

ICOMOS Climate Change Initiatives: A Cooperative Project with International Committees

Global Climate Change is a topic being discussed in a major way at the international level, involving governments, development banks, environmentalists, businesses, etc. A British study released on 30 October 2006 “conclude[d] that rapid and substantial spending to combat global warming is needed to avert a catastrophic reduction in worldwide productivity on the scale of the Great Depression that could devastate food sources, cause widespread deaths and turn hundreds of millions of people into refugees” (Kim Murphy, “Warming Forecast: Economic Disaster”, *San Francisco Chronicle*, October 31, 2006, page A1). The field of natural heritage has been an important component of these discussions and yet cultural heritage issues have been woefully underrepresented.

In September 2006 in Edinburgh, ICOMOS’s Scientific Council voted to accept Global Climate Change (GCC) as the topic for interdisciplinary scientific research. A brief was prepared in November 2006 as a document presenting the Scientific Council’s strategy and program to contribute to the work of ICOMOS in relation to the theme of Global Climate Change. The Scientific Council and its membership of International Scientific Committees of ICOMOS have developed this initiative to bring together the various professional and scientific fields of the organization to bear on this increasingly threatening subject. It is being implemented by the Scientific Council in coordination with other initiatives of ICOMOS or its National Committees, particularly in the context of Resolution #35 of the 15th General Assembly adopted in Xi’an (China) in October 2005, and/or in support of ICOMOS’s contribution to research undertaken by the World Heritage Center relative to climate change and World Heritage, in accordance with the decisions of the World Heritage Committee.

Background

Among the international cultural heritage community, Global Climate Change was first suggested as a topic for interdisciplinary research at the International Scientific Committee (ISC) retreat in Bergen, Norway, in September 2004. During ICOMOS’s 15th General Assembly held in Xi’an, China in October 2005, Resolution 35 on Climate Change was unanimously adopted. During the Scientific Council meeting in Rome in June 2006, GCC was adopted as an Inter-ISC scientific theme by the International Committee on Risk Preparedness (ICORP), the International Polar Heritage Committee (IPHC), and the International Scientific Committee for Earthen Architectural Heritage (ISCEAH). It was agreed that a preliminary report would be presented at the Scientific Council meeting in Edinburgh in September 2006. This led to its adoption by the Scientific Council.

The World Heritage Committee has also shown interest in this topic. During the Committee’s 29th session, the World Heritage Center (WHC) was asked to convene a working group of experts to explore the impacts of climate change on World Heritage (Decision 29 COM 7B.a). As a result, a special expert meeting of the World Heritage Convention (*World Heritage and Climate Change*) was convened in Paris at UNESCO’s headquarters on 16-17 March 2006. The meeting, supported by the government of the United

Kingdom and the United Nations Foundation, was held between the World Heritage Committee, World Heritage Center, the Advisory Bodies (ICOMOS, IUCN and ICCROM), and experts from around the world. This led to the development of a document, “Predicting and Managing the Effects of Climate Change on World Heritage” (WHC-06/30.COM/7.1, available on the web at <http://whc.unesco.org/uploads/news/documents/news-262-1.doc>) which was issued at the 30th Session of the World Heritage Committee in Vilnius, Lithuania in July 2006, as well as the adoption of Decision 30 COM 7.1.

In early November 2006, the United Nations Environment Program (UNEP) hosted the 12th Conference of the Parties to the UN Framework Convention on Climate Change and the 2nd Meeting of the Parties to the Kyoto Protocol in Nairobi, Kenya. UNEP and researchers from the Stockholm Environment Institute have recently issued a report, *The Atlas of Climate Change: Mapping the World’s Greatest Challenge* (available for purchase through www.earthscan.co.uk and www.ucpress.edu). Achim Steiner, UN Under-Secretary-General and UNEP Executive Director, stated that “We must ... use our intelligence and scientific know-how to assist managers of culturally important sites like buildings and archaeological finds. Losses here as a result of climate change may impact on the livelihoods of local people and, especially in developing countries, add to poverty...” Koichiro Matsuura, Director-General of UNESCO, further said in reference to World Heritage Sites, “Protecting and ensuring the sustainable management of these sites has, therefore, become an intergovernmental priority of the highest order” (“National Parks, Ancient Artifacts, Monuments and Barrier Reefs at Risk from Global Climate Change”, UNEP Press Release, 7 November 2006). UNEP’s climate change website for the UN Climate Change Conference is <http://www.unep.org/themes/climatechange/UNFCCC/>.

UNEP and the World Meteorological Organization established in 1988 the Intergovernmental Panel on Climate Change (IPCC). Its role is to assess on a comprehensive, objective, open and transparent basis the scientific, technical and socio-economic information relevant to understanding the risk of human-induced climate change, its potential impacts, and options for adaptation and mitigation. IPCC does not carry out research nor does it monitor climate-related data or other relative parameters. It bases its assessment mainly on peer-reviewed published scientific and technical literature. IPCC publishes periodic assessments of the nature and impact of climate change. The Third Assessment was issued in 2001. The Fourth Assessment is being published in successive parts during 2007. All its publications can be found on the IPCC website (<http://www.ipcc.ch/>).

The Scientific Council Initiative

From the preliminary GCC report prepared by IPHC and ISCEAH and submitted to the Scientific Council at the Edinburgh Scientific Council meeting in September 2006, as well as from the WHC report, it is obvious that there are and will be serious ramifications of GCC to cultural heritage. The WHC report also confirms that

IUCN is way ahead of ICOMOS in terms of its research on this topic. This is most likely a result of the fact that the environmentalists have been studying the effects of Global Climate Change on natural heritage for several decades. The WHC report, however, identifies key areas of concern for GCC's effect on cultural heritage. These include:

- a) The uncertain state of conservation for sensitive archaeological materials preserved underground once the equilibrium of burial is altered due to changes in the hydrological, chemical and biological processes of the soil.
- b) Increases in soil moisture resulting in greater salt mobilization having damaging effects on historic buildings, which tend to be less isolated from the ground and to be constructed of more porous materials than their modern equivalents.
- c) Migration of pests in altitudes and latitudes subjecting timber and organic construction materials to increased biological infestation.
- d) Increased flooding causing deterioration to materials that cannot sustain prolonged immersion and potentially encouraging damaging microorganism growth (mould), in addition to the risks posed by the eroding effects of rapidly flowing water.
- e) Structural damage caused by increased strength of storms and wind gusts.
- f) Moveable heritage subjected to higher RH, temperatures and UV exposure.
- g) Implications to societal systems and resulting population migrations due to environmental conditions, like drought, which are no longer conducive to sustaining traditional ways of life (agriculture, human health, and infrastructure). This would amount to a loss of local populations who effectively sustain and maintain various cultural sites (WHC-06/30.COM/7.1, pages 29-32).

In addition to this list, we add:

- h) Economic impacts due to loss of cultural tourism. Conversely, impacts to fragile materials due to increase of cultural tourism at previously less accessible sites.
- i) Resulting losses to intangible heritage, cultural landscapes, vernacular construction technologies, and sustainable construction and repair practices.
- j) Increase of freeze/thaw cycles and their effect on porous building materials.
- k) Differential settlement causing structural damage due to changes in soil compaction through dewatering or increase in ground water levels.

Goals

As a first step, the goals of the Scientific Council initiative are for the International Committees to perform the research necessary to produce a report of case studies linked to the scientific data on GCC. The results are published herein as a special "section" of *Heritage at Risk*.

Our next step is to organize a scientific symposium at the Advisory Committee meeting, scheduled for the fall of 2007 in Pretoria, South Africa, in which the focus will be to propose conclusions and recommendations for adaptation to the effects of GCC in reference to cultural heritage sites. At this point, initiatives for creating and implementing Inter-ISC cooperative adaptation projects will also be proposed and adopted.

Following this, a second meeting may be organized for the late spring of 2008 bringing together interested parties and reviewing

the preliminary results of the Inter-ISC cooperative adaptation projects and strategies.

Research

Each International Committee and interested National Committee designated a representative who joined the Inter-ISC Global Climate Change (GCC) working group and cooperated on the reports. The GCC working group began researching GCC's effects on cultural heritage in their particular area of expertise or geographical location.

International Committees and interested National Committees were encouraged to interact with relevant national and international organizations studying GCC. (Several universities have programs studying GCC including the Center for Sustainable Heritage at the University College London, and Yale, Michigan State and Duke University in the US. The International Committee of the Blue Shield is an organization which also comes to mind.) Scientific data for GCC exists but has seldom been collated and interpreted towards its effects on cultural heritage. Anecdotal evidence needs to be qualified by scientific climatic data, if we are in any way to influence decision makers. This data is a product of long-term monitoring.

Although case studies cited are not specifically about World Heritage Sites, the final product of the Inter-ISC Cooperative Project produces material that is useful to and informs the research of the WHC.

Report Structure

Generally, the reports were structured as follows. Sites were identified and designation status indicated (WH site, nationally or locally designated, etc). Following this a description of the general conditions of the place was included. The reports then described the anecdotal evidence, physical evidence, and meteorological data. Risk preparedness strategies, if they are in place, are evaluated.

Some of the questions reports sought to answer are:

- What is the current situation?
- What is the predicted future climate change?
- How rapidly is it changing?
- What are additional causes (other than general climate change), like pollution, lack of risk preparedness and adaptation, etc?
- What are the consequences of climate change impact in the short, medium and longer term?
- Is the site being recorded either for posterity or to monitor change?
- What is the proposed adaptation remedy (if any)?
- What are the site managers actually doing to cope with the predicted impacts?
- What else needs to be done and when?

In addition, reports were asked to be mindful of differences between Kyoto Protocol non-signatory (Australia, USA, India, China, etc) and signatory countries. What are signatory countries doing differently to prepare for the effects of climate change on their cultural heritage sites and what are the results of these actions? From these case studies, can strategies be developed to lobby non-signatory countries?

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