

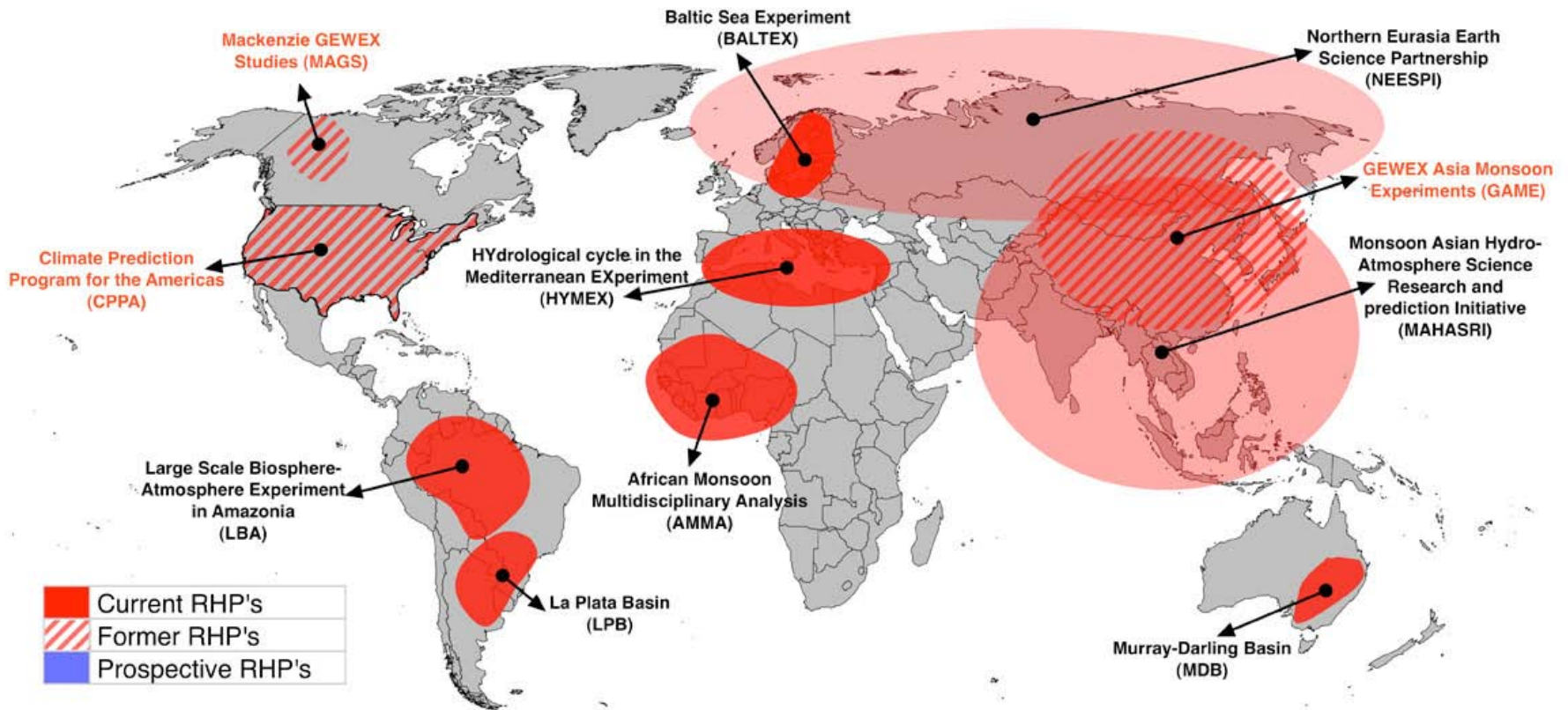
Activity Report by Rick Lawford

GWSP Meeting
October 1, 2012

- 1) GEWEX activities
- 2) IISD activities
- 3) NASA activities
- 4) IGWCO and GEO activities

GEWEX RHPs searching for a North American link

GEWEX REGIONAL HYDROCLIMATE PROJECTS



A Saskatchewan River Basin (SRB) study is being developed as a GEWEX RHP

It will build on the substantial infrastructure and existing data sets in the basin.



The phase 1 SRB project will focus on:

- Climate
- Surface water and terrestrial land processes
- Water quality
- The role of hydrologic information in decision making and policy.

MACLEANS.CA

HOT TOPICS

BLOGS

CANADA

WORLD

BUSINESS

CULTURE

OPINION

HEALTH

ENVIRONMENT

ONCAMPUS

Olympics

POSTS TAGGED 'LAKE WINNIPEG'

Canada's sickest lake

By Nancy Macdonald - Thursday, August 20, 2009 - 29 Comments

Living, toxic goo is killing lakes the world over. It may be too late for Lake Winnipeg.

Legend

P Load (Kg/sq Km)

0 - 2.00

2.01 - 4.00

4.01 - 6.00

6.01 - 8.00

8.01 - 10.00

10.01 - 15.00

15.01 - 20.00

20.01 - 25.00

25.01 - 30.00

30.01 - 35.00

35.01 - 40.00

40.01 - 45.00

45.01 - 50.00

50.01 - 55.00

55.01 - 60.00

60.01 - 65.00

65.01 - 70.00

70.01 - 75.00

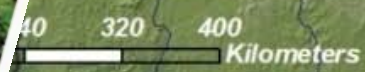
75.01 - 80.00

80.01 - 85.00

85.01 - 90.00

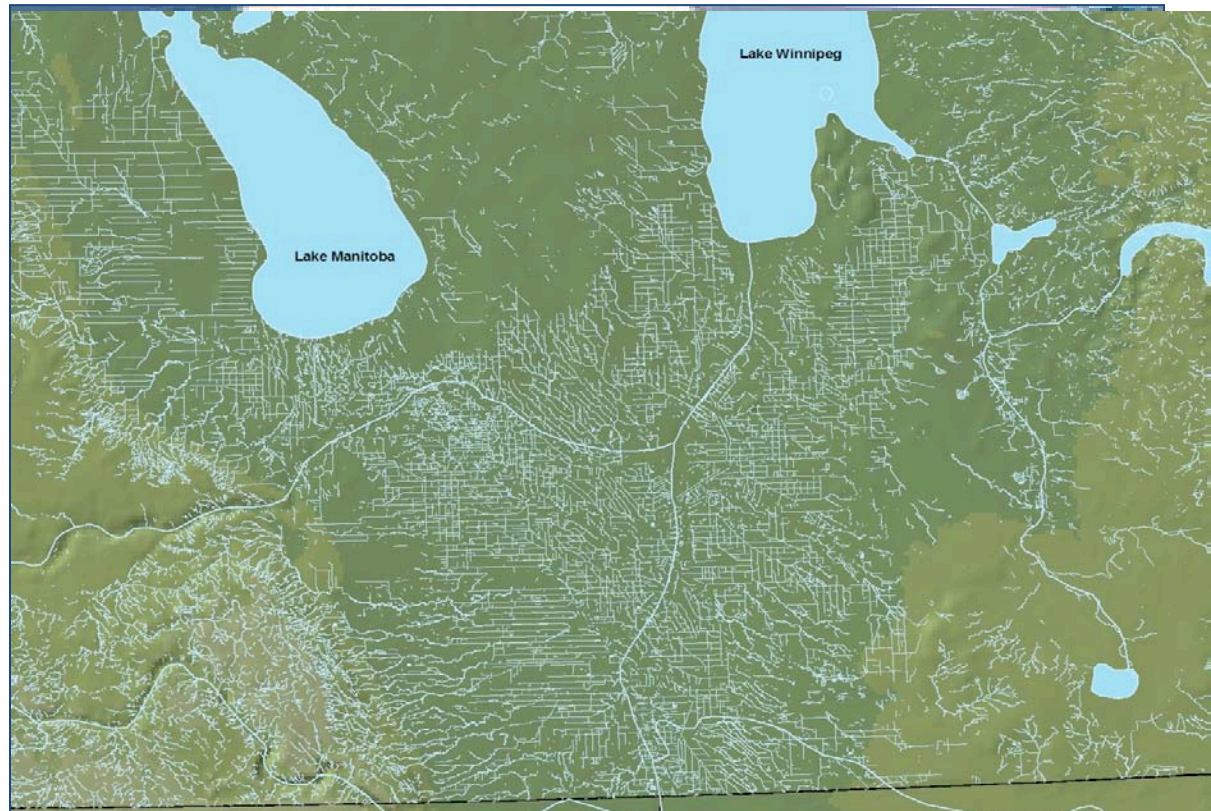
90.01 - 95.00

95.01 - 100.00



Potential Solutions: Redesigning the landscape

A major solution with many benefits would involve transforming the landscape back to a condition that is closer to the way Europeans found it when they first arrived with wetlands which could retain water. Wetlands provided a buffer for storage during floods and cleaned the water. Today, they could remove much of the nutrients before they reach the lake. These nutrients could be captured by the wetland vegetation which could be harvested and used for fossil fuel. (A proof of concept project is currently underway).



Pathways for Implementing Solutions

Path 1: Increase the contributions of science by linking the science and observational systems to policy objectives through targets and sustainable monitoring.

Path 2: Broaden the ownership of the sustainable development by creating a more open governance process that includes citizens, private sector and all levels of government.

Path 3: Develop water management plans within an Integrated Water Resource Management framework to implement regional bioeconomies that will combine water and land management to maximize contributions to Sustainable Development.

Path 4: Analyze the interactions between land management and water impacts to determine where adjustments can be made to improve water availability and quality.

Path 5: Develop a strategy for encouraging investments in water infrastructure that advances the sustainable development of Water for food, energy and environmental security.

Contributions to NASA Water Applications

Demonstrate the value of satellite observations (Pressures to spent research budget on space research)

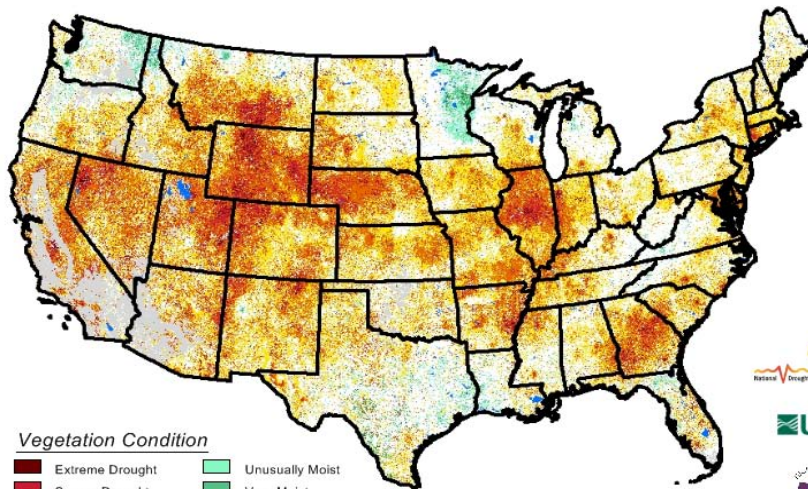
Drought

Evapotranspiration

International activities (SERVIR, Africa)

Vegetation Drought Response Index
Complete

August 6, 2012



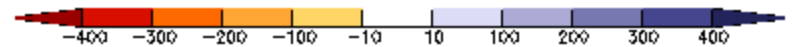
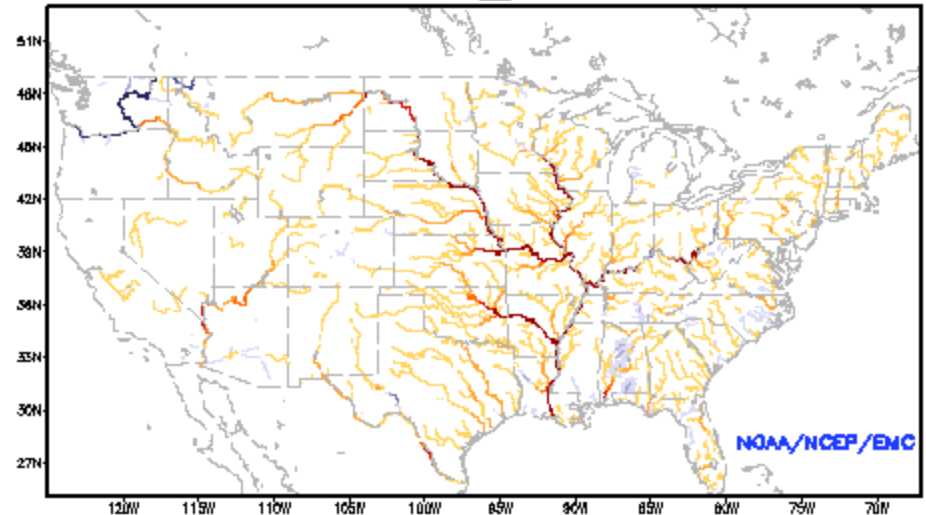
Vegetation Condition

- | | |
|------------------|-----------------|
| Extreme Drought | Unusually Moist |
| Severe Drought | Very Moist |
| Moderate Drought | Extremely Moist |
| Pre-Drought | Out of Season |
| Near Normal | Water |



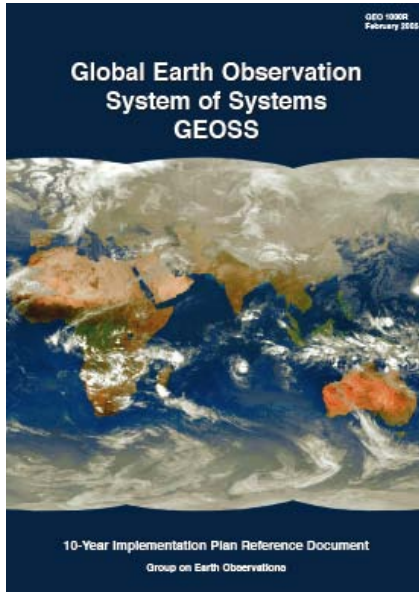
VegDRI Products

Ensemble-Mean: Current Streamflow Anomaly (m³/s)
NCEP NLDAS Products__Valid: AUG 01, 2012



NLDAS streamflow data

GEO (Group on Earth Observations) is developing the Global Earth Observation System of Systems (GEOSS).



THE GLOBAL EARTH OBSERVATION SYSTEM OF SYSTEMS



By 2015, produce comprehensive sets of data, information products and services to support decision-making for efficient management of the world's water resources, based on coordinated, sustained observations of the water cycle on multiple scales.

The Water Target



Water in the 2012-2015 GEO Work Plan

WA-01 Integrated Water Information (incl. Floods and Droughts)

Components:

C1: Integrated Water-cycle Products and Services*

C2: Information Systems for Hydro-meteorological Extremes (incl. Floods and Droughts) *

C3: Information Service for Cold Regions

C4: Global Water-Quality Products and Services

C5: Information System Development and Capacity Building ***

INTEGRATED GLOBAL WATER CYCLE COMMUNITY OF PRACTICE (IGWCO CoP) COORDINATION

IGWCO (Development)

- Precipitation
- Soil Moisture
- Water Quality
- Ground Water
- Runoff and Water Storage
- ET
- Integrated Data Systems

Tools and Apps (Demonstration)

- Water for the World (IEEE)
- Drought
- Monitoring
- Indicators
- E2E Projects
- AWCI apps

Capacity Development (Dissemination)

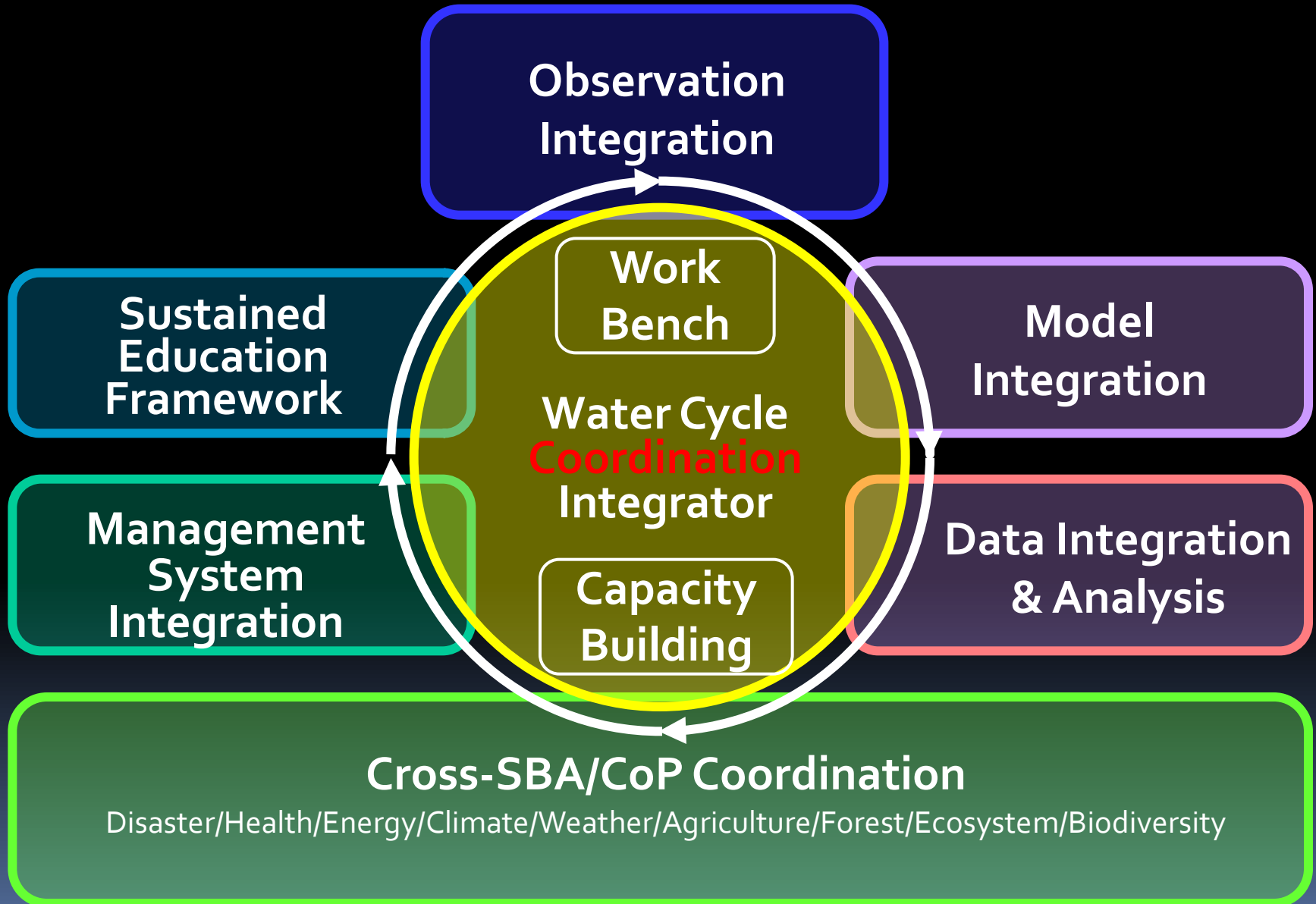
- AWCI CB
- AWCCI (Africa)
- TIGER
- CIEHLYC

Regional CoPs (Deployment)

- AWCI
- WaterNET
- TIGER
- EUGENE

From Development to Benefits and Services

Integrated & Coordinated Approach



(Courtesy of Toshio Koike)

Other Activities

1. Analysis of Water Cycle Data Centres (in support of interoperability)
2. Contribution on project for a “Handbook” for finding funds for GEO Projects (Water Prototype)
3. Organization of an AfWCCI workshop in Morocco
4. Proposal for an Indicators workshop (NASA)
5. Expansion of the user interaction element of the IGWCO CoP
6. Completion of the GEOSS Water Strategy Report (2015-2025)
7. Earth Observations and their potential interventions in the water management process
8. Proposals: ENVIROWaters, SODAS, Geospatial mapping for a bioeconomy