is to first engage and entertain. All toys and books are educational, each developing different skills or opening different windows to the world. Any learning, whether concrete fundamentals or social skills, comes only after engagement.

Factors that make this book concept unique are that not only will it engage the child with spectacular images of rock art, but it will also incorporate—in the spirit of successful classic toys—the ability to grow with children as early readers and be enjoyed by adults as a reference. It is designed for multiple levels of understanding, and therefore, would never be outgrown.

The book will combine rhymes, both entertaining and informative, with stunning images of rock art contributed by RAN members to inspire a better understanding of the fact that our very human need to make art and communicate is something we share with humans from long ago. The true success of this concept requires that all images and information be acquired and vetted by rock art scholars. Each page will feature a different style of rock art from around the world. The images will be concrete nouns (e.g., animals, objects) and verbs (e.g., human activities such as dancing and hunting), and will include opportunities to introduce concepts of conservation (e.g., Neo caves and vandalism).

The introduction is also done in rhyme to set the tone and explain what rock art is, who made it and its importance to our collective cultures today.

Introduction:

Come on a journey that turns back the clocks
and tells you the story of art on the rocks.
Long ago, people made tools of stone,
They hunted and gathered as history has shown.

Beyond food and shelter were other desires
like sharing great stories around their campfires.
They weren't so different from us now it seems,
in their thoughts, in their needs, in their loves or their dreams.

Some left behind pictures, that's what survives,
important ideas from their daily lives.
On the face of a rock they would peck or engrave
or paint them with pigments on walls of a cave.

Animal images, dancers, designs,
handprints and shaman and hunters in shrines.
The rock art displayed here and how it appears
were expressions of humans for thousands of years.

Now it's the archaeologist's task
to study material remains, and then ask
the purpose to which each of these might apply,
comparing the who – what – when – where – how and why.

Rock art records some of humankind's history,
what some of it means is a lingering mystery.
Follow along, now that we've set the stage,
your adventure begins when you turn the page.

Rhyming has been an effective learning tool for the early reader, from nursery rhymes to Dr. Seuss, enjoyed by children and adults. Each letter of the alphabet and its corresponding rock art image will have its own rhyme (fig. 6.8).

FIGURE 6.8.
What is an Aurochs? A cattle relation,
as you can see by this fine illustration.
Extinct today, but you'll still see them prance
In the cave(s) of Lascaux, located in France.

INDEX

More about the Rock Art in this book

The most critical collaboration occurs within the Index. An excellent example of a successful process is two journal articles provided by Paul Taçon. One contains images of yak rock art in Asia and the second is a kangaroo image from Australia. The accompanying scholarly articles not only provided information to write the verse, but also the material from which to develop a simplified description at a high school reading level for the index. This version would be vetted by not only Paul Taçon, but also by the eventual editor of the book to make certain that the comprehension level is correct. Another successful style of collaboration is with Janette Deacon, who not only provided images and articles of scholarly study but, in the case of the Quagga, included mythologies and dances associated with the animal and enjoyed collaborating on the verse as well.

The book, ideally, would be of the highest quality full-color production to best present the rock art images. Yet, it should not be cost prohibitive to produce or be perceived as so expensive that parents would not want young children handling it. This format also works for those who know little to nothing about rock art and wish to learn more, such as high school students for reference or adults who use children's non-fiction books to learn the basics of unfamiliar subjects, again demonstrating the book's educational value at multiple levels.

The process of creating it is a puzzle with many moving parts, some letters of the alphabet have a wealth of choices, others have few. However, without the collaboration of the members of RAN, this project would be virtually impossible and I thank them for their generosity of images and time and hope that they are enjoying the process as well.

6.4 Crafting a Statement About the Power of Rock Art

Terry Little

Rock art is a valuable, yet vulnerable, heritage of humankind. It is, however, in peril due to graffiti and vandalism, looting, and theft. It is especially subject to irreversible loss or damage caused by exploitation of mineral and natural resources. It often suffers from inadequate visitor management, poorly conceived and managed infrastructure projects, and, increasingly, by natural mechanical and chemical processes provoked by climate change. Thousands of sites have been damaged or destroyed around the world. Rock art conservation and management efforts requiring skills, expertise, and materials attract little recognition and scarce, inadequate funding.

Despite being a valuable asset, rock art is often not understood, respected, or valued by the general public. Decision makers and governments offer little support for its protection and valorization compared to other types of threatened natural and cultural heritage. Potential partners are not motivated to provide technical, moral, or financial support. Attempts to reach a wider public through museums, exhibitions, books, tourism products, radio interviews, and websites have not yet significantly raised public awareness.

In response to this state of affairs, a working group of rock art professionals and enthusiasts from every continent, brought together by Getty Conservation Institute at a workshop in California and Texas in 2018, constructed a 180-word statement aimed at demonstrating both the values of, and threats to, rock art. It was felt that a clear and persuasive case would help ensure that resources be made available to protect rock art and allow the public to appreciate and enjoy this fundamental feature of our shared humanity and cultural heritage.

In the hope that the message would be shared widely, members and friends of RAN helped to translate the text into forty-two (to date) written languages as well as American Sign Language (ASL) (fig. 6.9). While the message of universality and significance of rock art is important, RAN recognizes the differences between various cultural interpretations of the medium. The vision statement, conceived in English, is not set in stone, but rather is intended to stimulate reflection and discussion to further enrich the discourse about rock art and its future.

Why Rock Art is Powerful and Relevant Today

Rock art—ancient paintings and engravings on rock surfaces—is a visual record of global human history. It is a shared heritage that links us to powerful ancestral worlds and magnificent landscapes of the past. It tells the story of the birthplaces of art and the dawn of artistic endeavors. It creates connections to significant places and depicts encounters with the surrounding living world. Through its existence, nature and culture are connected in the landscape. It resonates with our individual and collective identity while stimulating a vital sense of belonging to a greater past. Rock art illustrates the passage of time over tens of thousands of years of environmental and cultural change. It incarnates the essence of human ingenuity and facilitates contacts today between cultures and aspects of spirituality. Rock art is artistically compelling and full of meaning. This fragile and irreplaceable visual heritage has worldwide significance, contemporary relevance, and, for many Indigenous peoples, is still part of their living culture. If we neglect, destroy, or disrespect rock art we devalue our future.

FIGURE 6.9.
The RAN statement, "Why Rock Art is Powerful and Relevant Today," has to date been translated into over 40 languages.

CHAPTER 7

Networking for Rock Art: Global Challenges, Local Solutions

Neville Agnew and Janette Deacon

As the articles in this volume show, RAN members have been inspired by the excitement and discovery of rock art and are exploring ways to stimulate the creative imagination of people everywhere. They have given guidance through examples for dealing with global challenges that can translate into action at a local level.

The collective purpose and strategy of RAN's forty volunteer members from eighteen countries is to reach, inform, and influence the widest audience possible about the values of rock art. These are not monetary values, for there is universal agreement that rock art may not be bought or sold. The values are instead the result of investment in social and cultural capital with input and guidance from communities whose ancestors made the rock art, or who are otherwise responsible for its protection. Despite challenges of climate and cultural change that have threatened the art in the past and continue to do so today, we believe that rock art engages the imagination if we encourage the onlooker to pause and ponder. We want to stimulate the minds of the young and provoke curiosity—that defining characteristic of our species. Our audience is both the rock art researcher and the professional conservationist, but also the public, policy influencers, young people, their parents, and friends, and, through them, decision makers.

Whether the painted or engraved marks were made in a cave in Europe, a rock shelter in Australia, on a boulder in the Sahara, in the mountains of Namibia, or within the Arctic Circle, they are the creations of a direct ancestor: people like us. The lives of the people who executed the creations were likely short and hard but, also, purposeful and they were certainly members of communities who cared for each other. Though we cannot often know the meanings of the depictions—or perhaps because of that—rock art still offers an excitement of discovery and interpretation for all. How did they make it, how old is it, what were the lives like of the people who made it, and why are there so many handprints at many sites?

A site visit is the most powerful way of experiencing the environment and the landscape that was integral to the meaning of the paintings and engravings, while a museum exhibition or a replica offers in-depth interpretation that is often not available on site. Above all, rock art bridges the culture–nature divide and merges art and science in ways that few other areas of archaeology do, or for that matter, the humanities or pure sciences themselves. The opportunities to do so are offered by site managers and community guides at the local level and by the tourism industry at regional and global levels. The solutions described here present a shared heritage and a sense of belonging that facilitates contacts between cultures and aspects of spirituality that are common to many belief systems.

The limited membership of RAN has helped to create social and cultural capital through a sense of constructive focus. We can make best use of this focus by identifying global

threats and using our collective experience and wide geographic reach to raise awareness of the universal values of rock art sites and the most successful ways for managing the threats. Two of the most urgent issues raised in this volume that need to be addressed through cooperative research and planning are the predictable impacts of tourism (especially at sites with high visitor numbers), and the less easily predictable impacts of climate change. They will be the focus for the next few years as RAN members make the best use of the network connections even during the continuing pandemic.

Each member has, of course, professional and community networks of their own. As a network of networks, RAN has the potential to access and disseminate information, knowledge, and experience to benefit conservation, protection, management, and awareness and enjoyment of rock art through media, the web, film, and the printed word—in a plethora of languages.

For the next three years, key objectives are:

1. Become a self-sustaining network with strategy and action plans to inform and influence knowledge about rock art presented to the public;
2. Generate and share news and make accessible reports of field work and research results to the RAN website and the Bradshaw Foundation Facebook page and other online media;
3. Continue a program of thematic colloquia at different sites on a twelve-to-eighteen-month schedule that will address rock art tourism and climate change;
4. Support rock art conservation and management at select sites where members have expertise and broad networks;
5. Encourage site-to-site cooperative assistance programs, research, and exchanges;
6. Engage closely with the public to develop educational materials;
7. Promote the development and exchange of rock art exhibitions that address the impacts of tourism and climate change;
8. Engage with the tourism industry to raise the profile of responsible rock art tourism worldwide.

FIGURE 7.1.
The rock art site of Ubirr, Kakadu National Park, Australia, where the intellectual track for the Rock Art Network was first laid in 2014. Image: Parks Australia.

Author Biographies

Neville Agnew
Neville Agnew grew up in South Africa and received degrees from the University of Natal in chemistry and geology, followed by a PhD. He taught chemistry at Rhodes University. In the mid-1970s he moved to Australia, taking a research position at the University of Queensland and later in the newly formed conservation department of the Queensland Museum where he worked on a number of field projects including the Lark Quarry Dinosaur Trackways, the historic HMS Pandora shipwreck, and preservation of a penal colony in Moreton Bay. He joined Getty Conservation Institute in 1988 and has participated in a number of the GCI's research and collaborative international conservation projects, including the Mogao Buddhist Grottoes of Dunhuang in China, the Laetoli hominin trackway in Tanzania, ruins stabilization at Chaco Canyon, New Mexico, and the Southern African Rock Art Project. His work in China led to a number of national awards. He organized the conservation theme at the Fifth World Archaeological Congress and co-edited the subsequent publication. In 2019, the GCI team completed the collaboration with Egypt's Supreme Council of Antiquities for Tutankhamen's Tomb. He leads the Rock Art Network. He is a senior principal project specialist at the GCI.

Wendy All
Wendy All is a toy designer, illustrator, linguist, and writer. She holds degrees in linguistics from the University of California, San Diego, and a degree in advertising and illustration from Art Center College of Design, Pasadena, California. She was trained in scientific illustration at Scripps Institution of Oceanography (Geological Research Division), California Institute of Technology, the Carnegie Observatories, and UCLA. As a volunteer at the Rock Art Archive, headed by Dr. Van Tilburg, at the Cotsen Institute of Archaeology at UCLA, she contributed to the Captured Visions project, a successful endeavor to record rock art by trained volunteers in the California desert. She is currently a member of the Easter Island Statue Project Atlas editorial team, also under the direction of Dr. Van Tilburg. She is passionate about designing accessible programs to increase public awareness to protect the legacy of rock art treasures.

Carolyn Boyd
Carolyn Boyd is the Shumla Endowed Research Professor in the Department of Anthropology at Texas State University. She is the founder of Shumla Archaeological Research & Education Center (www.shumla.org), which was established in 1998 to preserve the rock art of the Lower Pecos Canyonlands in southwest Texas and Coahuila, Mexico. Boyd is ex-officio head of research for Shumla and serves as vice president on the organization's board of directors. She is author of *Rock Art of the Lower Pecos* and *The White Shaman Mural: An Enduring Creation Narrative in the Rock Art of the Lower Pecos*, which received the 2017 Scholarly Book Award from the Society for American Archaeology. Boyd teaches Field Methods in Rock Art, a field school offered through Texas State University and gives numerous lectures around the country and abroad.

Sam Challis
Sam Challis is Head and Senior Researcher at the Rock Art Research Institute, University of the Witwatersrand. His focus is on the interaction between hunter-gatherers, pastoralists and farmers, as well as Europeans, as expressed in rock art around the world. His PhD thesis focused on the acquisition of horses by creolized raider groups in the nineteenth century. His research program in the mountains of Matatiele in the Eastern Cape aims to redress the imbalance of this neglected former apartheid region while training local community field technicians.

David Coulson

David Coulson is the Chairman and founder of Trust for African Rock Art (TARA), a Nairobi-based international organization committed to the awareness and preservation of Africa's Rock Art Heritage. Since its inception in the 1990s, TARA has worked in over 20 African countries and the importance of its work has been endorsed by Nelson Mandela and Kofi Annan. Its archive now forms part of the British Museum's global online collections. His photographs have been viewed by over a million people in exhibitions in Dar es Salaam, Johannesburg, London, Los Angeles, Nairobi, N'Djamena, Rio de Janeiro, and Washington DC. David is the author and co-author of many publications including *African Rock Art: Paintings and Engravings on Stone* published in 2001 by Abrams, New York, a definitive book on the subject. He is a long time Fellow of the Royal Geographical Society.

Janette Deacon

Janette Deacon is a South African archaeologist specializing in heritage management and rock art conservation with a PhD in archaeology and Honorary DPhil from the University of Cape Town. Since the early 1960s she has worked at the universities of Cape Town and Stellenbosch, was Archaeologist at the National Monuments Council from 1989 to 1999, was an honorary professor in the Department of Anthropology and Archaeology at the University of South Africa, and is currently an honorary research associate of the Rock Art Research Institute (RARI) at the University of Witwatersrand in Johannesburg. As coordinator of the Southern African Rock Art Project (SARAP) since 1998, she has organized workshops and courses on rock art conservation and tourist guiding at World Heritage sites and national and provincial parks in the region in collaboration with Getty Conservation Institute.

Ben Dickins

Ben Dickins is a graphic designer and filmmaker living and working in the southwest of England. He studied design and visual communications at the University of Bristol, graduating in 1995. In 1996 he was appointed the graphic designer and web designer for the Bradshaw Foundation and is responsible for the organization's publications and web presence. He has spent the majority of his career working in the field of visual communication for rock art and archaeology. He is also codirector of Emotive Design, a graphic art and website design agency. In 2008 he was appointed director of Boilerplate Productions, the Bradshaw Foundation's in-house film production company, and produced the iLecture documentary series on rock art. He is currently working on new film projects with the Center for the Advanced Study of Hominid Paleobiology at George Washington University and with Alchemy VR, the digital arm of Atlantic Productions, looking at the production of virtual reality experiences involving rock art and virtual caves.

Meenakshi Dubey-Pathak

Meenakshi Dubey-Pathak is a Wakankar Senior Research Fellow and Rock Art Expert Advisor, Biodiversity Department, Raipur Chhattisgarh and Tourism Department, Bhopal, Madhya Pradesh. She has discovered dozens of new painted sites during her many years of fieldwork, mostly in Madhya Pradesh (particularly in the Pachmarhi area about which she did her PhD, under the National Fellowship of UGC, NET). She was awarded the high honor of *Chevalier des Arts et Lettres* (Knight in the National Order of Arts and Letters) by the French Minister of Culture and Communication in 2014. She acted as an International Expert for rock art with ICOMOS and UNESCO and is a member of the Bradshaw Foundation Advisory Board. She has devoted nearly thirty years of her life to the discovery, study, publication, exhibitions, workshops, and protection of Indian Rock Art. Currently involved with research projects on central Indian rock art and ethnic culture, her scientific concerns are now mostly related to prehistoric rock art, focusing primarily on its preservation and recording, the study of its archaeological context, and, most significantly, the problems of epistemology and the search for meaning.

Pilar Fatás Monforte

Pilar Fatás Monforte is currently the Director of the National Museum and Research Center of Altamira (Ministry of Culture of Spain), which manages the Cave of Altamira. She has been developing her work for this museum since 2000, where she was the deputy director for fifteen years, and has belonged to the Spanish Museum Curators Body of the Spanish Ministry of Education, Culture and Sport since 1999. She holds a postgraduate degree in Cultural Heritage Management and degrees in Art History, Antiquity Sciences (Prehistory and Archaeology, University of Zaragoza), and Social and Cultural Anthropology (UNED). As a researcher, she has participated in and directed conservation efforts for archaeological and rock art research projects at the Cave of Altamira and has coordinated the project

"Registration and National Inventory of the Archaeological Pre-ceramic Heritage and Rock Art of Paraguay." She is currently researching the influence of the Altamira's rock art on contemporary and modern artistic creation.

Qian Gao

Qian Gao is an Assistant Professor in Museums and Heritage at Durham University (UK). Her research focuses on the interrelationships between the understanding, use, conservation, and management of heritage (particularly rock art heritage), as well as the integration between humanistic and scientific approaches in heritage, museum, and rock art studies. Her doctoral project, "World Heritage, Archaeological Tourism and Social Value in China," was funded by the Agency for Management of University and Research Grants (AGAUR). It explored the interactions between the UNESCO World Heritage program, tourism, and social values attributed to archaeological sites by local communities in China, using the Huashan rock art area in Guangxi Zhuang Autonomous Region as a case study. Her postdoctoral project, "Values beyond Boundaries," funded by the University of Stirling's Anniversary Fellowship, is an interdisciplinary study exploring how conservation practices and digital technologies have informed, and been informed by, the social values of heritage, focusing on rock carvings and rock art sites in China and Scotland.

Jean-Michel Geneste

Jean-Michel Geneste is an archaeologist and honorary general curator of cultural heritage with the French Ministry of Culture and Communication. His first research projects were dedicated to the study of the lithic production system among Palaeolithic cultures. Geneste has been involved in the study of the archaeology of rock art since 1992, when he was appointed curator and director of scientific research of the Lascaux Cave. Since 2002 he has been in charge of the multidisciplinary research program of the Chauvet-Pont d'Arc Cave, one of the oldest rock art sites in western Europe. Geneste has also coordinated numerous archaeological research programs in France, Ukraine, South Africa, Papua New Guinea, Arnhem Land, British Columbia, and Russia. He is codirector of the ARTEMIR research laboratory at the Archaeology and Ethnology Institute of Novosibirsk University. He has published hundreds of scientific articles and books and is currently directing the edition of a monograph on the Chauvet Cave, whose first volume will be released in a large format.

Nicholas Hall

Nicholas Hall's professional interests center around rock art conservation and management, cultural landscape management, planning in cross-cultural contexts for land and heritage management, and management of tourism at heritage sites. He has worked for the Australian Heritage Commission, the Australian Government Department of Environment and Heritage, Tourism Northern Territory, and numerous government and Indigenous organizations. He is currently Senior Heritage Advisor to Te Papa Atawhai, the Department of Conservation, in Aotearoa New Zealand. Nicholas has worked on rock art and heritage management at key heritage sites throughout Australia, including Uluru–Kata Tjuta and Kakadu National Parks and on Indigenous-led heritage and tourism programs in protected areas. He has also worked in the for the World Monuments Fund on Venuatu, and on Easter Island, establishing a community-based World Heritage area, and has provided advice on heritage and tourism management for the Angkor World Heritage Site in Cambodia.

Knut Helskog

Knut Helskog's specific interest in rock art began in 1973 with the discovery of the large panels in Alta, Arctic Norway. He launched the investigation, documentation, and presentation of this discovery that same year and wrote the academic basis for the World Heritage application in 1985. Helskog developed an extensive approach to visitor management for the site and was instrumental in the planning and development of Alta Museum, which opened in 1991. He has been a member of numerous committees involved in the protection and presentation of rock art, including the governing board of the Alta Museum. He has worked extensively with the Norwegian Directorate for Cultural Heritage on major rock art projects that have included protection, documentation, conservation, sustainable presentation, and school programming. He has served as an adviser on rock art projects in Russian Karelia, Uzbekistan, and Azerbaijan and as dean and director of the Department of Archaeology of Tromsø Museum. He has also directed numerous salvage excavations in Northern Norway, as well as research excavations in Karelia and on the Kola Peninsula in northernmost Russia in cooperation with colleagues from the Russian Academy of Sciences.

Salima Ikram

Salima Ikram is Distinguished Professor of Egyptology at the American University in Cairo, Extraordinary Professor at Stellenbosch University, and is a Research Fellow at the Smithsonian's Natural History Museum. She has worked as an archaeologist in Egypt since 1986, as well as in Turkey and Sudan. Dr. Ikram co-directed the Predynastic Gallery project and the North Kharga Oasis Survey and directed the Animal Mummy Project at the Egyptian Museum in Cairo, the North Kharga Oasis Darb Ain Amur Survey (NKODAAS), which focuses on rock art of that region, and the Amenmesse Missions of KV10 and KV63 in the Valley of the Kings. A member of the American Academy of Arts and Sciences, Dr. Ikram has published extensively in both scholarly and popular venues (for adults and children) on subject matters ranging from traditional Egyptological subjects to zooarchaeological topics. Her current research focuses on the changing climate of Egypt as reflected in its fauna (relying on evidence derived from pictorial, textual, archaezoological, and climatological evidence), rock art, changing food sources and eating habits, and funerary customs.

Savino di Lernia

Savino is an Africanist archaeologist based at Sapienza University of Rome, Italy with thirty years of experience working in North Africa, as well as in Sudan and Kenya. His research has focused on SW Libyan central Sahara, where he designed and directed thirty-five archaeological excavations in the framework of the "Libyan-Italian Mission in the Tadrart Acacus and Messak." His work has also extended to Western Sahara (with King's College, London and Norwich University, UK) where he co-directed the first Anglo-Italian Expedition in the Tifariti area. In 2014, he established "The Archaeological Mission in the Sahara" based on an ongoing international co-operation with the Institut National du Patrimoine (Tunis) to direct archaeological surveys in poorly explored regions of the northern Sahara, such as the Chott el Jerid and Grand Erg Oriental. In 2016, upon invitation of the National Museums of Kenya, he initiated the first Kenyan-Italian Archaeological Mission, directing research in south-east Lake Turkana. In all these regions he has recorded and studied the archaeological context of art works in close connection with local communities, stakeholders, and institutions.

María Isabel Hernández Llosas

María Isabel Hernández Llosas is an archaeologist, rock art, and heritage researcher. She has a degree in anthropological sciences and a PhD in archaeology from the University of Buenos Aires and has completed postdoctoral studies in heritage research and management at the Australian National University, Canberra. Dr. Hernández Llosas has been a university associate and full professor, at graduate and postgraduate levels, at National Universities of Buenos Aires, Rosario, Cordoba, and del Centro in Argentina and at Politecnica del Litoral in Ecuador. She has been an ICOMOS expert consultant in evaluating international rock art sites for proposed UNESCO Heritage listing. She was a conservation guest scholar at Getty Conservation Institute and is a member of the Rock Art Network. Her work in rock art has been conducted primarily in the southern Andes and Patagonia in Argentina and abroad in Mexico, Italy, and Australia. She is regional archaeologist in Quebrada de Humahuaca, Argentina (World Heritage) and has been studying the human-environment long term interactions, resulting in present human landscape for many years. She also address heritage studies with a broad social sciences and humanities approach which considers the importance of human societies' ancestral connections with their lands, regarding all the cultural aspects involved while stressing the importance of the association between heritage, social memory, and cultural identity.

Rachel Hoerman

Dr. Rachel Hoerman is an archaeologist and adjunct professor at the University of Hawai'i at Mānoa with 15 years' experience throughout the Hawaiian Islands and Indo-Pacific region. Dr. Hoerman specializes in heritage policy, rock art research and landscape archaeology, communities-based heritage management, and unmanned aerial systems (UAS)/remote sensing. Dr. Hoerman has performed ethno-archaeological research throughout the Hawaiian Islands and Pacific Rim, heritage assessments in Southeast Asia, historic preservation work and underwater archaeology in Micronesia, and rock art research globally. She is committed to working in partnership and solidarity with Indigenous and Native communities seeking justice and greater autonomy in the stewardship of their heritage. In addition, she lectures in the University of Hawai'i system.

Myra Giesen

Myra Giesen is a Research Associate in the School of Education, Communication, and Language Sciences and the School of Engineering, as well as a Visiting Fellow in the School of History, Classics and Archaeology at Newcastle University. Before relocating to the UK in 2006, Myra had a twelve-year career in cultural resource management with the US federal government. She has a diverse background with experience in NAGPRA compliance and research in human osteology, digital heritage, the interpretation of tangible and intangible cultural heritage, and social solutions to environmental dilemmas.

Richard Kuba

Richard Kuba is senior research fellow at the Frobenius Institute, Goethe University Frankfurt (Germany) and curator of the Institute's pictorial and rock art archive. He holds a PhD in Anthropology from Bayreuth University and has conducted extensive fieldwork in Nigeria, Benin, and Burkina Faso. His research focuses on pre-colonial history and the European encounter with Africa. He has edited numerous volumes such as *Land and the politics of belonging in West Africa* (Brill 2005), *L'avant et l'ailleurs. Comparatisme, ethnologie et préhistoire (Cerf 2020), and Construire l'ethnologie en Afrique coloniale: politiques, médiations et collections* (Presses Sorbonne Nouvelle 2020). He has curated rock art exhibitions in Martin-Gropius-Bau, Berlin, in Museo Nacional di Antropologìa, Mexico-City, in Musée Théodore Monod, Dakar, and in Museum Rietberg, Zurich. Currently he heads a German Research Foundation project on rock art recording in Northwestern Australia in the 1930s and 1950s.

Terry Little

Terry Little is Senior Adjunct Lecturer at Ahmadu Bello University in Zaria, Nigeria (since 2019) and advisor to TARA (Trust for African Rock Art). His work in the field of cultural heritage has been with a focus on conservation, communications, and community engagement. He has firsthand experience on museum, rock art, and other heritage projects in Angola, Benin, Brazil, Chad, Chile, Djibouti, Ethiopia, France, Ghana, Guinea, Italy, Kenya, Malawi, Morocco, Niger, Nigeria, Portugal, South Africa, Zambia, and Zimbabwe. He has been a lecturer in communications and marketing of cultural heritage at the University of Cassino and the Venaria Reale/University of Torino, Italy. At TARA, he led the development of outreach programs and community rock art projects around Africa and mobilization of financial, technical, and moral support from numerous partners. He has been engaged in conservation and outreach projects with the British Museum, British Council, École du Patrimoine Africain (EPA), Getty Conservation Institute, UNESCO, National Museums of Kenya, and the Centre for Black and African Arts and Civilization in Nigeria (CBAAC).

Johannes Loubser

Johannes (Jannie) Loubser, PhD and RPA, is the archaeologist and rock art specialist at Stratum Unlimited, LLC. In 1989, he received a PhD in archaeology from the University of the Witwatersrand, South Africa. In the same year he also received a post-graduate diploma in rock art conservation and management from the University of Canberra, Australia. Loubser is a Research Associate at the Rock Art Research Institute (RARI) at the University of the Witwatersrand and the LAMAR Research Institute in Georgia. He has worked on numerous archaeological and rock art projects in southern and eastern Africa, North and South America, Australia, and the islands of Hawai'i and the Caribbean.

Martin Marquet

A Franco-American living in the US since 2005, Martin Marquet studied at the Atelier de Sèvres in Paris and then began his career at Films de Mon Oncle, dedicated to the restoration, distribution, and promotion of the films of Jacques Tati. Since that time, he has worked on the releases of more than 200 audiovisual projects around the world. Marquet has worked on the theatrical release and promotion of films from major Hollywood filmmakers and has represented films at the Cannes and Sundance film festivals. Concurrent with his film career, he has branched out into archaeology, with a particular interest in the origins and meanings of rock art. Working with a team of interactive designers, architects, and 3D engineers, he is currently developing an exhibition of rock art panels listed as UNESCO World Heritage. *The Adventure of Rock Art* will utilize innovative techniques of reproduction and of immersive forms of presentation to transport visitors through time and space for a physical and emotional experience worthy of what can be felt in the original sites. This project builds on an exclusive twenty-eight-minute, single-sequence shot through the Chauvet-Pont d'Arc Cave, allowing audiences to experience through a cinematic narrative the totality of 37,000-year-old paintings in the cave. Entitled *The Final*

Passage, this film premiered in 2015 at the Locarno Film Festival and has shown also at Getty Center in Los Angeles, NASA's Jet Propulsion Laboratory in Pasadena, the British Museum in London, and the Palais de Tokyo in Paris.

Patricia Marquet Geneste
Patricia Marquet Geneste started her career in the Polygram group where she was responsible for the development of multimedia educational programs. For the past fifteen years, she has been putting her professional experience in the audiovisual sector to the production of documentary films on international archaeological research operations. She has been operating in Papua New Guinea, Australia, Southern Africa, and Canada. Within the framework of the company RUP'ART Productions that she created in 2013, Patricia has produced documentary films for cultural institutions and universities. In 2015, RUP'ART Productions produced *The Final Passage*, directed by Pascal Magontier.

Aron Mazel
Aron Mazel is a Reader in Heritage Studies at Newcastle University and a Research Associate at the University of the Witwatersrand. Before relocating to the UK in 2002, Aron had a twenty-five-year career in archaeological research and heritage and museum management in South Africa (SA). He has researched hunter-gatherer history through excavation and rock art, museum and archaeology histories, digital heritage, and the management and interpretation of tangible and intangible cultural heritage. Aron has recorded rock art in the uKhahlamba-Drakensberg (SA) and Northumberland (UK) and has published on many rock art topics such as safeguarding, distribution, acoustics, domestic animals, seasonality, colonial imagery, and chronology.

Tom McClintock
Tom McClintock is a Research Associate at Getty Conservation Institute where he is undertaking research on the conservation and management of rock art sites. Tom is trained as a multidisciplinary conservator whose early career focused on the treatment of studio materials, primarily paintings and paper. After developing an interest in the preservation of rock art sites, Tom pursued a master's degree from the UCLA/Getty Interdepartmental Program in the Conservation of Cultural Heritage, graduating in 2016. Beyond rock art preservation, Tom specializes in advanced photographic imaging techniques and their application to the field of conservation.

Jo McDonald
Professor Jo McDonald is the Director of the Centre for Rock Art Research + Management at the University of Western Australia. She has been recording rock art in Australia for almost forty years. She holds the Rio Tinto Chair in Rock Art Studies, funded by RTIO's Conservation Agreement for the Dampier Archipelago National Heritage Place (Murujuga). She has formulated regional management plans (e.g., Sydney Basin, Port Hedland) as well as site specific Plans (e.g., Whale Cave). She co-wrote the National Heritage Listing and Outstanding Universal Values documents for Murujuga. Her ARC Future Fellowship compared rock art in Australia's Western Desert and in Great Basin National Park in the US. She has developed collaborative partnerships with the Aboriginal communities across the Pilbara and is currently leading an ARC Linkage Project investigating dating Murujuga's rock art using innovative science. She is the Chair of Australia ICOMOS' National Scientific Committee on Rock Art.

Johnny Murison
Johnny Murison owns and operates Jarramali Rock Art Tours in Cape York Peninsula, home to the world famous Quinkan Rock Art. He offers insight into the culture, stories, and beliefs of the world's oldest living culture and invites his guests to immerse themselves fully in a remarkable, authentic, and meaningful connection on country. Johnny is a Traditional Owner from the Kuku-yalanji people and takes his guests through the distinctive savannah grassland landscape and helps them read the country so they can gain a deeper appreciation of his country and its variety of wildlife species.

Catherine Namono
Catherine Namono is a Senior Lecturer in rock art, heritage management, and conservation at the School of Geography, Archaeology, and Environmental Studies, University of the Witwatersrand, Johannesburg. She is interested in developing an understanding of the complex symbolism of rock art in approaches that include perceptions of landscape of past and present communities. Catherine is passionate about heritage conservation and management, archives and social responsibility,

community heritage tourism, African knowledge systems, and the inclusion of local voices in knowledge production.

George Nash
George is an Associate Professor and part-time lecturer at the Geosciences Centre, University of Coimbra (IPT), Portugal. He is a member of the management and academic committee and lectures about architectural and landscape theory, prehistory and art, and excavation and European heritage planning legislation and policy. Before this, George lectured at Bristol University. George has an extensive publishing record with over thirty-six authored, edited, and co-edited books and 150 academic papers: focusing mainly on prehistoric art. In May 2018 George published *Archaeologies of Rock Art: South American Perspectives* through Routledge and is currently surveying all Welsh prehistoric rock art sites. George, along with colleague Aron Mazel, organizes the British Rock Art Group (BRAG) annual conferences. As part of an ongoing publishing commitment, George and Aron will be producing their second edited book on the rock art of the British Isles and Ireland (due out in late 2021).

Gerard O'Regan
Gerard O'Regan has worked in New Zealand heritage management for over thirty years. Starting as an ethnology technician and Māori collection manager at the National Museum, Wellington, he then provided professional advice to small community museums in Otago and Southland. Gerard has served on the NZ museum's association council, undertaken contract research on bicultural developments in museums, and has been a ministerial appointee to the Māori Heritage Council of NZ Historic Places. Within his tribe, Ngāi Tahu of the South Island, Gerard has been active in his marae (local Māori community), served on the tribal council, and was the first tribal heritage manager. Throughout, he has maintained an active interest in Ngāi Tahu's rock art heritage, initially managing the tribe's survey project, then setting up a tribal rock art trust and leading the establishment of the Ngāi Tahu rock art visitor center. At the University of Auckland, his master's thesis in archaeology examined South Island rock art, his doctoral dissertation explored Māori belief of place through the archaeological context of rock art, and his post-doctoral research has been documenting the character and distribution of rock art in the North Island. He is now Curator Māori at Otago Museum, Dunedin, where he continues researching and archiving Māori rock art heritage.

Ffion Reynolds
Dr Ffion Reynolds trained as an archaeologist at Cardiff University, completing her PhD at the university in 2010, focusing on the rock art of Neolithic passage tombs in the UK. Her research took her to Namibia in 2017, where she still works to promote public interest in heritage and rock art, with the archaeology department at the University of Namibia. She currently works for Cadw, the historic environment service for the Welsh Government, overseeing their public programs. She co-directs a public archaeology excavation in the multi-period landscape around the important site of Bryn Celli Ddu Neolithic passage tomb, on Anglesey, UK.

Peter Robinson
Peter Robinson is the Editor of the Bradshaw Foundation. He is a contemporary artist working primarily as a sculptor, elected into the Royal Society of British Sculptors in 1998. He is a co-director of Emotive Design, a graphic art and website design agency. In 1999 he was appointed Project Controller for the Bradshaw Foundation to direct rock art preservation projects. These include the Dabous petroglyph moulding and casting project in the Sahara, organizing research expeditions, establishing affiliations and working relationships with rock art research institutions, and developing the Bradshaw Foundation website as an online resource. In 2004 he was appointed Editor of the Bradshaw Foundation and co-director of Boilerplate Productions, the Bradshaw Foundation's in-house film production company, producing the iLecture short film documentary series on rock art.

Sharon Sullivan
Sharon Sullivan, AO, is a former executive director of the Australian Heritage Commission and a former member of the World Heritage Committee representing Australia. She has been deeply involved in the development of cultural heritage management approaches in Australia and internationally. Sharon has worked as a cultural heritage consultant for the Australian government, the World Bank, the World Monuments Fund, Getty Conservation Institute, and the government of the People's Republic of China. She has been particularly interested in rock art site management, developing and running courses for the GCI and ICCROM, and collaborating with Nicholas Hall and with Australian Indigenous rock art

custodians to establish community-run site management and sustainable tourism regimes. Sharon has been appointed an Officer in the Order of Australia and a life member of ICOMOS for her services in heritage conservation. She also is a recipient of the Rhys Jones Memorial Medal for Services to Archaeology.

Paul S. C. Taçon

Paul S. C. Taçon FAHA, FSA is an ARC Australian Laureate Fellow (2016-2021), Chair in Rock Art Research, and Distinguished Professor of Anthropology and Archaeology in the School of Humanities, Languages, and Social Science, Griffith University, Queensland, Australia. He also directs Griffith University's Place, Evolution, and Rock Art Heritage Unit (PERAHU) and leads research themes in the Griffith Centre for Social and Cultural Research and Griffith's Research Centre of Human Evolution. He has conducted archaeological and ethnographic fieldwork since 1980 and has over ninety months field experience in remote parts of Australia, Cambodia, Canada, China, India, Indonesia, Malaysia, Myanmar, southern Africa, Thailand, the Philippines, and the US. In December 2016, Prof. Taçon was awarded the top award at the annual Australian Archaeological Association conference: the Rhys Jones Medal for Outstanding Contribution to Australian Archaeology. He also received the 2016 Griffith University Vice-Chancellor's Research Excellence Award for Research Leadership.

Noel Hidalgo Tan

As a senior specialist in archaeology at SEAMEO-SPAFA, Noel Hidalgo Tan works in capacity building for archaeology across Southeast Asia. His research highlights have been documenting rock art sites across mainland Southeast Asia and discovering the hidden paintings of Angkor. His larger research interests lie in the archaeology of Southeast Asia, in particular the rock art of Southeast Asia. His career has seen participation in a number of projects across Cambodia, Thailand, Laos, Myanmar, Malaysia, Singapore, and Australia. His interests in rock art are influenced by his journalism background and he has published works in the mainstream and online media as well as in the academic press. He runs the Southeast Asian Archaeology Newsblog.

Jo Anne Van Tilburg

Dr. Jo Anne Van Tilburg is an archaeologist, director of the UCLA Rock Art Archive, a member of the global Rock Art Network, and director of the Easter Island Statue Project (www.eisp.org). She heads an international, interdisciplinary research team conducting a comprehensive field inventory, excavations, and conservation of Easter Island statues. An advocate for site preservation, she was appointed twice to the United States National Park Service Advisory Committee, U.S. National Landmarks Commission.

David S. Whitley

David S. Whitley specializes in the prehistoric archaeology and ethnography of far western North America, with particular interests in sacred sites, rock art, chronometrics, and cultural heritage management. He has also worked in southern Africa, the European Upper Palaeolithic, and Guatemala. His professional publications include eighteen books/monographs and approximately 100 articles and chapters. Included among his recent books are *Cognitive Archaeology: Mind, Ethnography, and the Past in South Africa and Beyond* (Routledge, 2020), *Cave Paintings and the Human Spirit: The Origin of Creativity and Belief* (Prometheus Books, 2009), and *Belief in the Past: Theoretical Approaches to the Archaeology of Religion* (Left Coast Press, 2008). His *Introduction to Rock Art Research* (Left Coast Press, 2005, second edition 2011) received a Choice Outstanding Academic Book Award for 2006. His publications have been translated into six languages beyond English. Dr. Whitley has written nominations for 460 sites that are now listed on the National Register of Historic Places (NRHP), and the 100 site Carrizo Plain Archaeological National Historic Landmark (NHL) district, approved in 2012. In 2001 he received the Thomas King Award for Excellence in Cultural Resource Management from the Society for California Archaeology.

Lori Wong

Lori Wong is a wall painting conservator at Getty Conservation Institute. Committed to improving approaches and strategies for protecting and conserving cultural heritage sites, she has worked in China at the Mogao Grottoes in Dunhuang and at the Imperial Mountain Resort and its Outlying Temples in Chengde, in Egypt at the tomb of Tutankhamen and the Valley of the Queens, Luxor, and in Myanmar/Burma at the site of Bagan. Trained in Conservation at the Courtauld Institute of Art in London, Lori also holds an MBA from The Wharton School of the University of Pennsylvania. She is a Fellow and current Member of Council of the International Institute for Conservation of Historic and Artistic Works (IIC) and was awarded the Rome Prize in Historic Preservation and Conservation from the American Academy in Rome.

Acknowledgments

Enormous gratitude is extended to all those who facilitated the organization and realization of the 2018 and 2019 colloquia and the publication of this volume, in particular our project coordinator at the GCI Adrianne Himel and our RAN colleague Patricia Marquet Geneste who worked tirelessly to ensure our group's comfort and success in France and Spain.

Thanks to the many organizations and individuals who hosted our site visits in California and Texas, including Tamara Whitley (Bureau of Land Management) at Painted Rock, RAN member Jo Anne Van Tilburg for the visit to Little Lake (and her husband Jan for the wonderful lunch at their home), RAN member Carolyn Boyd, Karen Steelman and all of Shumla for the many sites in the Lower Pecos, Jack Johnson (National Park Service) and Texas State Parks for our visit to Seminole Canyon, and Marise McDermott for giving us a tour of the Witte Museum.

Our many site visits in France and Spain in 2019 were coordinated by RAN members Jean-Michel Geneste and Pilar Fatás Monforte, in particular the Grotte Chauvet 2 and the Museo de Altamira respectively. For an unforgettable dinner and wine in the Ardèche, thanks to Gilles Azzoni and company. In France, thanks to Jean-Jacques Delannoy for sharing his knowledge of the geomorphology of Chauvet-Pont d'Arc and the replica of Grotte Chauvet 2, Francis Jach for hosting our visit to the cave of Cougnac, and to Frédéric Plassard for his generous tour of Rouffignac. In Spain, thanks to Carlos Olaetxea, Juanjo Aramburu, and Xavier Fernandez for facilitating our visit of the replica of Ekain, and to Roberto Ontañón Peredo for guiding us through the sites of Monte Castillo.

For assisting with the compilation of material and production of this volume, great thanks are due to project coordinator at the GCI Elizabeth Levine and RAN member Terry Little. Thanks as always to the hard work of the Cynthia Godlewski and Chelsea Bingham of GCI publications in managing the editing and publication process, and also to consultant editor Katrina Posner and consultant designers Gary Hespenheide and Anthony Paular.

We acknowledge finally the camaraderie and enthusiasm of all the members of the Rock Art Network who made the two colloquia a success and who have contributed to this publication.

Resources

The following links provide a range of information about rock art and rock art management and conservation:

Getty Conservation Institute
1200 Getty Center Drive
Suite 200, Los Angeles, California 90049-1684
Phone: +1 (310) 440 6803
http://www.getty.edu/conservation/

Rock Art Network (RAN)
The Rock Art Network, established by Getty Conservation Institute and the Bradshaw Foundation, comprises individuals and institutions committed to the promotion, protection, and conservation of rock art globally.
http://www.rockartnetwork.net

Altamira, Spanish Ministry of Culture and Sports
The cave of Altamira is privileged to be the first place in the world where the existence of rock art from the Upper Palaeolithic was discovered. Altamira was also a unique discovery due to the quality, the magnificent preservation, and the freshness of its pigments. Altamira's mission is to conserve the rock art of Altamira and the other public archaeological heritage entrusted to it and to promote intellectual access to its scientific knowledge and the Palaeolithic culture that constitutes its context to all members of the public.
http://www.culturaydeporte.gob.es/mnaltamira/en/home.html

Australian Rock Art Research Association (AURA)
AURA's membership of rock art scholars is dedicated to the study and preservation of rock art in Australia and the world and to the promotion of Indigenous custodianship of traditional Indigenous cultural heritage. AURA also promotes general awareness and appreciation of this heritage, in Australia and elsewhere, and high research standards in the field of palaeoart studies.
http://www.ifrao.com/

The Bradshaw Foundation
The Bradshaw Foundation is a non-profit organization which provides an online learning resource. Its main areas of focus are archaeology, anthropology, and genetic research, and its primary objective is to discover, document, and preserve ancient rock art around the world and promote the study of early humankind's artistic achievements.
http://www.bradshawfoundation.com

British Museum African Rock Art Archive
The African rock art image project team has catalogued c. 23,000 digital photographs of rock art from across Africa—originally from the Trust for African Rock Art (TARA). Combining a wide range of research from the British Museum, TARA, and colleagues in Africa, the project is cataloging and digitally preserving African rock art, ensuring global open access into the future.
https://africanrockart.britishmuseum.org

Centre for Rock Art Research and Management, University of Western Australia
The Centre for Rock Art Research + Management (CRAR+M) aspires to be a leader in rock art conservation and management by research-driven advocacy for its priceless heritage values. While we focus on Australian rock art, we produce research outcomes of international significance.
https://www.crarm.uwa.edu.au/

Chauvet-Pont d'Arc and Lascaux, French Ministry of Culture
In the heart of the Ardèche, the Grotte Chauvet 2 Ardèche is the largest decorated cave replica in the world. The original Chauvet Cave, a UNESCO World Heritage Site, contains an extraordinary collection of prehistoric paintings, drawings, and engravings that are faithfully reproduced in the replica.

The discovery of the monumental Lascaux cave in 1940 brought with it a new era in our knowledge of both prehistoric art and human origins. Today, the cave continues to feed our collective imagination and to profoundly move new generations of visitors from around the world.
https://archeologie.culture.fr/chauvet/en
https://archeologie.culture.fr/lascaux/en

International Federation of Rock Art Organizations (IFRAO)
The International Federation of Rock Art Organizations is a federation of national and regional organizations promoting the study of palaeoart and cognitive archaeology globally.
http://www.ifrao.com/ifrao/

Place, Evolution, and Rock Art Heritage Unit (PERAHU), Griffith University, Australia
PERAHU links Griffith staff and students to a highly collaborative international network of researchers and Indigenous peoples undertaking innovative visual, symbolic, landscape, and cultural evolution research across Australasia. The Unit's vision is to advance global knowledge about human cultural evolution during the past 50,000 years and to highlight the importance of rock pictures as datasets that provide unique insights into the past, especially since the end of Pleistocene.
https://www.griffith.edu.au/griffith-centre-social-cultural-research/place-evolution-and-rock-art-heritage-unit

Rock Art Australia (former Kimberley Foundation), Australia
Rock Art Australia's is a non-profit organization dedicated to researching and protecting rock art by bringing science and Aboriginal cultural knowledge together. We promote the study of the art and its context to understand the history of Australia and its significance in the global narrative of human origins.
https://rockartaustralia.org.au/

Rock Art Research Institute (RARI), University of Witwatersrand, South Africa
RARI endeavors to convey to the public and academic community the complexity, subtlety, and social value of South African and African rock arts in terms of Indigenous beliefs, customs, rituals, and life-ways.
http://www.wits.ac.za/rockart/

Shumla Archaeological Research & Education Center
Shumla is a global leader in rock art research and education, using advanced science and technology to preserve the information held in the oldest "books" in North America, the endangered murals of the Lower Pecos Canyonlands of Texas.
https://shumla.org

Te Ana (Ngāi Tahu) Rock Art Centre, New Zealand
Follow in the footsteps of our ancestors on personalized guided tours to iconic Māori rock art sites and immerse yourself in the history and culture of Ngāi Tahu at our tribal rock art centre, Te Ana.
http://www.teana.co.nz/

The Final Passage
The Final Passage, s a twenty-eight-minute cinematic journey through the 36,000-year-old Chauvet Painted Cave.
https://www.missingmatter.info/tara-expo

Trust for African Rock Art (TARA)

TARA is an international, Nairobi-based organization committed to recording the rich rock art heritage of the African continent, making this information widely accessible and, to the extent possible, safeguarding those sites most threatened by humans and nature. To achieve its mission, TARA works closely with communities where rock art is found as well as with national and international heritage bodies including the UNESCO World Heritage Centre.
http://africanrockart.org/

University of California Los Angeles Rock Art Archive

Researchers and the public are welcome to visit the UCLA Rock Art Archive. The core of their data are the extensive private collections, donated in the interest of research and conservation. The following regions are represented: all areas of California, including the important site of Little Lake in the Rose Valley, other areas of the Far West and Southwest US, Mexico, and especially, Baja California, some Eastern and several Midwestern states, and the Pacific islands.
https://ioa.ucla.edu/content/rock-art-archive

Getty Conservation Institute