

**NOTES FROM THE EIGHTH FORMAL GEWEX HYDROCLIMATOLOGY PANEL (GHP)
(formerly CEOP) TELECONFERENCE ON AMERICAS REGIONAL HYDROCLIMATE
PROJECTS AND REFERENCE SITE ISSUES HELD ON
15 FEBRUARY 2011
First DRAFT, 20 April 2011**

1. INTRODUCTION

The 8th Americas RHP and Reference Sites Teleconference related to the GEWEX Hydroclimatology Panel (GHP, formerly CEOP) took place on Tuesday 15 February 2011 at 20:00 UTC.

The issues that were discussed on the subject conference call included:

- (i) CEOP – GHP transitions: Second Co-Chair; New RHP criteria; Development a new RHP in the North America
- (ii) Overview of all site data at CEOP Reference Site Data Archive;
- (iii) RHP/Reference Site data providers/managers reports;

Participants

Erin Thompson	(BERMS Representative)
Luiz Horta	(LBA reference site data manager)
Mike Ek	(Model Output group representative)
Steve Williams	(CEOP Reference Site Data Archive manager)
Scot Loehrer	(CEOP Reference Site Data Archive manager)
Sam Benedict	(GHP International Coordination Function)
Petra Koudelova	(GHP International Coordination Function)

2. NEXT CONFERENCE CALL

The next, **9th GHP Americas RHP and Reference Sites Teleconference** is proposed to take place on **Tuesday 14 June 2011 at 20:00 UTC**. **Benedict and Koudelova** have the **action (A1)** to inform the group of the details of the next call nearer to the time of the call and to coordinate the origination of the call (**action A1a**).

3. GHP AND CEOP DATA GROUP GENERAL ISSUES

3.1 WCRP and GEWEX related issues

(3.1a) **Benedict** reiterated the main outcomes of the 2nd Pan-GEWEX meeting that was held in Seattle, USA, in August 2010 (<http://www.gewex.org/2010pangewex/home.html>). These included a number of decisions, recommendations and actions specifically associated with former CEOP as well as a set of general (Pan-GEWEX) actions for all the Panels. The main changes that have taken place recently with respect to CEOP included:

1. The SSG accepted Prof Toshio Koike's decision to step down as Co-Chair of CEOP effective at the close of the PGM at Seattle. This action, followed Dr Ron Stewart's resignation, which was taken at the close of the SSG meeting at New Delhi India, 25-29 January 2010,
2. Dr Dennis Lettenmaier was named Co-Chair of CEOP to replace Dr Stewart, effective at the end of the SSG meeting at India (25-29 January 2010),
3. There was a search team being organized to find a Co-Chair to work with Dr Lettenmaier.
4. The SSG agreed to change the name of CEOP to the GEWEX Hydroclimatology Panel (GHP), effective immediately following the end of the PGM.

Also a new set of criteria for GEWEX RHPs was proposed at the meeting that were circulated prior to the last call and all RHPs were asked to review this set.

(3.1b) **Benedict** advised the group that consequently after the PGM, **Dr. Jan Polcher** – Laboratoire de Météorologie Dynamique, Centre National de la Recherche Scientifique (CNRS), Jussieu, Paris, France – had been nominated a new Co-Chair of GHP and had accepted this function. Dr. Polcher attended the GHP Europe-Africa Conference Call on 18 January and at that time introduced his interests in activities covered by GHP and stressed out in particular the importance of high quality long-term in-situ observations that are essential for WCRP/GEWEX science. He pointed out that individual sites on which RHPs are built up needed to be maintained and these difficult tasks should be supported by the GEWEX community. **Polcher** also emphasized that both (i) long term records and (ii) intensive, comprehensive short term observation campaigns are necessary and that crucial is rigorous data quality assurance with appropriate site instrumentation documentation. He voiced that establishing of a kind of a list of “good practices” for reference site observation would be desirable and also named the BSRN sites as a good example of such practices.

Polcher further advised the group that the new GHP panel members (see ATTACHMENT 1 below) would meet at the occasion of the EGU meeting in Vienna in April and they would discuss a new organization of the Panel that would be suitable for the new directions identified at the PGM. In addition, he mentioned that the first meeting of the new GHP was proposed be held in autumn in Europe.

(3.1c) One of the members on the new GHP panel is Dr. Michael Ek, who has been actively involved in the GHP/CEOP Model Output activities, representing the NCEP group, as well as in the GLASS benchmarking efforts. **Dr. Ek** attended the call and advised the group of their model validation and benchmarking activities that require continuous high quality reference site data. **Ek** acknowledged the importance and high value of the GHP/CEOP reference site dataset for these their activities and appreciated special efforts of the reference site data providers as well as data management team. He also advised the group of the Protocol for Analysis of Land Surface models (PALS), which is a web application for evaluating land surface models and the observed data sets used to test them. It provides data for particular modelling experiments as well as a wide range of diagnostic performance measures once model output created from these data is uploaded. As such, it has two broad categories of users: those who provide observed data sets and are interested in receiving feedback about how models use or interpret their data, and; those who run models using this data and use PALS as a model analysis tool. The system is available at: www.pals.unsw.edu.au/.

In this context, **Benedict** reiterated that with regards to the changes resulting from the Pan-GEWEX meeting discussions, the data collecting and reporting scheme may need some restructuring, however the urgent need for a high quality data as a basis for scientific activities that are key for the GEWEX Imperatives was confirmed at the Pan GEWEX Meeting and the reference site data activities are supposed to continue in a certain manner. The in-situ data from the CEOP reference sites were acknowledged and studies based on these data were presented at the meeting.

(3.1d) **Benedict** also informed the group that recently, the CLIVAR Variability of the African Climate System (VACS) panel had express interest to establish a closer links to GEWEX since, both from a scientific and administrative point of view, the VACS effort could potentially evolve into a joint CLIVAR GEWEX activity. Both, the VACS community and the GEWEX SSG Chair, Kevin Trenberth, agreed that GHP would be most appropriate place for VACS links in GEWEX. Accordingly, it has been proposed and agreed, that representatives of the VACS community would be invited to attend the GHP RHP and Reference Site Calls, in particular the ones that involve Europe and Africa. **Koudelova** and **Benedict** have **action A2** to assure the representatives of the VACS panel are properly informed of the such next calls.

(3.1e) After the call, at the beginning of March, **Williams** advised all the CEOP/GHP reference site groups by via email about the development of the situation at NCAR/EOL, where the CEOP reference site archive is hosted. With respect to the transition process from CEOP to GHP and envisioned GHP foci, the NOAA's Climate Projects Office (CPO), who has funded this CEOP activity since 2001, has directed **EOL to complete these activities by September 2011**. No additional funds have been allocated to EOL beyond October 2011 to provide any support to CEOP/GHP. Accordingly, the NCAR EOL team has decided to process and follow up on all the **reference site data that would be submitted to them by 31 March 2011** and a requested all the CEOP reference site data providers to consider this deadline to complete their submissions as much as possible. The copy of this note and request is attached below (Attachment 2).

(3.1f) **Benedict** further informed the group that a new RHP was being formed in the Northern American continent, involving the USA, Canada, and potentially Mexico. The proposed RHP, **Terrestrial Regional North American Hydro-Climate Experiment (TRACE)** (<http://www.trace-rhp.org/>), envisions an interdisciplinary, international, and interagency effort to make significant contributions to continental and finer scale hydro-climate science and solutions. The TRACE objective is to entrain, integrate, and coordinate the vast array of interdisciplinary observational and prediction resources available to significantly advance skill in predicting and managing changes in North American water resources, as an integral part of the global climate system. The TRACE mission is to measure and predict North American energy and water variations, trends, and extremes through improved observations and prediction, thereby providing the scientific underpinnings of future climate services. The initial discussion workshop will be held on 18 – 20 April 2011, at the Crowne Plaza Hotel in Silver Spring, Maryland, USA.

(3.1g) It was reiterated that a **10-Year Dataset** project had been initiated in response to the climate modeling community need of **a high quality observation data** of a sufficient length for evaluation of climate models under the CMIP5 project and quantification of model projections uncertainties. This activity was proposed by the WCRP Observation and Assimilation Panel (WOAP) and is compliant with the CEOP commitment taken at the 3rd Annual CEOP Meeting in Melbourne in August 2009 to develop the CEOP 10-year dataset as well as with the **GEWEX post 2013 Imperatives** ([http://www.gewex.org/2010pangewex/Draft Imperatives.pdf](http://www.gewex.org/2010pangewex/Draft%20Imperatives.pdf)). The WOAP suggested activity is envisioned as a collaborative effort of a broader observation and climate modeling communities including GEWEX/CEOP, LandFlux-EVAL, GSWP, AsiaFlux, from the observation side. The targeted dataset will consists of **in-situ as well as satellite observations** from multiple providers including GHP (CEOP), FLUXNET, AsiaFlux, iLEAPS.

The 10-Year Dataset project was discussed with the LandFlux-EVAL, FLUXNET, AsiaFlux, and GSWP representatives at the occasion of the HESS2 Meeting in Tokyo in June and subsequently a White Paper was developed and submitted for discussion at the Pan-GEWEX meeting in August. The White Paper is now under consideration by WCRP (WOAP) and GEWEX communities. Further details should be known after the GHP Panel meeting in April.

4. RHP and Reference Site Reports

4.1 Overall status of the CEOP reference site data archive and related issues

Williams provided overall updated status of the Americas reference sites that can also be accessed on the Internet at:

http://data.eol.ucar.edu/master_list/?project=CEOP/EOP-3/4.

4.2 ARM sites by Steve Williams

(4.2a) **Williams** reported that all the ARM sites data including SGP, NSA, and WTP were complete up to 2009. Nevertheless, he reiterated that there had been substantial changes in terms of individual station locations within the SGP reference site (number of stations had been shut down and new would be installed in 2011) in order to better fit to higher model resolutions.

This needs to be considered when if the SGP site is nominated for contribution to the 10-YDP. It may require that a subset of stations is selected that have been in operation at the same location since the beginning of the CEOP (or 10-YDP) period.

4.3 BERMS sites by Erin Thompson

(4.3a) **Thompson** reported that the three BERMS sites continued to operate and the team considered submitting data up to 2010 to GHP/CEOP. Currently, the data up to 2006 are available through the NCAR archive and the 2007 – 2010 data will be submitted at once within several months. Firstly, the meteorological data will be provided, the flux data may take more time.

4.4 LBA by Luiz Horta

(4.4a) **Horta** reported that the Manaus data up to 2009 had been prepared by the Manaus team and would be sent to Horta in the near future. The set of format conversion routines has been developed and will be applied at the data center in Cachoeira Paulista. **Horta** also reiterated that there had been certain updates in Manaus. The site equipment is monitored on-line, providing thus immediate information on the status of sensors. In addition, a data archive center is under consideration at CPTEC, that would be tele-connected to the observation sites and thus the data would be transmitted to the center on a real time basis. The data center may be implemented in 2011.

(4.4b) **Horta** also mentioned that Dr. Araujo and one data expert of the Manaus site had moved to other positions and thus new personnel may be required for the facility. Nevertheless, Dr. Araujo is still supporting the LBA on a part-time basis.

(4.4c) **Horta** further voiced that recent political changes had not negatively influenced the governmental support of LBA activities (so far). At the same time, CPTEC is undergoing remarkable changes including technical upgrades as well as appointing a new director, which may have some effect on some of its activities.

4.5 CPPA sites by Tilden Meyers (written report)

Wintertime CO₂ fluxes are being corrected for known temperature effects due to heating of the sensor and thus giving erroneous CO₂ fluxes.

We are also completing our study of flux underestimation by sonic anemometers. All these errors are being tested and corrected in our "final" data output. It has taken some time, along with the gap filling process, but we will feel comfortable with having produced the best most accurate fluxes possible. The correction procedure will change some numbers by as much as 15 - 20%. However instead of incremental changes, we will be making one final output, with all necessary corrections, which we will be able to defend experimentally. We plan to complete this before we go back into the field in the spring (April).

We will be sending data to Scot and Steve, then, both historical and current. These are all issues that have come about the last year, and it has taken some time to complete some field work in order to make the necessary corrections.

ATTACHMENT 1 List of GHP Panel Members

Last Name	First Name	Affiliation	Country	Gender	Age	Expertise
Berbery	Hugo	Research in the Dept. of Atmospheric and Oceanic Science of the University of Maryland (UMD)	US	Male	?	- Diagnostic and modeling studies of regional climate variability focused on the American monsoon systems and the hydrologic cycle - Role of surface conditions on land surface-atmosphere interactions and their relation to the water and energy cycles
Ek	Michael	National Centers for Environmental Prediction/Environmental Modeling Center (NCEP/EMC), NOAA	US	Male	?	- Land hydrology, - Boundary-layer physics - Land-atmosphere interaction - Associated modeling and observational data analysis
Harding	Richard	Director of the Biogeochemistry programme at the NERC Centre for Ecology and Hydrology (CEH)	UK	Male	?	- Arctic hydrology, including mass and energy balances of snow and ice surface; - Large-scale hydrological modelling; - Global climate modelling; - Land surface/atmosphere interactions (measuring and modeling fluxes of water and CO ₂ from land surfaces)
Kanae	Shinjiro	Tokyo Institute of Technology	Japan	Male	39	- Global water cycle, - Water resources, - Sustainability, - Flood and drought, - Climate change, - Asian monsoon hydrology
Levizanni	Vincenzo	Director of Research at the Istituto di Scienze dell' Atmosfera e del Clima (ISAC) of CNR	Italy	Male	53	- Satellite multispectral studies of cloud top structure; - Cloud physics studies of severe storms using radar and satellite techniques; - Satellite rainfall estimations using combined VIS/IR and MW techniques; - Earth radiation budget definition using satellite and ground-based instruments; - Development of mesoscale analysis techniques including remote sensing data; - Studies of long-distance aerosol transport using satellite instruments

Nunes	Ana	Professor, Dept. of Meteorology, Institute of Geosciences, Federal University of Rio de Janeiro	Brazil	Female	Received PhD in 2002	<ul style="list-style-type: none"> - Precipitation - Recent projects include: “The SIO Regional Spectral Model Contribution to the North American Regional Climate Change Assessment Program,” “Evaluating the Role of Snow Cover on Seasonal to Inter-annual Predictability of Temperature and Precipitation” (NASA), NASA Energy and Water cycle Studies (NEWS) Project “Global Water and Energy Budgets”
Walker	Jeff	Prof. in the Department of Civil Engineering, Monash University	Australia	Male	Received PhD in 1999	<ul style="list-style-type: none"> - Environmental sensing; - Earth system modeling; - Optimal convergence of model predictions with observations through data assimilation
Zeng	Xiaodong	International Center for Climate and Environmental Sciences (ICCES), Institute of Atmospheric Physics (IAP), Chinese Academy of Sciences	China	Male	Received PhD in 1998	<ul style="list-style-type: none"> - Spatial and temporal response of vegetation distribution to global climate change, and the impact of vegetation on global energy, water, and carbon balances

ATTACHMENT 2

Message from Steve Williams, CEOP Data Management Co-Chair and the in-situ archive Chair, on the completion of the CEOP in-situ data activity at NCAR EOL. (March 2011)

All,

NCAR's Earth Observing Laboratory (EOL) has been supporting CEOP in a number of areas including the planning and coordination of CEOP Data Management activities through meetings, teleconferences, and documents. Primary support provided by EOL has been the collection, processing, Quality Assurance (QA), archival, and dissemination of CEOP Reference Site data/metadata, and EOL currently integrates and hosts this long-term archive for the scientific community. NOAA's Climate Projects Office (CPO) has funded this activity since 2001, and with the recent transition from CEOP to GHP, CPO has directed EOL to complete these CEOP activities by September 2011. No additional funds have been allocated to EOL beyond October 2011 to provide any support to CEOP/GHP.

In review of the existing budget and estimating the level of effort to complete these activities, EOL plans to collect available CEOP Reference Site data through March 2011. At that time, EOL will complete the processing and QA of all "in-house" holdings and add these data to the final archive. EOL will continue to maintain the CEOP data management web pages through September 2011 and provide access to the Reference Site data and metadata. During this period, EOL will also continue to work closely with the other CEOP Data Centers (satellite and model output) as well as individual Reference Sites. It is expected that based on the CEOP data policy, processed data (through 2009) will be added from as many contributing Reference Sites as possible. So, it is important that you submit your processed quality assured Reference Site data through 2009 to EOL prior to 31 March 2011 so that these data can be reviewed and included in the final archive.

A lot of effort has gone into the planning, design, and development of the Reference Site database over the past 10 years, and it has provided a high quality resource and long-term legacy to the climate community. The ability to utilize these climatologically diverse Reference Site data (surface, soils, tower, and flux) all in a common format with uniform QA and user friendly interface for data access, has greatly enhanced scientific research as evidenced by data download metrics, publications, and personal correspondence. So, on behalf of CEOP, I thank you very much for all your contributions and participation over the years in these efforts. It is important to recognize the need to continue contribution of data to networks as appropriate, which allow open access for the broader scientific community (such as Fluxnet). Coordination of data within these networks may be undertaken in support of GEWEX Imperatives, through GHP in due course.

It is possible that there may be a few additional teleconferences beyond March to work out any remaining details related to the archive completion. Feel free to contact me should you have any questions.

Regards,
Steve