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This circular is sent to all 2k mailing lists subscribers. Feel free to forward it to interested colleagues with a link to the [PAGES 2k list](#) where they can sign up to receive future circulars. Also let Lucien know if you wish to be removed from the 2k mailing list.

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## 1 – FIRST PAGES 2K NETWORK-WIDE TELECONFERENCE

### 1.1 Overview

Two teleconferences with overlapping agendas were held on 9 and 13 March 2015. More than 80 people logged on to listen and participate in project planning discussions. Recordings of the teleconference ([Part 1](#) and [Part 2](#)), meeting notes ([Part 1](#) and [Part 2](#)) and the chat-room discussion text ([Part 1](#) and [Part 2](#)) are available at the [PAGES website](#). The history of the PAGES 2k project – how we arrived at this point – is documented in the previous 11 circulars, all of which are available on the [PAGES 2k website](#).

### 1.2 Plans by 2k Regional Groups for analyzing hydroclimate change

**Africa (Brian Chase and David Nash):** Compilation of hydroclimate datasets is nearly complete (~30 records); these are to be considered collectively in a paper to be submitted in April/May 2015. Following discussions amongst Africa 2k members at the AfQUA conference in Cape Town, a significant new analysis is planned involving these datasets.

**Antarctic (Barbara Stenni):** Hydroclimate analyses will focus on snow accumulation rates (paper is planned at the end of 2016). About 70 records have been compiled, most less than 500 years long, with annual resolution only at some continental margin sites.

**Arctic (Jostein Bakke and Hans Linderholm):** A group meeting will be held at [EGU in April](#) to discuss Phase 2. A paper is planned to define hydroclimate in the Arctic. Assembly of multi-proxy data is ongoing. Drought atlas has been published for Fennoscandia. Currently testing tree-ring data for the whole region, but the focus will be on sub-regional reconstructions.

**Asia (Zhixin Hao):** Regional data collection is ongoing in China, India, Russia and Thailand. Most (70%) records are about 300 years long. Update: Plans for hydroclimate analyses were discussed two weeks ago at the [Asia2K workshop in Japan](#). The group will collect monsoon precipitation records and use 2-3 reconstruction methods to produce precipitation field reconstructions. Those will be compared to the soon to be published update of the Monsoon Asia Drought Atlas.

**Australasia (Joelle Gergis):** A [group meeting](#) is being planned for October. All low and high-resolution records meeting the 2k selection criteria have already been submitted, as there are strong covariations in temperature and rainfall in many parts of the region. There are a number of hydroclimate climate projects in the group currently underway including precipitation reconstructions using speleothems and corals, streamflow reconstructions using high-resolution sedimentary records, data assimilation using CSIRO Mk3L model, and a PDSI reconstruction.

**Euro-Med (Ulf Büntgen and Juerg Luterbacher):** A regional group meeting was held last year in Spain. The Old World Drought Atlas is ready, but not yet available; this is a high-skill and resolution benchmark for further work in hydroclimate reconstruction. Specifically, the group will focus on lower-resolution phenomena (non-tree-ring reconstructions), including a new gridded reconstruction based on various reconstruction techniques.

**North America (Nick McKay):** A group meeting is being planned for October. No new gridded reconstruction product is envisioned. The North American Drought Atlas already a major resource. Current effort is focused on studying key intervals of droughts and pluvials, and use multiproxy database to compare against the tree-ring-based reconstructions.

**Oceans (Helen McGregor and Belen Martrat):** First [Ocean2k meeting](#) will be held in October to focus Phase 2 efforts. Currently exploring aspects of hydroclimate that are best represented by available qualitative and quantitative proxy records, and the scientific questions that can be addressed by these proxies.

**South America (Ignacio Mundo):** A regional group meeting was held last year in Las Cruces. Hydroclimate reconstructions include South American Drought Atlas from tree-ring data (Andes to Patagonia).

### 1.3 How will current efforts by regional groups come together?

The large range of approaches to addressing hydroclimate is expected because hydroclimate is expressed differently across regions. Therefore, each group is focusing on the information and methods best suited for their region. These regionally specific analyses based on all types of proxy records are a major priority for Phase 2 of the PAGES 2k project. A journal special issue is now planned to bring these studies together in a single volume (see below).

In addition to regionally focused analyses of hydroclimate variability, the PAGES 2k project is seeking some threads that can link hydroclimate records from all regions into a network-wide synthesis. As a first step, the focus should involve a proxy type that is widely available and that integrates information about the climate

system, that will enable us to address a wide variety of scientific questions. A Trans-Regional Project to build a comprehensive database of 2k water isotope records is now being planned (see below). Hopefully, other proxy types will follow suit with new data products that span regions and can form the bases for network-wide syntheses.

#### *1.4 Plan for journal special issue – project wrap-up*

PAGES 2k is scheduled to wrap up in 2016. This timeline is important for PAGES because the next proposal to fund PAGES will be submitted in 2017 and the 2k Project is a major component of PAGES. A special issue is now planned for the open-access, transparent-review journal, "*Climate of the Past*". It will include papers by regional and trans-regional groups. The submission window is planned for 1 July to 31 Dec 2016. This timeline coincides with the next PAGES Open Science Meeting, which will take place early in 2017. In addition to the papers for the special issue, the PAGES 2k project seeks studies by regional and trans-regional groups that are of interest to a broader audience, which can be published in short-format, high-profile outlets.

#### *1.5 Trans-Regional Projects represented on the teleconference*

Nerilie Abram is leading a synthesis of the Phase 1 proxy temperature records from ocean and terrestrial regional groups, focusing on the last several centuries. Kevin Anchukaitis is leading a group focused on climate field reconstructions in context of proxy forward models, bayesian hierarchy models, and data assimilation approaches. Important issues include the combination of low- and high-resolution records. Hugues Goosse is coordinating a comparison of climate model results (CMIP5/PMIP3) and Phase 1 temperature reconstructions at decadal scale. The PAGES Varve group (represented by Pierre Francus) is developing a database that could be mined for PAGES 2k studies.

#### *1.6 Other discussion points*

- Data quality control is critical for regional data producers, and for those on the reconstruction and modeling side. Quality control procedures should be implemented for all 2k studies before publication.
- Error estimates for individual proxy records are essential for reconstruction products.
- Capturing expert knowledge about individual proxy records in a systematic and assessable format is critical to assuring that records are interpreted and used properly.
- Teleconference platform and format worked well. We should use it more often.
- PAGES 2k is a community-driven, open project. All interested scientists are encouraged to develop new initiatives and to integrate their on-going efforts into a larger network that is accessible through the PAGES 2k project.

## **2 – PAGES 2K WATER ISOTOPE DATABASE – A NEW TRANS-REGIONAL PROJECT**

Water isotopes detect regional-scale circulation patterns, making them excellent tracers of the water cycle's response to climate change. In addition to tree rings, they constitute a large proportion of all available proxy climate records. This [PAGES 2k Trans-Regional Project](#) will create a global database of oxygen and hydrogen isotope records that researchers can use to assess regional- and global-scale changes in rainfall and atmospheric-oceanic circulation patterns during the past 2000 years. The dataset can be compared with isotope-enabled climate model simulations, and with other proxy types. The database will be constructed using data selection and quality control criteria agreed upon by experts in the PAGES 2k community. Proxy records that are sensitive to both temperature and hydroclimate will be considered from marine, ice, cave, lake and other archives.

Bronwen Konecky is currently developing plans for teleconference to discuss specific goals and expectations for proxy data selection, metadata fields, and specific timeline. If you are interested in helping to lead this effort, please contact [Lucien](#) at the PAGES IPO.

## **3 – UPDATE ON PAGES 2K VERSION 2 TEMPERATURE DATABASE AND DATA DESCRIPTOR**

During the Network-Wide Teleconference, Julien Emile-Geay presented the status of version 2 of the PAGES 2k temperature database, a community-wide product envisioned to address a wide range of scientific questions. Over 1000 records have now been assembled and formatted for the database. Next, all records will be plotted as time series and the metadata will be tabulated for review by regional groups to assure that they are correctly represented in the database.

#### *3.1 Plans for database release and analyses*

Once the data have been rechecked by regional groups, they will be packaged with a data descriptor and submitted to the journal, "*Scientific Data*". This database will be pre-release to the 2k network and its use for [trans-regional studies](#) encouraged. To avoid duplications and promote synergies and trans-regional collaborations, all proposed activities will be listed on the 2k website. If you are interested in using the dataset for any purpose, please contact [Lucien](#) at the PAGES IPO.

#### 4 – NEW 2K PRODUCTS

Werner JP and Tingley, MP (2015), *Technical Note: Probabilistically constraining proxy age–depth models within a Bayesian hierarchical reconstruction model*, *Climate of the Past*, 11, 533-545.

To view all 2k products and upcoming 2k events, visit the respective regional 2k group’s website:  
[www.pages.unibe.ch/workinggroups/2k-network](http://www.pages.unibe.ch/workinggroups/2k-network)

Please let us know if you see any gaps or errors, and send us any meeting documents (e.g. presentations and posters), to post on the 2k web page to create a complete online archive of an event or activity.

Don’t forget to acknowledge PAGES in publications that draw ideas arising from PAGES-funded meetings.

#### 5 – UPCOMING PAGES 2K MEETINGS

##### **13-17 April 2015, Vienna, Austria**

EGU Meeting 2k Session “Studying the climate of the last two millennia”  
<http://meetingorganizer.copernicus.org/EGU2015/session/17036>

##### **13 April 2015, Vienna, Austria**

Arctic2k Meeting  
<http://www.pages.unibe.ch/calendar/2014/127-pages/1309-arctic2k-meeting>

##### **17-19 June 2015, Gdansk, Poland**

Climate variability and human impacts in Central and Eastern Europe during the last two millennia  
Co-sponsored by EuroMed2k, including a EuroMed2k  
<http://pages-igbp.org/calendar/2014/127-pages/1306-climate-variability-human-impacts-c-e-europe-last-2k>

##### **3-9 September 2015, Venice, Italy**

Antarctica2k Workshop  
<http://pages-igbp.org/calendar/2014/127-pages/1471-antarctica2k-2015-meeting>

##### **30 September - 2 October 2015, Auckland, New Zealand**

Australasia2k Workshop  
<http://www.pages.unibe.ch/calendar/2014/127-pages/1490-4th-aus2k>

##### **6-8 October 2015, Barcelona, Spain**

1<sup>st</sup> Ocean2k Workshop  
<http://www.pages.unibe.ch/calendar/2014/127-pages/1481-1st-ocean2k-workshop>

More upcoming meetings here: <http://www.pages.unibe.ch/calendar>

#### 6 - MEETING SUPPORT

Regional 2k groups seeking support for meetings can submit a proposal to PAGES (visit [MyPAGES>Meeting Support](#)). **The next deadline for proposal submission is 12 June 2015.**