

g1

PUBLIC POLICIES AND ROCK ART, BETWEEN RESEARCH AND PRESERVATION

Nathalie FOURMENT, *Ministère de la Culture, PACEA, UMR5199 France*

Roberto ONTAÑON PEREDO, *Museo de Prehistoria y Arqueología y Cuevas Prehistóricas de Cantabria, Gobierno de Cantabria, Spain*

Valérie FERUGLIO, *PACEA, UMR5199, Université de Bordeaux, France*

Contact email: nathalie.fourment@culture.gouv.fr; ontanon_r@cantabria.es; feruglio@free.fr

The heritage of all rock art must be preserved and studied at the same time. Research and preservation are closely linked, and this forms the basis of this session. The interdisciplinary aspect of research is an integral part of the processes of conservation. To preserve without studying does not make sense and may even increase the risks to sites. In addition to the degradation caused by vandalism the sites are naturally all destined to eventually disappear, only the length of time is variable. On top of the complexities of conservation several other challenges impact the processes and outcomes of projects and the associated research. These include questions such as: How do public policies influence the conservation and research directions? What public or private funds or both, are allocated to these issues? How are the results and outcomes shared with the public?

Within this session we would like to present various international cases framed by aspects such as the administrative influence, which scientists are chosen for projects and the influence of the policies on the research, how many researchers are assigned, what institutions are involved, which methods are selected and who are the stakeholders?

New challenges in research on heritage preservation: a comprehensive experiment in the Pech Merle cave

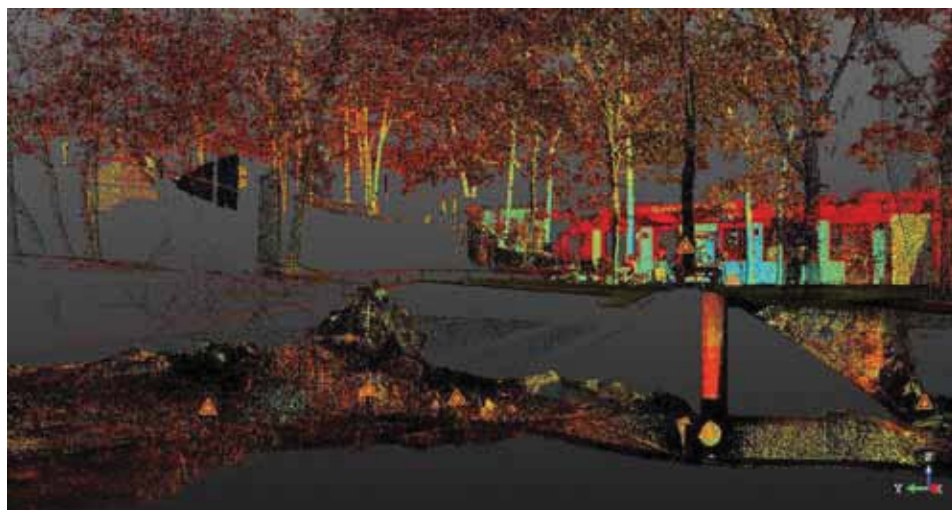
François BOURGES, *Géologie Environnement Conseil*

Genty D., Perrier F, Lartiges B., Bonnet S., Regard V., Girault F., Isambert A, Richon P., Touron S., Boustia F., Lepla J., Genthon P., Lorblanchet M., Zimmerman J.L., Mauduit E.

contact email: fbourges@orange.fr

Keywords: prehistoric painted cave, climatic drift, conservation, monitoring, 3Dscan

Preservation of evidence in prehistoric painted caves is associated with the stability of karstic environments that maintain the stability of air/water/rock interfaces on cave walls. Since the nineties, public policies have supported cave monitoring operations that provided an efficient alert system and a decision-making support for protection or remediation. However, over the past few years, significant drifts of key underground characteristics and climate parameters have emerged in the records. Such growing evidence of a changing environment from combined local and global influences, implies a need to define a standard for the stability of the natural processes for conservation purposes. In anthropized and complex sites, new research and additional information for monitoring are urgently needed to maintain the necessary standards for preservation. In the Pech Merle cave (southern France), in addition to the monitoring funded by the Ministry of Culture since 1998, a team of researchers from private and public research institutions decided, two years ago, to contribute all of their own funding, towards a comprehensive data acquisition project which is still ongoing. Logistical support for 3D scanning was provided by the owner of the cave. The first results of this multidisciplinary project reveal considerable additional complexity on top of the natural environmental factors, originating from cave tourism and surface land use.



Preservation and sustainable management of cultural heritage: Rock Art in Mexico. Equilibrium between documentation, research and management

Maria del Pilar CASADO LÓPEZ
 contact email:
 mpilar.casadol@gmail.com

Keywords: rock art; Mexico, conservation, sustainable management

Wherever rock art can be found in the world, with all its forms of expressions, intentionality and its different developments it represents a phenomenon linked to human thought, mental processes and the intellectual, emotional and social evolution of human beings. Rock art is a very vulnerable element and it is also the graphic testimony that has reached us from the most ancient groups, as well as historic and recent communities that became established in Mexico. This makes it worth preserving. Within the analysis of the processes involved we move from registry to research and preventive preservation, actions of the specific public policy. Registry, through which information capital is preserved; research, as the basis for any decision making and preserving actions with legal support and lastly, raising community awareness. These are some actions designed to prolong and safeguard the life of rock art as an archeological asset. Public policies designed around effective research will provide a starting point to a new preservation paradigm. The dialogue between researchers and policy implementers is key to understanding the real needs of the communities and rock art per se.

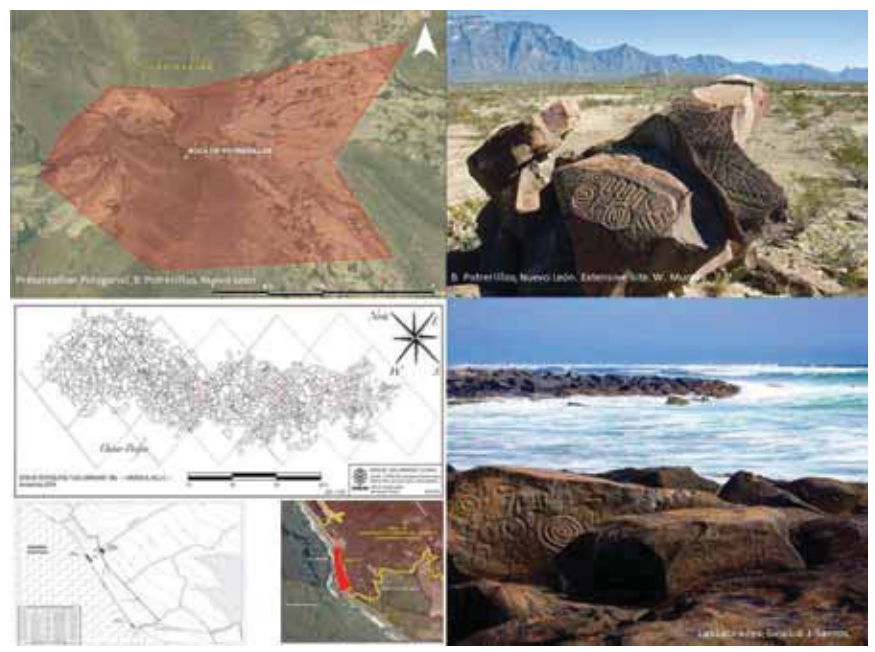
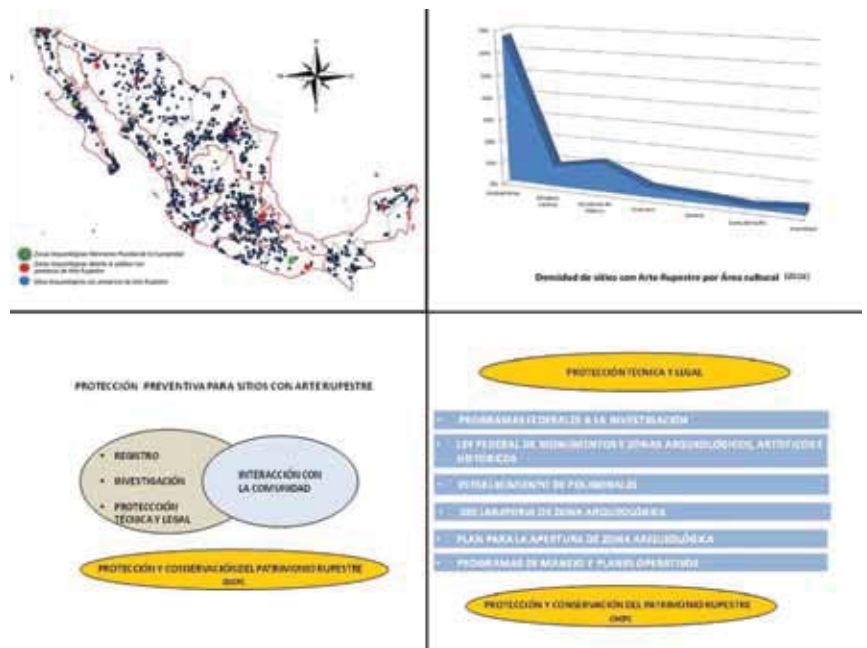


Fig.1 - Mosaic of images. (M.P. Casado)
 Fig.2 - Mosaic of images. (RPMZA, INAH;
 W. B. Murray; V. J. Santos)

Documentation and Diagnosis of conservation for archaeological sites with cave paintings in the Seridó Region - Brazil

Daniela CISNEIROS, *Federal University of Pernambuco - UFPE*

Anne-Marie Pessis, Gabriela Martin, Bruno Tavares

contact email:
danielacisneiros@yahoo.com.br

Keywords: rock art, conservation, Seridó Brazil

Within archaeological evidence, prehistoric paintings and engravings on rocky supports offer an important potential for information on the material and immaterial aspects of past cultures. Rock art is one of the few types of prehistoric evidence whose character represents a universally accepted heritage value. Traces of rock art have survived over considerable lengths of time, but in a state of evident fragility and represent a small element of what existed in prehistoric times. The geobiological changes over time within rock shelters together with new contemporary agents of deterioration (urbanization, pollution and ecological imbalance) increase the conservation risks to this heritage. The Seridó Archaeological Area, which includes rock art, represents a recognized and important area of cultural and natural heritage value on which multidisciplinary studies currently converge. From the perspective of preventive preservation (Brunet, 2006), this research project aimed to develop an indicative diagnostic system with the goal of describing the conservation status of rock art sites in Seridó. This would allow for the proposal of mitigation measures based on protocols that are integrated within the current documentation for the area, initiating a method for identification, evaluation, detection and control for the risk of degradation of sites with rock art.



Fig.1 - Rock art site of Casa Santa, Carnaúba dos Dantas, Rio Grande do Norte, Brazil. (photo Cisneiros, 2018)

The Preventative Conservation Plan and regulated visits for the cave of Altamira

For the past 20 years Altamira has had limited visits inside its cave, it was closed for public visits in 2002 as a means of preventive conservation. During the years of closure, it remained permanently monitored and the research into the main parameters for conservation continued. In 2012 the Ministry of Culture, public administration responsible for the management of the cave, launched a new Research Program for Preventive Conservation and Access Regime for the cave of Altamira. It concluded in 2014 with the drafting and implementation of a Preventive Conservation Plan. Within the project, experimental visits to the cave were carried out during a year in order to measure the exact impact of visitors, and after analyzing the results, it was determined that the cave could remain open to the public in a regime of five people visiting the cave once a week; 37 minutes, of which only 8 minutes in the room of the Polychrome paintings and following a strict protocol of access.

Pilar FATÁS MONFORTE,
*National Museum and Research
Center of Altamira*
contact email: pilar.fatas@
mece.es

Keywords: site management,
preventive conservation,
conservation research, public
visits

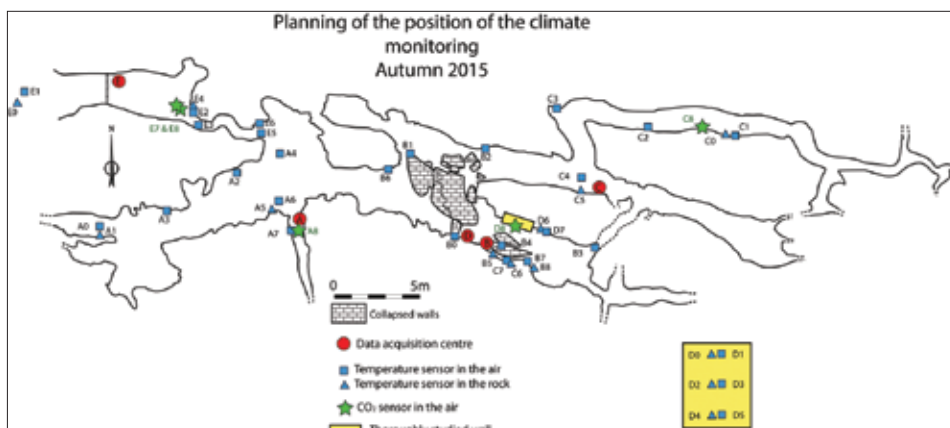


The laboratory cave of Leye (Marquay, Dordogne): a tool in the preservation of decorated caves

Catherine FERRIER, UMR 5199 PACEA, University of Bordeaux
Delphine Lacanette, Léna Bassel, Bruno Bousquet, Rémy Chapoulie, Valérie Féruglio, Dominique Genty, Stéphane Konik, Philippe Malaurent, Jean-Christophe Portais
contact email: catherine.ferrier@u-bordeaux.fr

Keywords: laboratory cave, decorated caves, wall taphonomy, preservation, digital simulation

To understand the evolution of the endo-karstic environment within the framework of the assessment of the preservation and study of parietal art, it seemed that observations and experiments in the scale of 1 (full-scale) were necessary. The implementation of the laboratory cave of Leye was thanks to Norbert Aujoulat's conception of having an undecorated cavity, without archaeological interest, dedicated to the study and understanding of the underground ecosystem and its interactions with the environment. The goal of this research is to develop, in the long term, an expert system that services parietal archaeology and the preservation of the decorated caves. For that purpose, a first stage in the study of the facies of the walls consisted in creating their physiochemical characterization within the cave of Leye. Furthermore, an evaluation of the parameters which control these facies was made from a corpus of non-decorated caves of the Vézère watershed.



Multiscalar use of the 3D tool for the rock art study

Valérie FERUGLIO, *PACEA*
Université de Bordeaux, France
Bruno DUTAILLY, Pascal MORA
contact email: feruglio@free.fr

Keywords: rock art, 3D models, Palaeolithic, methodology, multiscalar

3D models of decorated caves have the potential for a variety of applications once they are controlled and fully utilized by archaeologists. They have the capacity to be an effective method in the study of rock art at a variety of different scales, while also representing an important tool for the communication of results to the general public. When considering a 3D model with a scale that allows for the model to represent the whole cave, the environmental appropriation by the Palaeolithic people can be considered. The 3D model can be used to rebuild the original state of the cave. It can also be used to improve the hypotheses of movement, points of view, and different kinds of lighting, etc.

A 3D model with a scale that encompasses a cave wall panel, concerns the rock art reliefs, taking into account the figures as well as the wall taphonomy. The millimetric and inframillimetric scales help with the technological analyses.

Different ways of scanning have to be used for each goal. This form of rock art research is also a way of combining preservation with the management of important heritage sites.



Fig.1 - Cussac cave, recreated access to the Discovery Panel. (photo V. Feruglio/MC)

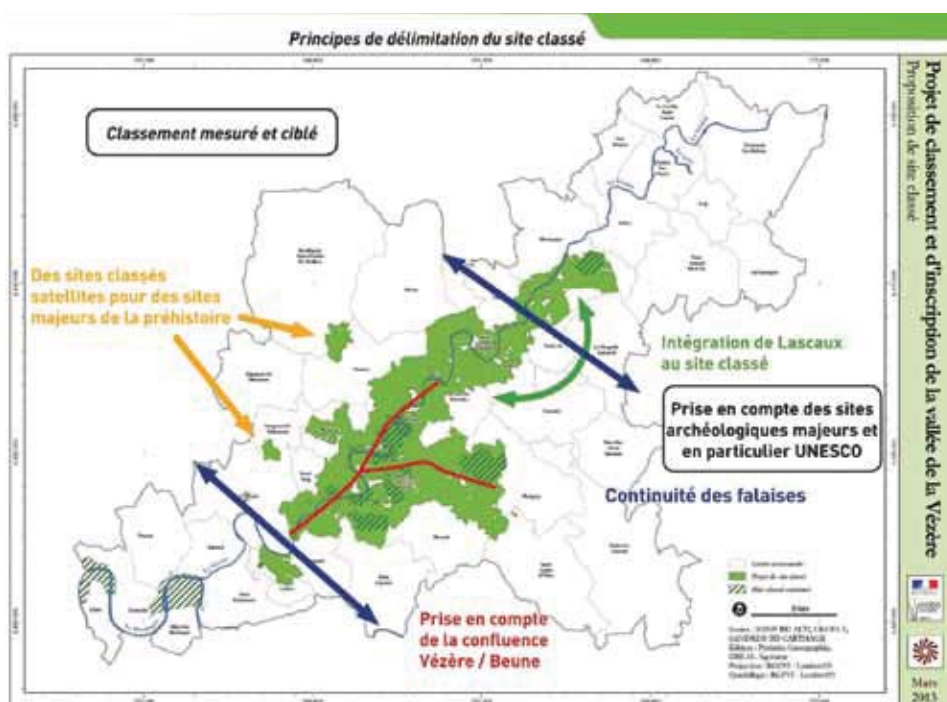
Archaeological deposits and caves in the Vézère Valley: the challenges of research, conservation, shared management and local development

Nathalie FOURMENT, *Ministère de la Culture, France - Direction Régionale des Affaires Culturelles - Service Régional de l'Archéologie et UMR 5199 PACEA*

Muriel Mauriac, Jean-Christophe Portais, Isabelle Vauquois, Gilles Muhlach-Chen, Noël Coyo
contact email: nathalie.fourment@culture.gouv.fr

Keywords: Vezere Valley, UNESCO, "Operation Grand Site", research, conservation, regional policies

In the Vézère Valley, the conditions were favorable for human settlement, the archaeological deposits and the decorated caves are testimony to this. The sites within the valley provide the dual value of heritage significance and the archaeological evidence for understanding past societies. The valley's exceptional character explains why fifteen sites, of which the most emblematic is the cave of Lascaux, were recognized by being listed on the UNESCO World Heritage List, in 1979 - "prehistoric sites and decorated caves of the Vézère Valley". But these sites are vulnerable as they are part of a complex karst environment; the protection zones necessary for their conservation must include particular considerations derived from hydrogeomorphological criteria. In response to these requirements, public policies have historically included various facets: research and information, institutional involvement, the physical environment and legislative protection. Henceforth, the complementary use of the revised protection plan and the actions of the Ministry of Culture and the Ministry of the Environment, will make it possible to further meet the protection needs of these sites, in a renewed dynamic: fundamental understanding of the sites to be enhanced and shared management with local actors on the wider scale of the whole valley.



Integrated approaches to research and conservation in Rock Art: The Gravettian Cave of Cussac (Le Buisson-de-Cadouin, Dordogne, France)

Nathalie FOURMENT, *Ministère de la Culture, France - Direction Régionale des Affaires Culturelles - Service Régional de l'Archéologie et UMR 5199 PACEA*

Jacques Jaubert, Patrice Buraud, Hubert Camus, Monique Drieux, Catherine Ferrier, Valérie Feruglio, Olivier Ferullo, Roland Lastennet, Yan Ledoux, Philippe Malaurent, Pierre-Alain Maron, Nicolas Peyraube

contact email: nathalie.fourment@culture.gouv.fr

Keywords: cave art, Gravettian, Cussac, conservation, research, public policy

The Gravettian decorated and sepulchral cave of Cussac, discovered in 2000, with very favorable conditions for archaeological preservation, has seen the implementation of a conservation policy, that prioritises and merges both research and preservation.

In Cussac, in parallel with the pursuit for public control of the land, the elements of research that constituted the comprehensive consideration for the cave were in its hydrogeomorphological, climatic, karst, and microbiological context, which were prioritized, with an objective for the site's environmental protection. Then, from 2009, the interdisciplinary archaeological research that was implemented, both challenged, enriched and fed into various aspects of conservation. An integrated approach for the cave has meant that the different concerns are not considered in a parallel and distinct way but that on the one hand the development of archaeological research and on the other the conservation requirements are approached in a holistic way. Concrete examples will be presented to illustrate with more clarity, this integrated approach. The research and analysis of the integrated approach in Cussac could benefit the scientific and administrative personnel in charge of rock art conservation, and the wider archaeological community as a model for future sites



Joint management of Boderee National Park, what have we learned in the past 30 years?

Clive FREEMAN, *Galamban*
Jillian HUNTLEY, *Research
Fellow, Place Evolution and
Rock Art Heritage Unit, Griffith
Centre for Social and Cultural
Research*
contact email:
clive.freeman@y7mail.com

Keywords: Aboriginal
Australia, joint management,
National Parks, cultural
landscapes

Collaboration with Australian Aboriginal communities has been standard practice in rock art studies and archaeological research for decades. Set against this backdrop, statutory responsibility for Aboriginal heritage, which typically falls to government agencies, has increasingly involved Traditional Owners. Formally this has seen the rise of co-management agreements, the representation of Aboriginal people within peak bodies, and the vesting of statutory responsibilities for objects/places with Aboriginal organisations (such as Land Councils). More and more, Indigenous Australians are driving the research, assessment and management agenda relating to their heritage; not only adopting, but engaging with, modifying and innovating the use of western scientific method and technologies. In this presentation Yui Artist/ Activist Clive Freeman, Traditional Owner of Wreck Bay, will discuss his experiences as a director on the board of the jointly managed Booderee National Park. Boderee is Aboriginal land, leased back to the commonwealth by The Wreck Bay Aboriginal Community for the creation of the National park in 1995. Clive's discussion will focus on the extensive cultural landscape in which rock art and ochre quarries sit, highlighting the challenges for western management frameworks, such as National Parks, where continuing cultural practices are a part of everyday life.

Restoration of the Lascaux cave morphology to that found at the time of its discovery - a 3D model for preservation and research

Delphine LACANETTE, *I2M (Institute of Mechanics and Engineering), Bordeaux-INP*

Catherine Ferrier, Valérie Feruglio, Stéphane Konik, Philippe Malaurent, Pascal Mora, Jean-Christophe Portais
contact email: delphine.lacanette@bordeaux-inp.fr

Keywords: Lascaux cave, 3D modelling, preservation, restoration, archives, simulation

The Lascaux cave (Dordogne, France) discovered in September 1940 has undergone extensive modifications to its morphology since this date. The entrance has been substantially widened in order to accommodate rapid access for the public, leading to the destruction of the entrance scree. Inside, the grounds have been modified, sometimes dug more than a meter to allow people access whilst standing up, sometimes raised with rubble accumulation. The current morphology can be viewed thanks to 3D laser scanning, its morphology at the time of discovery is based on contemporary interviews or images from that time. With the assistance of data from various sources such as archived information, the 3D model had been modified to recreate the morphology at the time of discovery. Several interesting results for conservation and research have resulted from this work. The simulation of the thermo aeraulic flows based on this rendered morphology will contribute to knowledge of the climatic conditions in the cave at the time of the discovery. As such, the same work could be applied to reproduce the Palaeolithic morphology. It will pave the way for research on the wall accessibility and the distribution of the archaeological evidence.



Fig.1 - Marcel Ravidat standing behind the 3rd Big Bull of the Great Hall of the Bulls in September 1940 (Rights Reserved)

Fig-2 - Position of Marcel Ravidat from the picture (Figure 1) in the modified 3D. (photo Pascal Mora, Archéotransfert)



Public policies of cave art site management in Spain

Roberto ONTAÑÓN-PEREDO,
*Museo de Prehistoria y
Arqueología - Cuevas
Prehistóricas de Cantabria
/ Instituto Internacional de
Investigaciones Prehistóricas de
Cantabria*

contact email: ontanon_r@cantabria.es

Keywords: cave art sites, public policies, site management, Spain, autonomous communities

The aim of this paper is to provide a general perspective of the public policies guiding the management of cave art sites in Spain. The role of the state and regional governments is fundamental in this matter as the Spanish heritage legislation considers the entire archaeological heritage as appertaining to the public domain. The second basic principle in the management of those sites is that they enjoy the maximum legal protection in Spanish heritage regulations. They are given this designation “automatically” from the moment of their discovery. Caves are also affected by other sectorial legislation managing the environment, urban planning, underground water, development, etc., but the heritage value prevails in any case (or it should prevail) over the other laws. Those general principles are applied throughout the country but it is necessary here to consider the complexity of Spanish administration, which is structured into seventeen autonomous communities, all of them endowed with the exclusive control of heritage management, expressed in a number of self-governing heritage laws.

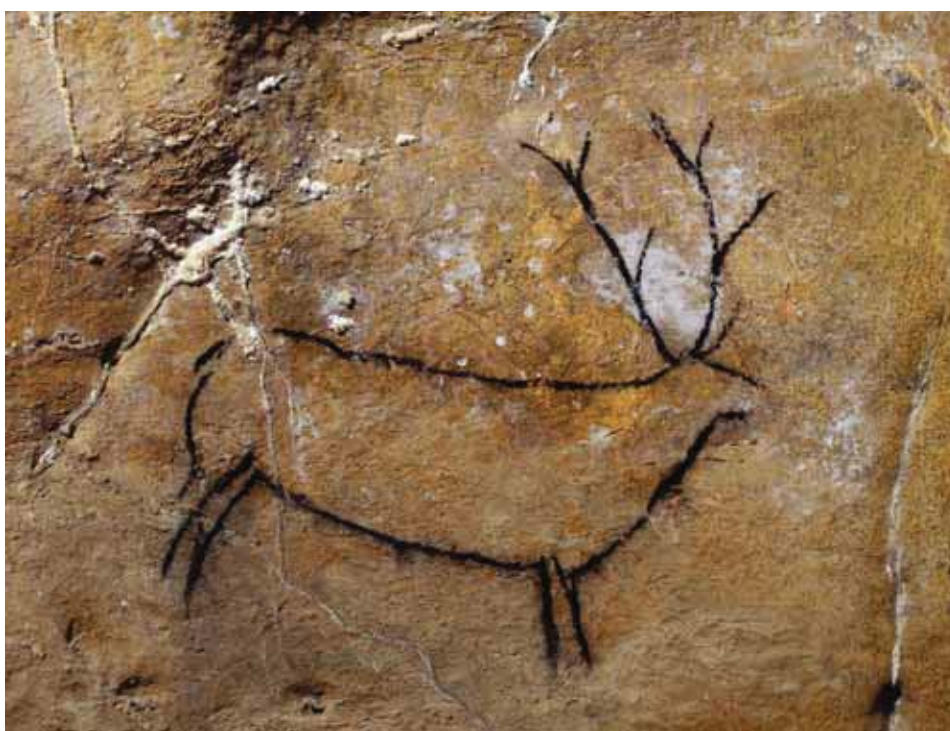


Fig.1 - Visitors center at the entrance of El Castillo Cave, Puente Viesgo, Cantabria. (photo Roberto Ontañón Peredo)

Fig.2 - Figure of a red deer black painting at Las Chimeneas Cave, Puente Viesgo, Cantabria. (photo Pedro Saura Ramos)

Strategic Plan for the Enhancement of Rock Art sites in Cantabria (Spain)

Since the discovery of Altamira in 1879, a long history of research, conservation and management of cave art sites began in Cantabria, Spain, which has progressed in line with the advances in knowledge related to the conservation, research and enhancement of archaeological sites. There are currently seventy Palaeolithic cave art sites, of which ten are world heritage sites and seven are open to the public. These caves embody an outstanding universal value and they also represent an important factor for tourism. The objective of this Plan is to mobilize public resources for the enhancement of the region's most important heritage sites, through improvements in management and infrastructure related to the caves or the renovation of regional museums and the reinforcement of collaborations with the national museum of Altamira. All this, in the framework of an action plan aimed at boosting up what this area has to offer in terms of research, conservation and public enjoyment of its magnificent heritage. Only in this way will the intended returns to society from this potential element of cultural and socioeconomic development be fully realized.

Roberto ONTAÑÓN-PEREDO,
*Museo de Prehistoria y
Arqueología - Cuevas
Prehistóricas de Cantabria
/ Instituto Internacional de
Investigaciones Prehistóricas de
Cantabria*

contact email: ontanon_r@cantabria.es

Keywords: cave art, research, conservation, management, public archaeology



Fig.1 - Territorial planning and land use map for the Archaeological Zone of La Garma, Cantabria, Spain. (Government of Cantabria / Ingenia, S.L.)

Management and conservation for the Valle Camonica Rock Art

After an initial project carried out between 2012 and 2014, in 2017 the *Ministero dei beni e delle attività culturali e del turismo* started a new project on knowledge, management and monitoring of the Valle Camonica engraved rocks, with public funds for Italian UNESCO Sites (according to the Law 77/06, Financial Year 2015). The new project continues from the previous one, but focuses on new rocks found in the last years, on the rocks located in the National Park (loc. Naquane), on Eneolithic stele, boulder-menhirs and on few, but interesting, rock paintings. The archaeological heritage has been recognized, catalogued (www.irweb.it) and georeferenced to build a Geographic Information System. Also, on this occasion, all the groups of researchers working in Valle Camonica are involved in the work. The state of conservation of the paintings is analysed with the collaboration of the *Istituto Superiore per la Conservazione e il Restauro*, while for the biodeterioration the *Università di Torino-Dipartimento di Scienze della vita e Biologia dei Sistemi* is involved.

Maria Giuseppina RUGGIERO,
Polo museale della Lombardia, Italy

Basile Walter, Bettini Annalisa,
Chiesa Sergio, Danesi
Alessandro, Favero Sergio,
Fedele Francesco, Fossati
Angelo, Liborio Carlo, Mapelli
Mari, Marretta Alberto, Medici
Paolo, Mottinelli Marco,
Poggiani Keller Raffaella, Priuli
Ausilio, Quirino Tommaso,
Roccardi Ada, Rondini Paolo,
Sansoni Umberto, Sechi
Antonella, Talarico Fabio, Torre
Mauro, Vaira Gian Claudio
contact email:
mariagiuseppina.ruggiero@beniculturali.it

Keywords: Valle Camonica,
UNESCO, conservation, rock
art, copper age, rock paintings

