

Progress Report, Applied Research Center for Paleoclimatology

April 15, 2010

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Summary

In 2009-2010 we made significant progress expanding the archive and improving data quality, focusing efforts on two areas, 'last millennium reconstructions' and 'abrupt climate change'. In March 2009 we produced the Paleo Climate Network v1.0, providing users with the highest-quality, most up-to-date set of paleoclimate reconstructions ever assembled. The eventual goal is to blend this product with instrumental data in order to 1) document trends in temperature across two millennia, and 2) describe the natural decadal variability in temperature from different regions. Characterization of uncertainty is an important joint product. On abrupt climate change, we worked with an NSF-funded group of investigators to produce a data archive of 50 paleoclimate reconstructions. The archive is still being expanded and developed, and will ultimately provide the community with a multi-proxy array of reconstructions for comparison with transient climate model simulations of the past 21,000 years

Background

The Applied Research Center for Paleoclimatology is operated by the Paleoclimatology Branch of NOAA's National Climatic Data Center. In addition to operating the Applied Research Center for Paleoclimatology, the Paleoclimatology Branch also operates the World Data Center for Paleoclimatology. The activities are collaborative and synergistic. Together, they provide the world's largest archive of climate data for the pre-instrumental period. The archive consists of over 10,000 sites, spanning time from the present backwards 65 million years. Paleo data come from proxies ranging from ice cores, tree rings, corals, ocean and lake sediments, borehole temperatures, and fossil groundwater. Cave speleothems are the most rapidly growing proxy type, and are notable for the high resolution (annual to decadal) and accurate dating.

Customers/Users

The scientific data sets and information products are distributed via the Internet free of charge (www.ncdc.noaa.gov/paleo). Four users are identified. In order of impact, they are paleoclimate experts, non-paleo climate scientists, policy-makers and NGO representatives, and education/interested public. In terms of volume (web hits, data provided, individuals served), web statistics and other measures indicate that education/interested public is the largest category.

Progress on Transition to Operational Center

These data are already *transitioned*, in the sense that they are archived at a World Data Center, distributed by NOAA, with long-term stewardship identified. All datasets are described by FGDC metadata, and archived in ASCII format. Effort is underway to populate the NOAA Climate Services Data Library with catalog-level information on ARC datasets.