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## Coping with Severe Sustained Drought in the Southwestern United States



### Re-examining a Series of Papers First Published in AWRA's October 1995 Issue of Water Resources Bulletin

Tree ring evidence showing that droughts of length and severity much greater than those observed in the region's historic record provided impetus for this study of the impacts of a severe sustained drought in the Colorado River Basin. With funding from federal and regional agencies channeled through the several state Water Resources Research Institutes, an interdisciplinary team from several southwestern universities and private research organizations was formed in the mid-1980s. The team consisted of specialists in hydrology, natural resources law and policy, sociology, environment and economics. The group worked for several years to the characterize and model the hydrologic, social, environmental and economic impacts of a 38 year period encompassing a drought similar to the most severe and long-lasting dry period identified in the tree ring record. The study team formulated and, using computer simulation and real time gaming experiments, assessed a series of potential policy responses. The basic policy evaluated was the existing "Law of the River" and the assessments extended to alternative institutional options, such as changes in river management procedures, changes in legal environment and short-term market-type exchanges.

During the past five years, precipitation has been unusually scarce in the Colorado River watershed, and as this is written in September 2004, Lake Powell and Lake Mead have been drawn down so that they contain only about half of capacity. If the climatic trend continues, power generation from Glen Canyon Dam on Lake Powell will be jeopardized and the upper basin states will face a "call on the river" requiring them to reduce their water uses so as to meet annual deliveries required by the Colorado River Compact.

While the study reproduced here could be extended with new research methods, new data, more geographic detail, and by assessing a wider scope of impacts, the policy proposals and their evaluations remain timely.

Given the rekindled interest in the study today, the Severe Sustained Drought research team thanks Hydrosphere, Inc. of Boulder, Colorado for preparing the original document for online presentation and the American Water Resources Association for making the papers available to the broadest possible audience.

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#### [Coping With a Severe Sustained Drought on the Colorado River: Introduction and Overview](#)

*Robert A. Young*

#### [The Tree Ring Record of Severe Sustained Drought](#)

*David Meko, Charles W. Stockton, W.R. Boggess*

#### [Hydrologic Scenarios for Severe Sustained Drought in the Southwestern United States](#)

*David G. Tarboton*

#### [The Law of The Colorado River: Coping with Severe Sustained Drought](#)

*Lawrence J. MacDonnell, David H Getches, William C. Hugenberg, Jr.*

#### [Institutional Options for the Colorado River](#)

*Douglas S. Kenney*

#### [Social Implications of Severe Sustained Drought: Case Studies in California and Colorado](#)

*Richard S. Krannich, Sean P. Keenan, Michael S. Walker, and Donald L. Hardesty*

#### [Assessing Environmental Effects of Severe Sustained Drought](#)

*Thomas B. Hardy*

#### [Competing Water Uses in the Southwestern United States: Valuing Drought Damages](#)

*James F. Booker and Bonnie G. Colby*

#### [Hydrologic and Economic Impacts of Drought Under Alternative Policy Responses](#)

*James F. Booker*

#### [A Gaming Evaluation of Colorado River Drought Management Institutional Options](#)

*James L. Henderson and William B. Lord*

#### [Mitigating Impacts of a Severe Sustained Drought on Colorado River Water Resources](#)

*Taiye B. Sangoyomi and Benjamin L. Harding*

#### [Managing the Colorado River in a Severe Sustained Drought: An Evaluation of Institutional Options](#)

*William B. Lord, James F. Booker, David M. Getches, Benjamin L. Harding, Douglas S. Kenney and Robert A. Young*

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*Benjamin L. Harding, Taiye B. Sangoyomi, and Elizabeth A. Payton*