

PAGES

Past Global Changes

(PAGES) emerged in the context of a paleo-community traditionally divided along continental-terrestrial, marine and polar lines, as well as in other ways reflecting the broad range of specialisms and environmental archives employed. Thus, one of the most important initial activities of PAGES has been the development of a coherent scientific plan that brought together the marine, terrestrial and polar research communities.

One of the most vital roles of PAGES so far has been to set research agendas and thereby shift, sometimes even transform, the perceptions and priorities of the scientific community with whom it works. This process began with the first statements about Priorities and Time Streams and has continued, reinforced by each successive PAGES publication. In this way, PAGES has taken the lead in achieving the first true integration of the research agendas of terrestrial, marine and polar paleoscientists.

At the core of the scientific community whose interests focus on the environmental record of the last 200,000 or 2000 years are a wide variety of researchers who might be broadly regarded as 'Quaternary Scientists'. Creating within that wider field a series of criteria and foci that reflect the PAGES agenda, and seeing the agenda so defined become increasingly recognized and explicitly referred to in the mission statements and research priorities of both national and international funding agencies, is one of the major achievements of PAGES. Beyond the group of scientists who might feel reasonably comfortable under the 'banner' of Quaternary research, are a vast range of environmental scientists of almost every kind whose research orientation has also been changed by PAGES, especially through the recognition given by funding councils to the value of its emerging research agenda.

Project Organization

FOCUS I: Global Paleoclimate and Environmental Variability

PANASH - Paleoclimates of the Northern and Southern Hemispheres; Pole-Equator Pole (PEP) transects

PEP-1; The Americas

PEP-2; Austral-Asian

PEP-3; Afro-European

The Oceans

PAGES-Climate Variability and Predictability (CLIVAR) Interactions

FOCUS II: Paleoclimate and Environmental Variability in Polar Regions

Arctic Programmes

Antarctic Programme

FOCUS III: Human Interactions in Past Environmental Changes

Human Impacts on Fluvial Systems

Human Impacts on Terrestrial Ecosystem

FOCUS IV: Climate System Sensitivity and Modelling

Climate Forcing and Feedbacks

Climate Model-Data Intercomparisons

FOCUS V: Cross-Project Analytical and Interpretive Activities

Chronological Advances

Development of New Proxies

International Paleo-Data System

Regional, Educational, and Infrastructure Efforts

1997 Activities of CAPE

CAPE (Circum-Arctic PaleoEnvironments), is a project within PAGES with a central mandate to link international and national Arctic paleo-programs, and to provide a forum for regional syntheses and modeling, particularly those tasks that cannot be easily achieved by individual investigators or even regionally focused research teams. The primary emphasis of CAPE is on paleoenvironmental reconstructions covering the last 250,000 years, concentrating on terrestrial environments and adjacent continental margins. The first task was to define the spatial and temporal patterns of environmental change in the Arctic during the Holocene, for which a rich and diverse set of proxy data are available in a continuous, or near-continuous time series.

The first meeting of the CAPE Holocene Project was held in Lammi, Finland on April 4-8, 1997. Nearly 40 scientists from Canada, Denmark, Finland, Germany, Iceland, Norway, Russia, Sweden, United Kingdom, and the United States, who are currently active in Arctic research attended the meeting. The group evaluated the spatial patterns of vegetation reconstructions and inferred summer temperatures in 1ka time slices, concentrating on the 10ka and 6 ka time slices. For these times GCM summer temperature anomalies and reconstructed vegetation from the NCAR GENESIS-EVE and BIOME 6000 models are available for comparison. Marine reconstructions of SST were begun, but were hampered by the limited distribution of well-dated cores, the diversity of the proxies used, and the difficulty in differentiating polar water masses outside the area of Atlantic water influence. Color maps of the 6ka and 10 ka GCM temperature anomalies were generated, on which the semi-quantitative estimates of temperature from nearly 400 individual sites were superimposed in a color- and size coded scheme corresponding to the sign and magnitude of change reconstructed from the proxy data. Strong spatial patterns emerged that were by in large concordant with the GCM simulations.

Two new CAPE projects will be initiated within the next 18 months: (1) a high-resolution synthesis of the last 1-2 ka, addressing seasonal to decadal climate change, and (2) synthesis of the last glacial maximum, ca. 25-10ka. For more detailed information, please visit the CAPE www site at www.ngdc.noaa.gov/paleo/cape/TOC

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