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Conservation of the Côa Valley rock art outcrops: a question of urgency and priorities

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Introduction

The Côa Valley in north-eastern Portugal is one of the most significant prehistoric open-air rock art sites in the world, as its inscription in the World Heritage List demonstrates. The majority of engraved motifs (see Figures 1, 4, 5 & 6) has reliably been dated to the Upper Palaeolithic (Aubry & Sampaio 2008), although imagery from the Neolithic, Iron Age, historical and contemporary periods have also been identified (for an introduction to the Côa rock art see Baptista 1999 or Baptista & Fernandes 2007). Most of the outcrops which contain rock art motifs are located in an area of schist bedrock, scattered along both banks of the final 17km of the river Côa and positioned at the foot of sharply inclined hills (Figures 2, 3 & 4).



Figure 1. Canada do Inferno rock 1. The engraved motifs (all from the Upper Palaeolithic) are located on the higher part of the panel.
Click to enlarge.



Figure 2. Penascosa rock art site from the western bank of the Côa. Note the steepness of the slope.
Click to enlarge.

The conservation of rock art in caves is a field of expertise that has benefited from extensive research. Similarly, methods to monitor the evolution of weathering patterns in caves with rock art are also well developed. Unfortunately, the same does not apply to monitoring decay on outcrops with open-air rock art; nor is their conservation, especially when located in schist bedrock, well developed. Therefore, references pertaining to this situation do not abound within rock art studies. The Côa Valley will thus become a 'live' laboratory where pioneering but reliable direct conservation interventions on vertical schist outcrops can be developed and tested together with methods to monitor systematically the evolution of weathering processes. So far we have been developing a conservation programme for the Côa Valley rock art that set the bases for such monitoring and conservation work. Among the actions already implemented, we should highlight pilot conservation interventions in un-engraved outcrops with weathering and erosion dynamics at work similar to those affecting the engraved ones. These experiments were designed to test the applicability and aging of conservation materials and techniques that might be used in the future to confer stability to fragile rock art outcrops and panels, such as the ones depicted in Figures 4, 5 & 6 (for more detailed information see Fernandes 2007 & 2008).

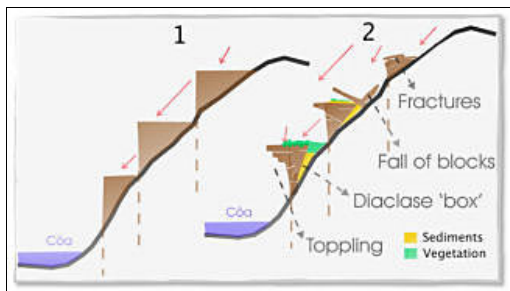


Figure 3. Schematic illustration showing the gravitationally-induced instability mechanisms at work on a given slope.
 Click to enlarge.

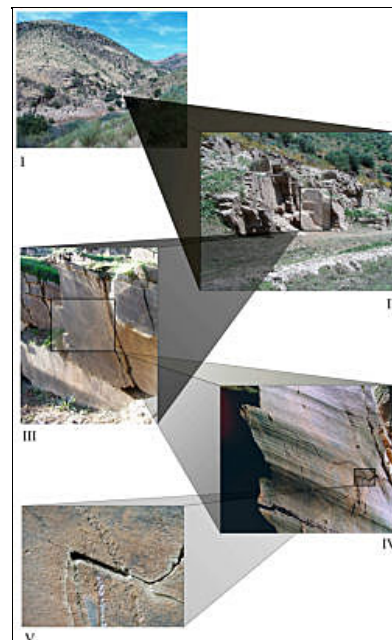


Figure 4. Illustration of the scales at which the different instability mechanisms operate. The example comes from the slope where the Ribeira de Piscos rock 1 is located (photograph IV in Baptista 1999: 120).
 Click to enlarge.

It is indeed vital to devise a suitable method to assess the state of conservation of any given engraved outcrop and to develop priorities for conservation interventions. The aim of the project presented here is to generate an urgency scale by thoroughly examining a sample of the most - in terms of conservation - representative engraved outcrops (Figure 5). Some of the issues to consider are weathering and erosion of outcrops with rock art, or slope gradient and aspect of the hills where these are located. Such phenomena as biological colonisation, rainwater percolation or chemical exchanges at surface level will also be analysed. The goals of our research is to create a tool kit adapted to determining the condition of outcrops and to identify systematically those in most urgent need of conservation. Interventions could then be prioritised within a total universe of 1000 outcrops with rock art (Baptista & Reis 2008; Mário Reis, pers. comm.).



Figure 5. Fish motif on the Penascosa rock panel 5A shown here as an example of the need to monitor and understand the weathering and erosion mechanisms at work and the necessity to consider direct conservation work in the most decayed rock art panels and outcrops (photograph in Baptista 1999: 104).
 Click to enlarge.

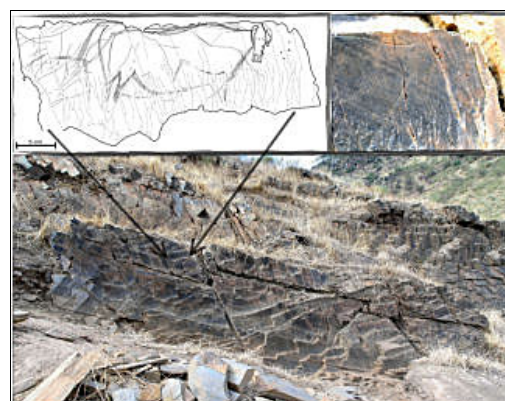


Figure 6. Ribeira de Piscos rock 24 portraying the outstanding significance of the Côa Valley rock art (drawing of the aurochs by Fernando Barbosa) and illustrating the conservation problems it faces.
 Click to enlarge.

If this invaluable heritage is to be entrusted in the best possible condition to future generations (Figure 6), it is essential to implement well-planned conservation work that makes the most of the limited available resources. Furthermore, it is reasonable to expect that the outcome of this project may also be of use to conservators and managers elsewhere, thus broadening existing knowledge of open-air rock art conservation.

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Unless otherwise stated, all illustrations are by the author.

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