

# Southwest The Complete Hydrologic Resource HYDROLOGY

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Natural Resources  
Damage Assessments

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A bimonthly trade magazine for hydrologists, water managers, and other professionals working with water issues.



*From the Editor*

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We gratefully acknowledge the contribution of reader Steve Michelson of MECA Environmental Consultants, who convinced us that *Natural Resources Damage Assessments* is a topic of increasing importance to water professionals in our region. Steve not only presented the idea but helped develop the focus and introduced us to many of our feature authors.

*Natural Resources Damage* claims are likely to become increasingly prevalent in the Southwest, particularly for damages to groundwater and surface water. How to evaluate the value of these resources, either monetarily or with equivalent resources, is a considerable challenge. We thank our feature authors who present legal, economic, technical, industry, and trustees' perspectives on the topic.

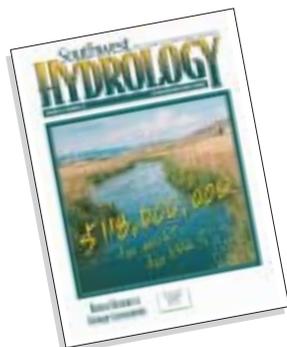
We introduce two new departments in this issue, **People** and **In Print**. **People** covers news of individuals in the water profession, including awards and new positions. **In Print** offers reviews and news of soon-to-be- or recently-released books of hydrologic interest in the Southwest.

Classified advertisements (page 32) are also new in this issue. No charge for the first two inches (about 100 words) of job announcements.

Finally, we welcome a new contribution from the Colorado School of Mine's International Ground Water Monitoring Center. They will be regularly providing reviews of modeling software.

We thank all the contributors to this issue (listed on opposite page), and encourage each of you to send us your news and ideas.

Betsy Woodhouse  
 Editor



Cover: Silver Bow Creek, in the Clark Fork River Basin, Montana. The State of Montana recently partially settled a lawsuit with ARCO for \$118 million for natural resource injuries in this area, plus an additional \$80 million for remediation of the creek. During this decade, approximately four million cubic yards of tailings will be hauled out by rail. The 22-mile long creek is presently being routed into ponds for lime treatment before returning to the Clark Fork River.



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# Natural Resources Damage Assessments

Natural Resource Damage Assessments of injuries to surface and ground water resources is expanding throughout the United States. In the Southwest, where water is scarce, precious to humans and the environment, and in many areas is depleted faster than it is replenished, the value of water is steadily increasing. As a result, NRDA claims for injury to water resources can mean big business to resource trustees and big losses to those responsible. The largest NRDA claim is currently underway in Albuquerque, New Mexico, where the resource trustees have valued the allegedly injured water resource at \$4 billion. In this issue our authors explore the basis for NRDA's and offer creative, lower-cost solutions.

– Steven I. Michelson, R.G., MECA

## 12 Environmental Restoration Through Natural Resources Damage Assessments

David Allen and Joshua Lipton, Ph.D.

The growing need for, and popularity of, environmental restoration has focused new attention on Natural Resources Damage Assessments. What is their basis, where are they occurring, and who is involved?

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The basic problem facing a natural resources trustee is to determine the damage to the environment. But how does one determine the costs of that damage?

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Steven I. Michelson, R.G.

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Rebecca de Neri Zagal and William M. Turner, Ph.D.

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Carol Fox, M.S.

Montana responds to ARCO's accusations: given a settlement of less than one-third the claim, the original restoration plan had to be modified.

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