



ministère de la Culture  
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et de la Recherche

Institut national  
de recherches  
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préventives



## On climates and humans Climatology, archaeology and history

International Conference organised by Météo-France, Cité des sciences et de l'industrie, Inrap



How has climate altered the shape of the continents through the ages? In what ways have climatic changes contributed to population dispersal across the globe? Since when has the Sahara become a desert? By what mechanisms did ancient civilisations adapt to climatic crises? How did the Anasazis react to the drying-up of the American west? How was agriculture possible in Greenland in early medieval times? What impact had the 'small glacial optimum' on Europe after the year 1000? What can we learn on climate from the dates of the grape harvests or the retreat of the glaciers? What lessons to draw from the archaeology of climate and its recent history?



Since the very formation of the earth, its climate has been constantly changing. These changes have affected the water cycle, the spreads of oceans and ice sheets, as well as the geomorphology and vegetation cover, with multiple consequences for the biosphere as a whole. These climatic changes have had their impact on biodiversity and its evolution, and on the health and movements of human populations. Both ancient and modern humans have had to adapt, with varying degrees of success, to these fluctuations.

Bringing together climatologists, archaeologists, historians and other specialists, the aim of this international colloquium is to present the effects of these climatic changes on human societies at a global scale, and at key moments of our prehistory and history, from the earliest hominids to our own times. The study of ancient climates and palaeoenvironments, both marine and terrestrial, combined with archaeology and historical records, sheds light on the influence of climates on both peoples and their milieu. Ancient societies may have been more dependent on climatic conditions than recent ones, but it is also that case that human actions have increasingly modified climate itself. Historical and archaeological perspectives, including an understanding of the causes and consequences of climatic changes in the past and in the present, can provide us with invaluable information and insights for addressing the climatic challenges awaiting us in the future.



**THURSDAY, NOVEMBER 19**

**Climatic cycles and the peopling of Earth**

What are the relations between the environment and the geographic spread of early humans? How have climatic changes influenced the peopling of the earth? Is the disappearance of the Neanderthals due to climatic upheavals at the end of the glacial cycle?

**Chair : Hélène Roche, CNRS**

**2 : 30**

**Opening**

Claudie Haigneré, Cité des sciences et de l'industrie

**Introduction**

Yves Coppens, Collège de France

**3 : 00**

**Major climatic data evidences at the end of Tertiary**

Pierre Sepulchre, CNRS

**3 : 30**

**The main climatic fluctuations over the last 800 000 years**

Valérie Delmotte-Masson, CNRS

**4 : 00**

**Origins and Environments of the first hominids**

Michel Brunet, Collège de France

**4 : 30**

**Archaeological and palaeoenvironmental data on Dmanisi site**

David Lordkipanidzé, Georgina National Museum

**5 : 00**

**Go North ! The conquest of high latitudes by Homo erectus and Neanderthal Men**

Pascal Depaepe, Inrap

**5 : 30**

**Rapid climatic changes of the last glacial cycle and the end of the Neanderthals**

par María Fernanda Sánchez Goñi, Ecole pratique des hautes études

**6 : 00**

**Debate**

**FRIDAY, NOVEMBER 20**

**From last hunter-gatherers to first Neolithic farmers**

What was the impact of climatic changes on early complex societies? How did the civilizations of antiquity adapt to climatic crises? When did the Sahara become desert?

**Chair : Stéphanie Thiébault, CNRS**

**9 : 30**

**The Impact of the last glacial maximum on european populations and their preys**

Francesco d'Errico, CNRS

**10 : 00**

**Landes of Gascogne: périglaciaire desert and cultural border during the Paleolithic**

Pascal Bertran, Inrap

**10 : 30**

**Variations in humidity and human settlement in the Dourges swamp during the Late glacial**

Laurent Deschodt, Inrap

**11 : 00**

**Cultural responses to rapid climatic changes during the Holocene in the Eastern Mediterranean**

Bernhard Weninger, Köln University

**11 : 30**

**Climatic variations in central Europe from the Neolithic to the Bronze Age: from the history of climate to the history of societies**

Michel Magny, CNRS

**12 : 00**

**The end of the green Sahara**

Stephan Kroepelin, Köln University

**12h30**

**Debate**

### **From the Bronze Age to Middle Ages**

What were the impacts of climate in Mesopotamia and the Mediterranean in antiquity? What role has the climate played in the colonization of Greenland? What was its influence during the first millennium in the American west?

**Chair : Jean-Paul Jacob, Inrap**

**2 : 30**

**Humans and climatic events from the end of the last glaciation to Antiquity in the southern Alps**

Olivier Sivan, Inrap

**3 : 00**

**The role of dry cycles during abrupt cultural transitions in Anatolia and upper Mesopotamia (5<sup>th</sup> millennium- 3<sup>rd</sup> millennium BC)**

Catherine Kuzucuoglu, CNRS

**3 :30**

**The Climatic crisis around 850 BC**

Bas van Geel, Amsterdam University

**4 : 00**

**Roman economic development and the environmental crisis**

Jean-Paul Bravard, Lyon II and Jean-François Berger, CNRS

**4 : 30**

**The monsoon variations and Chinese culture history over the past 1800 years**

Hai Cheng, Minnesota University

**5 : 00**

**At the margins of agriculture: the medieval settlement of Greenland**

Vincent Bichet and Émilie Gauthier, Besançon University

**5 : 30**

**The role of climate change in culture change and migration: the Pueblo (south western USA)**

Timothy A. Kohler, Chicago University

**6 : 00**

**Debate**

**SATURDAY NOVEMBER 21**

**The medieval warm period and the Little Ice Age in Europe**

Between the year thousand and the renaissance, what was the impact of the 'medieval warm period' in Europe? What can we learn from the dates of grape picking, tree ring studies, glaciers melting, and the first series of temperature recording?

**Chair : Pascal Yiou, CEA**

**9 :30**

**General perspectives over climate**

Emmanuel Le Roy Ladurie, Collège de France

**10 : 00**

**Summer temperatures of the past 500 years as inferred from the dates of grape harvesting in Bourgogne and the isotopic composition of the oaks of Fontainebleau**

Valérie Daux, CEA

**10 : 30**

**Temperatures series in Île-de-France from 1676 to today**

Daniel Rousseau, Météo-France

**11 : 00**

**The Little Ice Age glacier history of the central and western Alps by pictorial documents**

Heinz J. Zumbühl, Bern University

**11h30**

**Neural networks and historical glacier fluctuations in the western Alps**

Samuel Nussbaumer, Bern University

**12 : 00**

**Variations in temperature and droughts in the Mediterranean over the last millennium**

Joël Guiot, CNRS

**12 : 30**

**Debate**

**Climate warming and its consequences**

Human activities have in turn modified the climate and brought about warming whose impact is increasingly felt . can a better understanding of the climatic changes of the past help us face these new challenges?

**Chair : Pascale Delécluse, Météo-France**

**2 : 30**

**Volcanic eruptions and their climatic impacts, from the 18th century to nowadays**

Helena Xoplaki, Bern University

**3 : 00**

**Music of the Spheres: Climate of the 20<sup>th</sup> century**

Yves M. Tourre, Météo-France

**3: 30**

**The climate of the last millennium**

Michael E. Mann, Pennsylvanny University

**4 : 00**

**Present global warming: Oceans, Ice, Sea Level**

Anny Cazenave, CNRS

**4 : 30**

**The socio-economic impacts of climatic change**

Stéphane Hallegatte, Météo-France

**5 : 00**

**Climatic changes and public health**

Jean-Pierre Besancenot, CNRS

**5 : 30**

**Political issues before Copenhagen's summit**

par Brice Lalonde, ambassador in charge of global warming negotiations

**6 :00**

**Debate**

Free admission, limited seating: [www.inrap.fr](http://www.inrap.fr) - Online registration on September 20: [www.inrap.fr](http://www.inrap.fr)