

## **April 2010 Drought Workshop Series:**

***North American Drought Monitor Forum –  
Global Drought Assessment Workshop –  
US-Canadian GEO Bi-lateral Technical Workshop***

**Asheville, North Carolina, U.S.A.  
April 20-23, 2010**

Hosted by the National Oceanic and Atmospheric Administration / National  
Climatic Data Center

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Drought is a devastating natural phenomenon that ignores international boundaries. Many efforts are underway on national and regional scales which address many aspects of drought assessment, prediction, and mitigation. Collaboration and cross fertilization between these efforts will benefit all participants.

Since November 2002, the North American Drought Monitor (NADM) has been a multi-national effort between the U.S., Canada, and Mexico which has improved coordination between these countries on real-time monitoring and led to improved data exchange (e.g. precipitation) for product validation and enhancement. As such, the NADM is a key example of international cooperation in the context of the Group on Earth Observations (GEO). Biennial workshops address technical, administrative, user, and science issues related to the NADM. Following a series of meetings, the U.S. GEO and Canadian GEO are collaborating on three testbeds and two drought studies to strengthen international collaboration between the two countries in the domain of Earth observations for water resource management and water cycle research with the view of North America as a single geographic space. Following a December 2009 workshop, the World Meteorological Organization (WMO) announced the consensus agreement among international drought experts that the Standardized Precipitation Index (SPI) should be used to characterize meteorological droughts by all National Meteorological and Hydrological Services around the world and that a similar, comprehensive review of agricultural and hydrological droughts should be undertaken in order to develop common indices for better early warnings in the agricultural and water sectors. The NADM and the U.S.-Canadian GEO bilateral collaboration are crucial elements in this broader effort to improve international collaboration in drought monitoring and early warning.

In view of these parallel developments and the fact that these efforts share many participants, the 2010 NADM biennial workshop provides an excellent opportunity for coordinated gatherings of these groups. The April 2010 drought workshop series will begin with the first day of the NADM Forum on Tuesday, April 20. Wednesday, April 21, will begin with a joint session between the NADM Forum and the Global Drought Assessment Workshop, and the day will conclude with discussions of regional and continental drought monitoring activities across the world. The second day of the Global Drought Assessment Workshop – Thursday, April 22 – will focus on what is needed to establish an international drought clearinghouse and the web services infrastructure required for a global drought monitoring effort. The week will end with the U.S.-Canadian GEO Bilateral Technical Workshop on Friday, April 23. It is hoped

that the conjunction of these three workshops will accomplish much more than any of them could in isolation.

## **Background**

Drought is one of the costliest and most prevalent natural hazards on the Earth. In recent years within the U.S. alone, drought has resulted in average annual economic losses of \$6-8 Billion (US), and the worst droughts of the past 25 years led to losses exceeding \$40B (US). Drought and its impacts are not confined by any nation's borders. In North America, for example, severe drought during the past several years created concerns about shared water rights not only between states and interests within the U.S., but also between neighboring countries. Agriculture and farming interests were affected in all three countries (Canada, Mexico, and the U.S.), wildfire outbreaks forced the sharing of firefighting resources across borders, and municipalities were forced to levy water restrictions at various times in many parts of the continent. In the developing world, famine and human suffering are often the result of drought. As the demand for water resources has increased across the world due to population growth and economic expansion, naturally occurring droughts have created greater water crises as the already limited supply of this valuable resource is stretched thinner.

The growing threat of drought has prompted international collaboration on drought assessment, prediction, and mitigation on many continents:

- In 2001, government officials within the U.S., Mexico and Canada established a trilateral partnership to improve drought monitoring on the North American continent and provide decision makers with information essential to planning, mitigation and response activities. This was accomplished through the initiation of a North American Drought Monitor (NADM).
- Drought Monitoring Centers have been established on other continents, including eastern and southern Africa and southeastern Europe.
- Other international programs and agencies providing early warning for drought include: the World Meteorological Organization's (WMO's) World Weather Watch and World Climate Programme, the United Nations Food and Agriculture Organization's (FAO's) Global Information and Early Warning System (GIEWS) on food and agriculture, and the Famine Early Warning System (FEWS).
- U.S. and Canadian scientists are collaborating through the Group on Earth Observations (GEO) framework on three testbed and two drought studies related to drought indices and SWSI (Surface Water Supply Index) studies.
- The National Integrated Drought Information System (NIDIS), an internet portal system established for the U.S., is being expanded to provide web services for the NADM and data clearinghouse support for the broader international drought monitoring community.
- The World Meteorological Organization and the U.N. Convention to Combat Desertification were among the sponsors of an Inter-regional Workshop on Indices and Early Warning Systems for Drought (which was held in December 2009 in Lincoln, Nebraska) and are interested in establishing a drought portal with an international flavor.

Each of these efforts makes important progress toward addressing the problem of drought on an international scale. But success can be magnified if these efforts are part of a broader coordinated effort to work towards a global drought early warning system.