



SSPI-CT-2003-501837

NOAH'S ARK

**GLOBAL CLIMATE CHANGE IMPACT ON BUILT HERITAGE AND
CULTURAL LANDSCAPES**

Instrument : STREP

Thematic Priority 1.2.1: POLICY-ORIENTED RESEARCH

Publishable executive summary

Period covered: from 01/06/2006 to 31/05/2007

Date of preparation: 12/07/2007

Start date of project: 1 June 2004

Duration: 36 months

Project coordinator name: Cristina Sabbioni
Project coordinator organisation: CNR-ISAC

Publishable executive summary

Summary description of project objectives

Problems to be solved

Climate change over the next 100 years is likely to have a range of direct and indirect effects on the natural and material environment, including the historic built environment. Important changes will include variations in temperature and precipitation, extreme climatic events, and alterations of soil conditions, groundwater and sea level.

Some processes of building decay will be accelerated or worsened by climate change, others will be delayed. While the impacts on individual processes can be described, it is difficult to assess the overall risk posed by climate change on the basis of currently available data. Linking global changes to the response of material surfaces of archaeological and historic structures remains a challenge.

Scientific Objectives and Approach

- To determine the meteorological parameters and changes most critical to the built cultural heritage.
- To research, predict and describe the effects of climate change on Europe's built cultural heritage over the next 100 years.
- To develop mitigation and adaptation strategies for historic buildings, sites, monuments and materials that are likely to be worst affected by climate change effects and associated disasters.
- To provide electronic information sources and tools, including web-based Climate Risk Maps and a Vulnerability Atlas for heritage managers to assess the threats of climate change in order to visualize the built heritage and cultural landscape under future climate scenarios and model the effects of different adaptation strategies.
- To advise policy-makers and legislators through the project's Policy Advisory Panel.

Contractors involved

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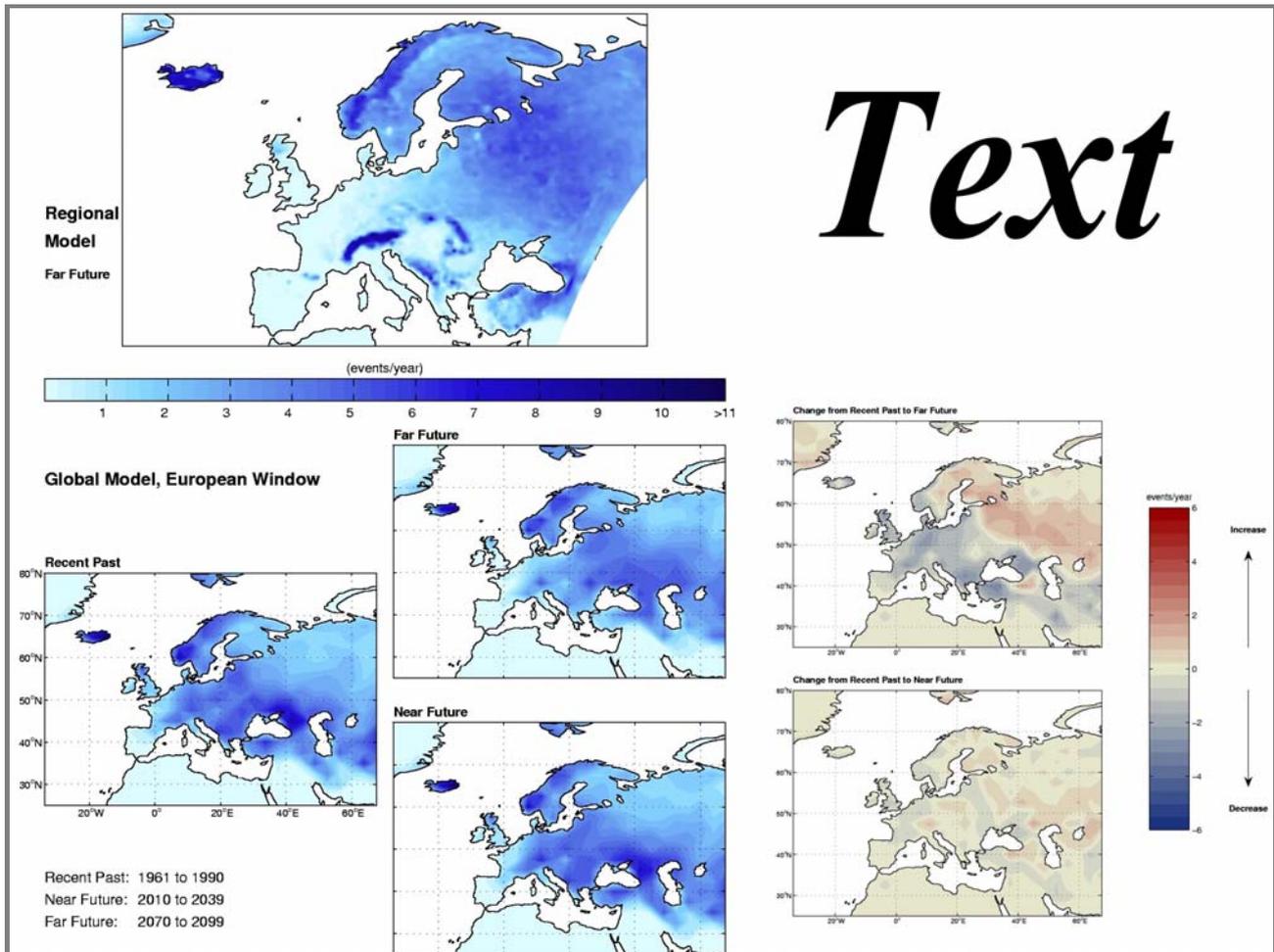
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Work performed, results achieved so far and expected end results

Almost all the work performed has focused on the representation of the results obtained during the first two years of activity in maps showing areas with increased/decreased risk of deterioration of materials in different European regions. All the maps produced, illustrating scenarios from the recent past to the late 21st century, have been included in a Vulnerability Atlas, which thus presents climate data in a way that is relevant to cultural heritage, and develops meteorological information in terms of changes in damage inflicted and potential risks to heritage.

Furthermore, the research carried out by all Partners has been collected and structured under four main themes – Rainwater and drainage infrastructure, Effects on structures, Effects on materials, Indoor-outdoor interactions for Guidelines preparation. The Guidelines offer adaptation strategies for cultural heritage management in dealing with climate change. Such adaptation strategies should enable heritage stakeholders, owners and curators of historic buildings and collections, public policy-makers and national heritage organizations to contemplate future climate change pressures.



Example of a page of the Vulnerability Atlas. The upper left hand page shows the far future (2070-2099) map produced with the regional model, while the lower section presents the maps for recent past (1961-1990), near future (2010-2030) and far future (2070-2099) produced with the general model. The right hand page shows a text and the difference maps.

Impact and dissemination of knowledge

During this year the Noah's Ark project has confirmed the success attained in the previous two years in attracting the interest of scientists and researchers working in the field of cultural heritage protection and conservation. In particular, the two international meetings organized in London (Climate change vulnerability: Maps and guidance for cultural heritage protection, 18-19 January 2007) and Rome (Climate change and protection of cultural heritage in Europe: research, evidence and policy, 30 May 2007) attracted the attention of numerous participants, press and media. Finally, the project results have been a focus of interest at numerous European and international conferences, workshops, graduate/post-graduate seminars and courses, presentations and science cafés addressing the general public.

Project logo



Project public website

The project website has been designed and set up to disseminate the pioneering issues at the basis of Noah's Ark Project, and to underpin public awareness concerning the threat of the effects of climate change on the built cultural heritage.

It was opened to the public on 15 July 2004 : <http://noahsark.isac.cnr.it/>

