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**AWRA 2011 ANNUAL WATER RESOURCES CONFERENCE**  
**Albuquerque, New Mexico**

**November 7-10, 2011**

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**NATURAL CLIMATE VARIABILITY: A POTENTIALLY  
POWERFUL BUT OVERLOOKED WATER MANAGEMENT TOOL**

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**ABSTRACT:** The topic of climate change and its potential impacts on water supply in our country has become a high profile concern for water planners. Most of the studies to date have focused on the use of GCM scenario modeling of potential anthropogenic forced climate changes. Most climate researchers and modelers would agree that the main impacts of this influence would begin in period of time between 2045-2100. Prior to that time period natural variability forces in the climate would exert a more controlling influence. This paper explores the relationship of hydro-climate indices, upper atmosphere structure and sea surface conditions to snow pack and precipitation distribution during different climate regimes. If strong relationships exist, it is important to recognize them and use them to both provide guidance in normal water supply decision making and to understand the potential impacts of man on the climate. A drought management plan developed for Kerr Dam on the Flathead Reservoir in Montana requires a delicate balance between hydro-electric power generation, maintenance of a flood-pool, supply of a minimum downstream flow and the provision of a lake level that supports a multi-million dollar summer recreation business. The resulting plan uses hydro-climate indices as a leading indicator of both drought and flood years. Given the success of both this plan and other uses of hydro-climate indices on Colorado, Montana and Arizona the use of these indices to provide a baseline for natural and potential man-made influences on the climate are discussed.

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