

## ***Sustainable Water Management: Guidelines for Meeting the Needs of People and Nature in the Arid West***

*Betsy Woodhouse – Southwest Hydrology*

The issues surrounding water management are technically and legally complicated, presenting challenges to developing sound public policies. A new report from the Tucson-based Sonoran Institute, *Sustainable Water Management: Guidelines for Meeting the Needs of People and Nature in the Arid West*, explores the groundwater-surface water relationship and proposes a framework for sustainable water management. The report looks at these issues as applied to three Arizona river basins—the San Pedro, Santa Cruz, and Verde—and recommends water management policies that could allow the state to prosper while protecting its important river systems.

The report's suggested approach to sustainable water resources management has three primary objectives:

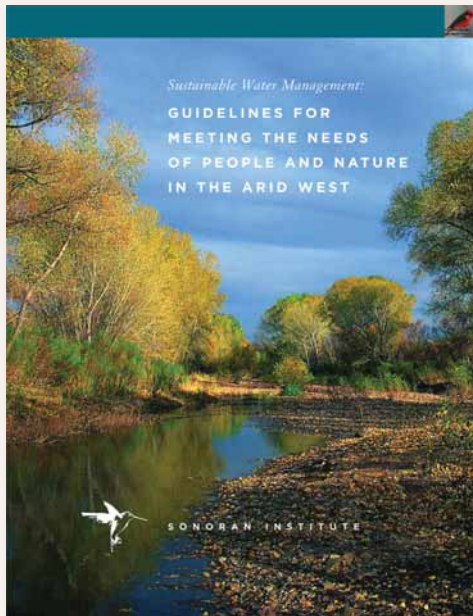
- provide for the needs of current and future residents of the area and those of downstream users, human and nonhuman;
- protect aquifer-stream system conditions sufficient to maintain acceptable baseflow and associated aquatic, wetland, and riparian habitats;
- protect restorative flood flows to maintain the stream channel and the aquatic, wetland, and riparian habitat conditions necessary for plants and animals to reproduce and grow.

Recommendations for attaining these objectives in Arizona include:

- resolve uncertainty over surface water rights (i.e., adjudicate);
- create new water-management authorities that can define water available for allocation, allocate water resources among new and existing users, and pursue supply augmentation strategies;
- pursue recharge and re-use projects to encourage more effective use of

existing water resources, including municipal effluent;

- improve international and regional cooperation.



At 52 pages with plenty of photographs and maps, the report is attractive, easy to read, and includes informative assessments of the state of the three river basins. But the sustainability guidelines are fairly general.

The Sonoran Institute had the report reviewed by 34 stakeholders from the three basins, including developers, farmers, ranchers, politicians, environmentalists, and engaged citizens. Their comments, summarized on the website, are applicable to any attempts to develop water management guidelines.

Reviewers strongly supported the broad concepts presented in the report, but said it is somewhat idealistic and general, and would be more useful if it better acknowledged existing social, economic, political, and legal frameworks within which water managers must operate. In addition, implementation details need to be worked out. Reviewers disagreed about whether local control is preferable, but agreed that a “one-size-fits-all” plan may not be appropriate. The report was viewed as having an environmentalist agenda, which some thought an advantage and some a disadvantage. Finally, reviewers unanimously cited the need to inform the public and policymakers about the value of the proposed approach.

*To view the 52-page report, executive summary of in-depth stakeholder interviews, and list of interview participants, visit [www.sonoran.org](http://www.sonoran.org).*



Ground-water flow model of the Sierra Vista subwatershed and Sonoran portions of the Upper San Pedro Basin, southeastern Arizona, United States, and northern Sonora, Mexico, by D.R. Pool and J.E. Dickinson.

<http://pubs.usgs.gov/sir/2006/5228/>

Flow velocity and sediment data collected during 1990 and 1991 at National Canyon, Colorado River, Arizona, by N.J. Hornewer and S.M. Wiele.

<http://pubs.usgs.gov/ds/2007/246/>

Simulation of multiscale ground-water flow in part of the northeastern San Joaquin Valley, California, by S.P. Phillips, C.T. Green, K.R. Burow, J.L. Shelton, and D.L. Rewis.

<http://pubs.usgs.gov/sir/2007/5009/>

Analysis of the magnitude and frequency of peak discharges for the Navajo Nation in Arizona, Utah, Colorado, and New Mexico, by S.D. Waltemeyer.

<http://pubs.usgs.gov/sir/2006/5306/>

U.S. Geological Survey Arizona Water Science Center • <http://az.water.usgs.gov>