How do we manage our interconnected surface water and groundwater systems? In most states, as separate systems. It is not difficult to see how this came about: surface water systems can more easily be observed and engineered; thus, regulation of this system developed earlier in history than that of the more complex groundwater systems. Yet the regulations have not kept up with our understanding of "hydrologic reality": The two systems are intertwined, and one cannot be managed effectively without consideration for the other. In recent decades, states have begun, in varying degrees, to recognize that reality, but political and other constraints make it a slow process. Southwest Hydrology thanks all the authors who contributed to this interesting and informative feature.

We'd once again like to emphasize that Southwest Hydrology is intended to be the product of all of you, our readers. We encourage you to contribute ideas and information. Upcoming features will cover remote monitoring techniques and applications, organic wastewater contaminants, the Colorado River Delta, and water as a commodity. If you know someone who could contribute in these areas, please let us know. In addition to the feature topic, we welcome any other news of interest to the hydrologic community – just give us a call or send an email.

In addition to our feature authors, we’d like to recognize all the contributors to this issue, listed on the opposite page. Furthermore, we extend our deep appreciation to all of our advertisers, who are integral to the continued production of this magazine.

Betsy Woodhouse
Editor

From the Supreme Court of Arizona, the 2000 Gila IV decision (see pages 15, 16). From the Supreme Court of Texas, the 1999 Sipriano v. Great Spring Waters of America, Inc. ruling (see page 24). Photograph: Santa Cruz River near Tucson, 1903, courtesy U.S Geological Survey, Tucson.
Groundwater / Surface Water: Managed or Litigated?

The “Law of the Biggest Pump” or laws for managed pumping? Water for the “first in time” or water for the streams? Can historic precedent be overruled? And, can “hydrologic reality” be legislated? This issue’s authors take a look at how surface water and groundwater are managed in the states of the Southwest, and more importantly, how historic precedent is slowly giving way to the technical realities of our greatest resource.

High and Dry in the West: The Failure to Integrate Management of Ground- and Surface-Water Resources

Robert Glennon, Esq.

Conjunctive management aims to coordinate groundwater and surface waters in order to obtain maximum economic benefits from both resources, but its utilitarian bent means that environmental factors are not considered.

Numerical Modeling Aids Evaluation of Pumping Impacts

Kathleen M. McHugh

Many state regulatory agencies are turning to numerical models to determine if impairment to a stream by a pumping well exists, if the pumped water in question can be legally considered underflow, or if the cone of depression reaches a subflow zone.

Interactive Groundwater/Surface-Water Regulation in Arizona

Michael J. Pearce, Esq.

The Arizona Supreme Court is currently wrestling with the interaction between surface water and groundwater, in view of the proliferation of wells near streams. However, some progressive water management programs are already in place.

Maximizing Conjunctive Use Opportunities in California: What’s the Holdup?

Scott S. Slater, Esq.

As much as 250 million acre-feet of usable storage capacity may exist in California’s groundwater basins; yet, despite professional and political enthusiasm for conjunctive use, institutional constraints continue to inhibit the full realization of its potential as a water management technique.

Regulation of Water Versus Hydrologic Reality in New Mexico

Peggy Barroll, Ph.D.

In New Mexico, permits to use groundwater in stream-connected basins are conditioned so that the aquifer and stream are managed conjunctively. As an upstream state, New Mexico faces the additional management requirement of ensuring that sufficient surface water flows to the downstream state in accordance with each compact.

Water Law in Nevada: The Example of Mines at the Surface-Water/Groundwater Interface

Richard W. Harris, Esq.

The complex relationship between surface water and groundwater is brought into sharp focus by the Nevada mining industry, where almost every large mine intersects the water table.

The Recent Evolution of Texas Water Policy and Law

Michael A. Gershon, Esq.

Although the Rule of Capture continues to survive only in Texas, the state legislature, judiciary, and regulatory agencies have made great strides in improving water management policy in recent years.