

US CLIVAR Report

CLIVAR VAMOS

Panel Meeting

University of Miami

March 26, 2011

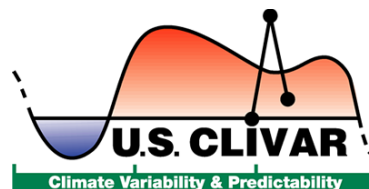
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US CLIVAR Goals

- Identifying and understanding the **major patterns of climate variability** on seasonal, decadal and longer time scales and evaluating their predictability
- Expanding our capacity in short term (**seasonal to interannual**) **climate predictability** and searching for ways **to predict decadal variability**
- Better documenting the record of **rapid climate changes** and the mechanisms for these events, and evaluating the potential for abrupt climate changes in the future
- Evaluating and enhancing the models used to **project climate change** due to human activity, including anthropogenically induced changes in atmospheric composition
- **Detecting** and describing any **climate changes** that may occur

US CLIVAR Update

US CLIVAR Recent Achievements

- 4 new Climate Process Teams (CPTs) started in 2010 (Ocean Boundary Mixing, Sea Ice/Ocean Mixing, Stratocumulus to Cumulus Transition, Cloud Macrophysical Parameterization)
- Climate Model Evaluation Projects awarded for CMIP5 analysis
- Integrated Earth System Analysis (IESA) workshop November 2010; FY11 small grants program for analyzing reanalysis products
- Atlantic MOC activity has grown (40 projects); planning underway for AMOC observing elements in the northern subpolar and southern Atlantic
- DYNAMO (MJO initiation) & SPURS (ocean salinity) projects awarded and field campaigns moving forward

Strategic Directions/Planning

- US CLIVAR moving ahead on *decadal variability, extremes, and climate of polar regions* themes -- Decadal Prediction Working Group
 - Greenland Ice Sheet-Ocean Interactions Working Group
 - Hurricane Working Group
 - Research Colloquium on Extremes under Global Warming @ NCAR, June 13-17, 2011
- *Physical climate system interactions with carbon cycle, ocean biogeochemistry and marine ecosystems* to be explored at July 2011 Summit in Woods Hole, MA
- SSC considering updated Science Plan for post-2014 period

Continuously Operating Caribbean GPS Observational Network (COCONet)

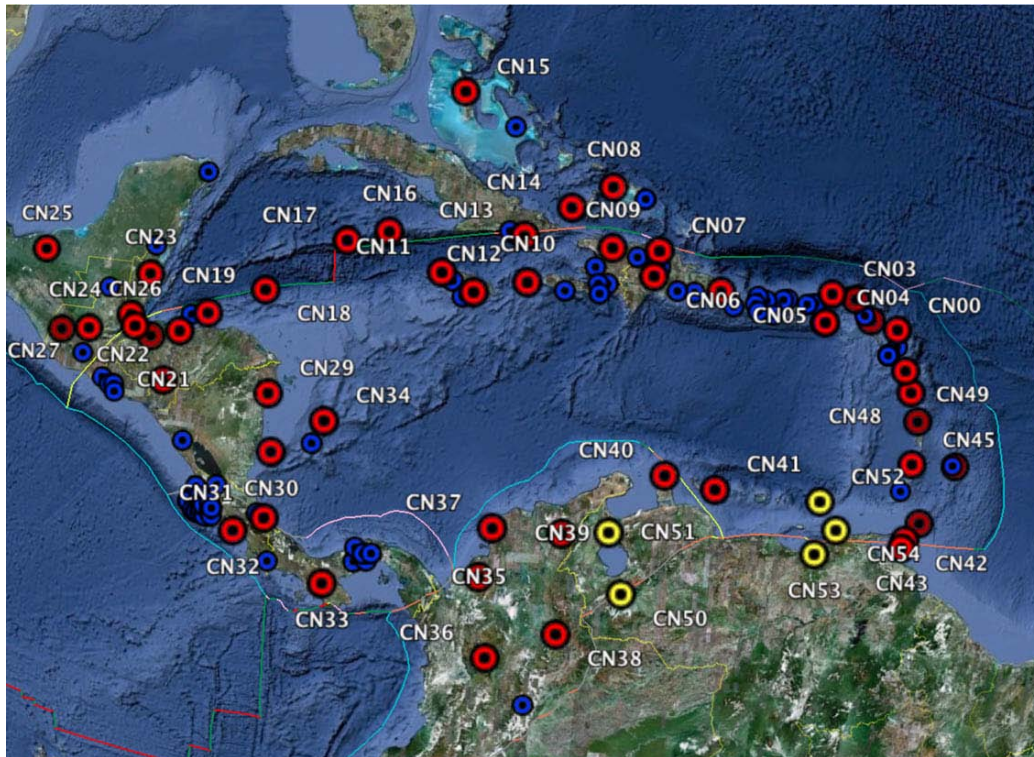


Figure 5. Existing and proposed GPS network design for COCONet. The fifty proposed Caribbean GPS stations are shown in red. Existing GPS station with a high probability of getting free and open data access are shown in Blue. Stations in Yellow are deemed critical for tectonic studies but are not included in this proposal due to difficulties associated with working in Venezuela.

Adds 50 GPS stations around perimeter of the Caribbean basin; installation over the next three years

NSF Support through EAR Tectonics Program ~\$7M/5 years; Small AGS funding contribution

- produces precipitable water vapor (PW) estimates at 30-minute time steps
- provides continuous observations of surface temperature and pressure, relative humidity, horizontal winds, and precipitation

US CLIVAR Hurricane Working Group

*Chairs: Gabriel Vecchi, GFDL; Suzana Camargo, LDEO;
Kevin Walsh, Univ. of Melbourne, Australia*

To coordinate efforts to produce a set of model experiments designed to improve understanding of the variability of tropical cyclone formation in climate models

Scientific Objectives:

- Improve understanding of interannual variability and trends in tropical cyclone activity from the beginning of the 20th century to the present
- Quantify changes in the characteristics of tropical cyclones under a warming climate

The WG is coordinating a set of GCM experiments with a common set of forcings and provide the output for use by the research, prediction and applications communities.

Noting that the work would be useful in interpreting CMIP5 results, a near-term aim is to complete publication(s) for inclusion in the upcoming AR5.

US CLIVAR/NCAR ASP Researcher Colloquium

Statistical Assessment of Extreme Weather Phenomena under Climate Change

NCAR Foothills Lab, Boulder, Colorado, USA

June 13-17, 2011

<http://www.asp.ucar.edu/colloquium/2011/index.php>

Objectives

- Determine climate and weather extremes that are **crucial in resources management and policy making**
- Identify the current **state of the science** of climate and weather extremes including **uncertainties and information gaps** in real-world applications
- Obtain insights into the **capabilities of climate models** in identifying and modeling such extreme events.
- Assess **efficacy of statistical methods** and tools to analyze and model extreme events under climate change
- Develop **interdisciplinary research** directions in modeling and application of climate extremes

Applications deadline: 28 March 2011. Participation limited. Travel funds available.

US Agency Budget and Program Outlook



NASA: Proposed increase in Earth Sciences in FY12, but loss of major satellite missions

- AMOC, SPURS field campaign remain priorities
- Aquarius launch on schedule for June 2011
- CLARREO (radiance), DESDyni (surface deformation, terrestrial biomass, ice dynamics) and one of two GPM (precipitation) satellite missions eliminated in FY12
- Small aircraft missions preserved; smaller satellite missions retained w/ schedule delays



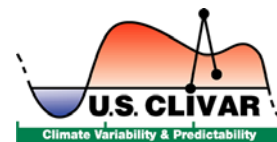
NOAA: Anticipating reduction in FY11, Proposed reduction in FY12

- AMOC, DYNAMO, ocean observing system remain priorities
- Launch of NOAA Climate Service proposed
- 2/3 reduction in NOAA support of IRI in FY12
- Shiptime budget constrained



NSF: Anticipating level funding for OCE and AGS in FY11-FY12

- AMOC, DYNAMO remain priorities
- Climate Research Investments (CRI) Earth System Modeling awards
- Science, Engineering and Education for Sustainability (SEES) to launch FY12



US Global Change Research Program Strategic Plan

- Reorganization of US Interagency Program
- Expanding beyond previous administration's focus on Climate Change to include e.g., Ocean Acidification, Land Use/Land Change, Ecosystem Change & Biodiversity
- Four new research themes:
 - Advancing Science
 - Adaptation and Mitigation
 - National and International Assessments
 - Education and Communication
- Plan being developed by agency manager writing teams
- US CLIVAR Office engaged in developing highlighted integrating climate science topics
- Plan preview at WCRP Open Science Conference: October 2011
- Plan delivery date: December 2011

WCRP Open Science Conference

24-28 October 2011

Denver, Colorado, USA

www.wcrp-climate.org/conference2011

Promoting, Facilitating and Coordinating
Climate Research in Service to Society



Student, Early Career, Developing Country Scientist Travel Grant Deadline: 31 March
Abstract Submission Deadline: 30 April (\$25 fee)
Early Bird Registration Deadline: 30 June (\$300)
General Registration through 24 October (\$430)

Thank You

