

W A T E R R E S O U R C E S

# IMPACT

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## Basin Management Case Studies: Tools, Techniques, and Methods for Managing River Basins



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# BASIN MANAGEMENT CASE STUDIES: TOOLS, TECHNIQUES, AND METHODS FOR MANAGING RIVER BASINS

Guest Associate Editor • Gerald Sehlke  
gse@inel.gov

This issue of *Water Resources IMPACT* looks at five river basins in the western United States to gain insights into some unique tools, methods, and approaches that have been adapted to address a particular set of river basin management challenges that are being faced in each basin. These case studies provide a great diversity of insights and ideas that may be modified and implemented in other basins.

## OVERVIEW

- 3 Basin Management Case Studies: An Overview of Selected Tools, Techniques, and Methods for Managing River Basins**  
*Gerald Sehlke (gse@inel.gov)*

## FEATURE ARTICLES

- 5 Technical Tools to Aid in Conjunctive Management of Surface and Ground Water in the Snake River Basin**  
*Donna M. Cosgrove (cosgrove@if.uidaho.edu)*  
*Gary S. Johnson*  
In order to conjunctively manage surface and ground water resources we must be able to understanding the cause and effect relationships between ground water pumping (or recharge) and depletion (or accretion) of rivers, springs, and lakes. Tools and techniques have been developed to visualize and simplify interpretation of ground water modeling results to assist in the practical application of modeling to conjunctive management of water resources in the Upper Snake River Basin in Idaho.
- 10 The Glen Canyon Dam Adaptive Management Program**  
*Michael J. Liszewski (mjliszew@usgs.gov)*  
The Glen Canyon Adaptive Management Program measures the hydrological and ecological effects of Glen Canyon Dam operations on the resources associated with Lake Powell and the Colorado River from Glen Canyon Dam to Lake Mead. This paper provides an overview of the scientific program structure and processes and discusses some of the opportunities for utilizing an adaptive management approach in studying a large river basin.
- 14 The Rio Grande/Rio Bravo – A River of Change**  
*Vincent C. Tidwell (vctidwe@sandia.gov)*  
*Ari M. Michelsen, Javier Aparicio, and Howard D. Passell*  
The Rio Grande/Rio Bravo has played a long and important role in the development of the Southwestern United States and Northern Mexico; however, with development has come significant change to the river. Here we give a brief survey of the changing complexion of the Rio Grande, the programs aimed at understanding this change, and efforts to efficiently manage this change.
- 18 Impacts of Managing Water in a Closed Basin: The Walker River Basin Case Study**  
*John C. Tracy (tracy@dri.edu)*  
Balancing environmental concerns with water use in closed basins in the Western United States has become the latest challenge for water resource managers. To meet this challenge, new water management strategies must be employed that focus on reducing the consumptive use of water instead of retiming its delivery.
- 22 A New Approach to Integrating a Superfund 'Megasite' Cleanup Into Management of the Coeur d'Alene River Basin**  
*Kathryn Johnson (kjohnson@johnsonenviro.com)*  
*Roger Mayes and Paul Wichlacz*  
The state of Idaho created the Coeur d'Alene Basin Environmental Improvement Project Commission as a new approach to guide the cleanup of a complex EPA Superfund effort within the Coeur d'Alene Basin. Though it is still in its formative stages, the Commission represents a new model for managing a complex cleanup and incorporating broad stakeholder concerns on the basin scale.

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### JULY 2004

**RESPONSE TO CLIMATE PREDICTION**  
**J. ROLF OLSEN (GUEST EDITOR)**  
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### NOVEMBER 2004

**COASTAL ZONE MANAGEMENT**  
**ERIC J. FITCH ([\">fitche@marietta.edu](mailto:fitche@marietta.edu))\**

### JANUARY 2005

**HAWAII/PACIFIC RIM WATER QUESTIONS**  
**JASON K. LEVY ([jlevy@hawaii.edu](mailto:jlevy@hawaii.edu))**

All of the topics listed above are subject to change. For information concerning submitting an article to be included in the above issues, contact the designated Associate Editor or the Editor-In-Chief N. Earl Spangenberg at ([espangen@uwsp.edu](mailto:espangen@uwsp.edu)).



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