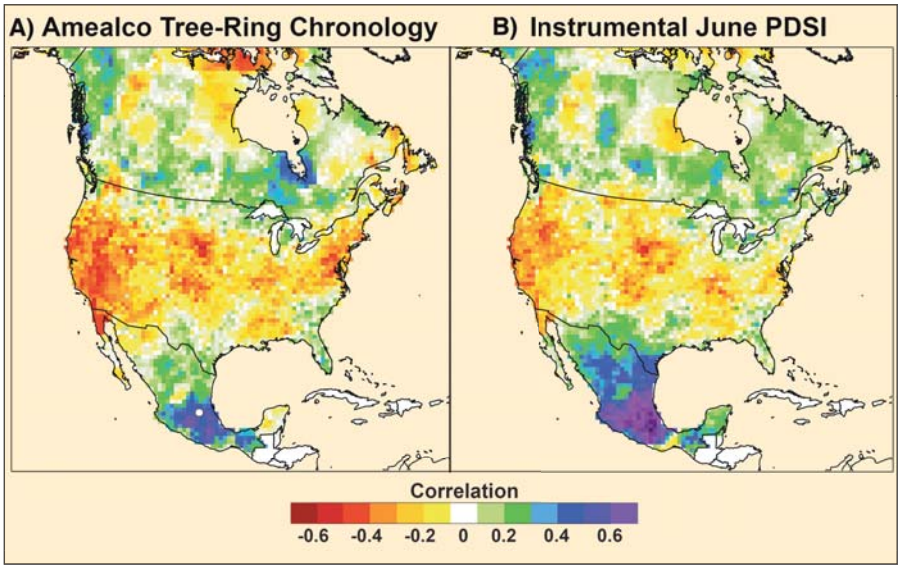

*Figure 1: Central Mexico June Palmer Drought Severity Index (PDSI) correlated across North America, 1950-2003 **A**) Reconstructed from tree rings, **B**) Observed. Figure from Stahle et al. (Climate Dynamics, in review), courtesy of Dave Stahle.*

longer records in western North America compared to eastern areas.

2) Other proxy records from lakes (e.g., isotopes, varves, chironomids, pollen, charcoal) are available for a number of sub-continental areas, and speleothem proxy records of precipitation are available for selected areas, such as the US Southwest. These records will generally reflect climate drivers for at least the last 2000 years, but with lower temporal resolution (generally) and with more limited spatial coverage than tree ring records. It was agreed that the temporal resolution of the proxy records needed for this activity would be on the order of at least 50 years, with minimum record lengths of 500 years.

3) A first step will be to develop an integrated inventory and archive of paleoclimate records for possible use in the NAm2k climate reconstruction. The goal is also to integrate the available data sets and reconstruction fields with those of the Arctic2k WG. A recommendation was made for the NOAA World Data Center for Paleoclimatology in Boulder, Colorado to become the central repository of data sets used in the NAm2k effort. The metadata could be mirrored with the PAGES 2k metadata archive on the PAGES website section for NAm2k.

4) A sub-working group composed of Scott Anderson, Henry Diaz, Darrell Kaufman, Brian Luckman, Dave Meko, Greg Pedersen, Dave Stahle, Valerie Trouet, Andre Viau and Gene Wahl will work toward the goal of assimilating (blending) the different input data sources and exploring mapping tools.

An analysis and synthesis workshop for the tree-ring chapter of the NAm2k Working Group is being organized, tentatively titled "North American Dendroclimatic Data: Compilation, Characterization, and Spatiotemporal Analysis" led by Valerie Trouet.

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2nd International Symposium "Reconstructing climate variations in South America and the Antarctic Peninsula over the last 2000 years"

Valdivia, Chile, 27-30 October 2010

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The 2nd International Symposium "Reconstructing Climate Variations in South America and the Antarctic Peninsula over the last 2000 years" was part of the PAGES research initiative LOTRED-SA (Long-Term climate REconstruction and Dynamics of South America). This symposium was organized by the Centro de Estudios Científicos (CECS) and the School of Forestry and Natural Resources (Universidad Austral de Chile). Nearly 200 scientists from 15 countries (mainly from Chile, Argentina, Brazil, Colombia, Switzerland and USA) came together for oral and poster presentations, mainly related to new high-resolution paleoclimate studies in South America and the Antarctic Peninsula. Prior to the Symposium, a graduate international course "South American Climatology and Quantitative High-Resolution Climate Reconstructions in Paleoecology" took place (see *PAGES news* 19(1) for a report). The 2nd International Symposium was the follow-up of the 2006 Malargüe-PAGES Meeting in Argentina, which had led to a special issue of *Palaeogeography, Palaeoclimatology, Palaeoecology* in 2009, titled Regional high-resolution multiproxy climate reconstruction for South America: state of the art and perspectives.

The goal of the 2010 meeting was to gather experts from different fields in climate dynamics, paleoclimatology (proxy data and models) and glaciology, in order to review recent discoveries, discuss new data sets, evaluate the interpretation of proxy data, and search for new calibration and quantification techniques of proxy data sets in South America and the Antarctic Peninsula. The long-term goal of this collaborative meeting was to produce a more comprehensive understanding of

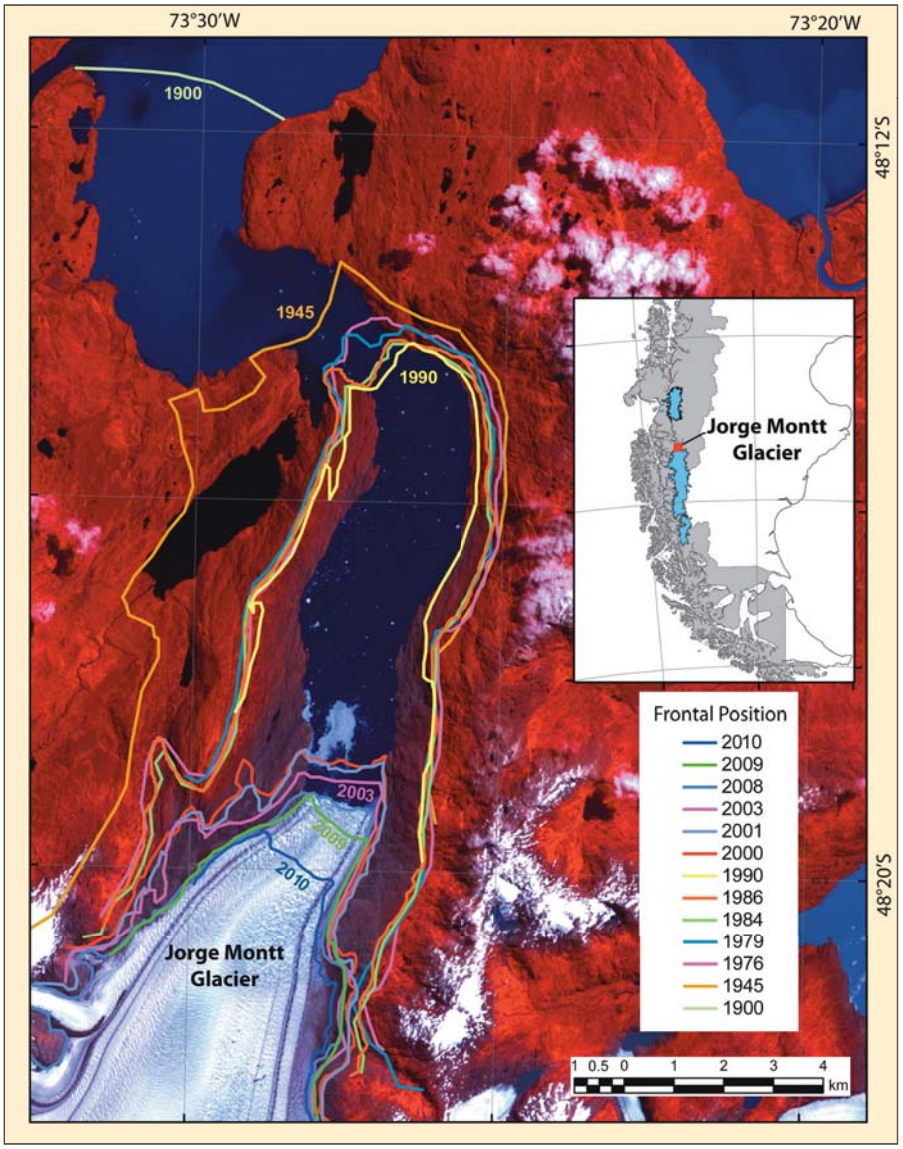

Figure 1: Frontal variations of Jorge Montt glacier as determined by historical records, satellite imagery and aerial photographs. This is one of the biggest tidewater calving glaciers of the South Patagonian Icefield where a maximum frontal retreat of 18 km between 1900 and 2010 was documented (Rivera et al., 2010).

regional forced and unforced climate variability, as well as environmental changes during the past millennia. The main idea is to improve the production of gridded data sets of climate variables from high-resolution multi-proxy time series.

This conference brought together senior and young scientists working on tree rings, glacier records, lake and marine sediments, geomorphology, ice cores, historical documents, speleothems and other paleoclimate archives. All these experts were interested in paleoclimatic reconstructions for different regions of tropical, extra-tropical and sub-Antarctic South America and the Antarctic Peninsula. The meeting also greatly benefited from the participation of climatologists working on modeling of the present climate of South America, providing a dynamically meaningful and physically plausible framework for the interpretation of past environmental records. One of the most exciting outcomes of this conference was the significant assistance it provided to young scientists and the great enthusiasm demonstrated by all in attendance.

At present we are working on a Special Issue of *Climate of the Past*, which will include the most outstanding contributions presented in the symposium. This special issue will provide an updated and comprehensive outline of ongoing research on this topic.

Guidelines for collaboration and contributions to LOTRED-SA are available at www.pages-igbp.org/workinggroups/lotred-sa or by contacting one of the coordinators: Ricardo Villalba (ricardo@lab.cricyt.edu.ar), Martin Grosjean (grosjean@giub.unibe.ch). For detailed information about this Symposium, and photos and videos of the conference presentations, please visit www.cecs.cl/pages2010/.

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Rivera, A., Bravo, C. and Sylwester, D., 2010: 20th century strong retreat of glaciar Jorge Montt unburied more than 250 year old trees destroyed during the LIttle Ice Age, In: *Reconstructing Climate Variations in South America and the Antarctic Peninsula over the last 2000 years*, II International Symposium, Abstract # 191, Valdivia, Chile.

Bayesian hierarchical models for climate field reconstruction

Lamont Doherty Earth Observatory of Columbia University, USA, 8-11 February 2011

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Bayesian Hierarchical Models (BHMs) have emerged as a powerful new method for inferring spatially complete climate fields from sparse and noisy proxy time series. BHMs have a potential theoretical advantage over "traditional" linear subspace-based (EOF) methods for inferring climate fields, because the Bayesian "posterior" distribution of the reconstructed climate, once estimated, can be directly sampled to yield complete uncertainty estimates of the reconstructions, along with a point estimate of the expected value. The Bayesian estimates of the climate field encapsulate the uncertainties involved in the estimation of all model parameters, which cannot readily be done using traditional linear subspace methods.

A primary goal of the workshop was to bring together reconstruction experts who currently employ reduced-space multivariate regression models for climate field reconstruction, and provide an in-depth exposure to the theory and applica-