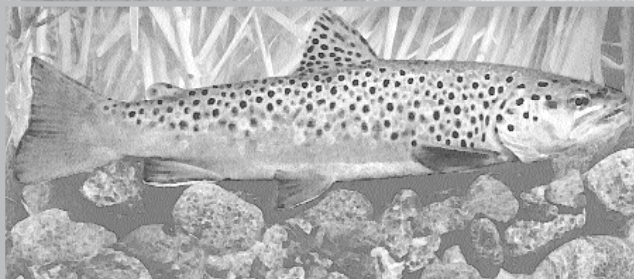


# Arkansas River Water Needs Assessment



A cooperative effort of the:

USDI Bureau of Land Management

USDI Bureau of Reclamation

USDA Forest Service

Colorado Department of Natural Resources

Edited by Roy E. Smith and Linda M. Hill

Though this document was produced through an interagency effort,  
the following BLM number has been assigned for tracking and administrative purposes:

BLM/RS/ST-00/002+7200

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July 2000



# Letter to Arkansas River Stakeholders

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The agencies that conducted this study and created this report are jointly responsible, subject to existing rights, for managing the Arkansas River corridor and its associated reservoirs between Leadville and Pueblo Reservoir. In 1993, these agencies signed a memorandum of understanding with the goal of creating a scientific foundation for river management processes. The outcome was a 6-year study that resulted in agreement among the agencies on the facts and assumptions that should be used in making river management decisions.

The agencies are pleased to publish and distribute this final report, which contains peer-reviewed results that we believe will stand up to scientific scrutiny. We anticipate that the information in this report will be used for developing flow recommendations and for other river management decisions starting in calendar year 2001 and beyond.

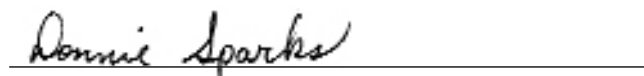
It is important to keep in mind that this report does not contain flow management recommenda-

tions, but rather, is only an information base for agency and public deliberations. The agencies recognize that our river management decisions are limited by the necessity to supply water for domestic, agricultural, and other uses in the basin consistent with existing water rights held by water users. The cooperating agencies have a renewed commitment to work cooperatively with water users to fulfill legal entitlements to water deliveries while managing the river in a way that supports natural resource and recreation values to the greatest extent possible within these constraints.

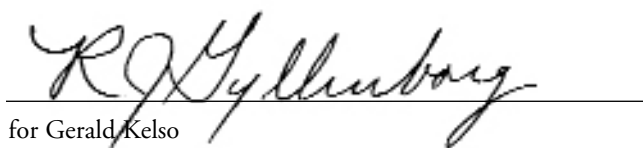
The cooperating agencies intend that this report will be used in concert with the Storage Needs Assessment currently being spearheaded by the Southeastern Colorado Water Conservancy District, along with the new management plan for the Upper Arkansas Headwaters Recreation Area. We hope that this knowledge foundation will produce improved dialogue and new ideas among all those with a stake in river management.



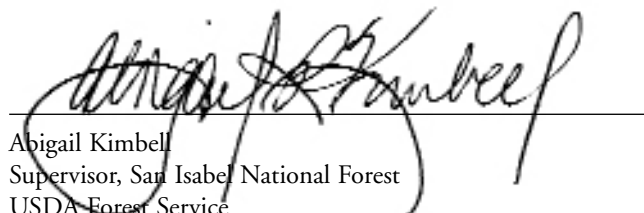
Greg Walcher  
Director  
Colorado Department of Natural Resources



Donnie Sparks  
Manager, Royal Gorge Field Office  
USDI Bureau of Land Management



for Gerald Kelso  
Acting Manager, Eastern Colorado Area Office  
USDI Bureau of Reclamation



Abigail Kimbel  
Supervisor, San Isabel National Forest  
USDA Forest Service



# Preface

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Each section of the *Arkansas River Water Needs Assessment* contains information that may be useful for a variety of purposes. However, each section is just a part of the overall *Arkansas River Water Needs Assessment* and the information contained therein should not be taken out of context or considered in isolation. Decisions regarding riverflows and reservoir levels should consider the findings of the assessment as a whole, while also recognizing that such decisions are limited by the necessity to supply water for domestic, agricultural, and other uses in the basin consistent with existing water rights held by water users. A summary of the entire assessment can be found in Section 1 of this report.



# Acknowledgments

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This assessment could not have been completed without an extensive amount of coordination and cooperation among the participating agencies. The following individuals participated in interagency workgroups throughout the assessment and are recognized for the significant amount of time and resources they invested in conducting various studies and documenting the findings in this report:

**Water Workgroup:** Bill Carey (Bureau of Land Management), John Gierard (formerly Bureau of Reclamation, now Western Area Power Administration), Dan Muller (Bureau of Land Management), Roy Smith (Bureau of Land Management), Steve Swanson (Bureau of Land Management), and Steve Witte (Colorado Division of Water Resources).

**Biological Workgroup:** Clay Bridges (Bureau of Land Management, retired), Mark Elkins (Colorado Division of Wildlife), Dave Gilbert (Bureau of Land Management), Doug Krieger (Colorado Division of Wildlife), Greg Policky (Colorado Division of Wildlife), and Rich Roline (Bureau of Reclamation).

**Recreation Workgroup:** Mike French (Colorado Division of Parks and Outdoor Recreation), Steve Reese (Colorado Division of Parks and Outdoor Recreation, retired), Mike Sugaski (U.S. Forest Service), and Dave Taliaferro (Bureau of Land Management).

**Editorial and Graphics Workgroup:** Linda Hill (Bureau of Land Management) and Jennifer Kapus (Bureau of Land Management).

The assessment team was guided throughout the process by a management advisory group, which was established through a formal memorandum of understanding. The members of this group are recognized for being responsive to the study team's needs and providing helpful advice, on

numerous occasions, regarding controversial issues that arose during the study: Levi Deike (Bureau of Land Management), Dave Giger (Colorado Division of Parks and Outdoor Recreation), Alice Johns (Bureau of Reclamation), Dan McAuliffe (Colorado Department of Natural Resources), and Donnie Sparks (Bureau of Land Management).

During the assessment process, the services of several individuals were acquired through contracts and an interagency agreement. The timely deliverables, extraordinary assistance, and dedication to the assessment of these individuals under these formal arrangements were extremely appreciated. Kip Bossong (U.S. Geological Survey) compiled and analyzed a large amount of historic data, which significantly aided the streamflow analyses in this report. Bruce DiGennaro (formerly EDAW) provided a wealth of insight and strategy towards completing the recreation user surveys and assessment. Teresa Rice (formerly University of Colorado Natural Resource Law Center) completed an enormous amount of research on water uses and institutions. Both Bruce and Teresa wrote reports that are of such quality they could stand alone as exhaustive treatments of their respective assignments.

Certain individuals who were responsible for initiating preliminary discussions and studies leading to this assessment deserve special thanks for their vision and support. They include: Mac Berta (Bureau of Land Management, retired), Jim Fogg (Bureau of Land Management), Jack Garner (Bureau of Reclamation), Larry MacDonnell (formerly University of Colorado Natural Resource Law Center), Steve Norris (Colorado Division of Wildlife), Don Prichard (Bureau of Land Management), Donnie Sparks (Bureau of Land Management), Steve Vandas (U.S. Geological Survey), and Pete Zwaneveld (Bureau of Land Management).

Several individuals provided the team with helpful insight and reviews of documents. In particular,

we acknowledge the following individuals for their commitment to participating in meetings and providing review comments:

Legal and Institutional Analysis Advisory Group: Carl Genova (Southeastern Colorado Water Conservancy District), Denzel Goodwin (Upper Arkansas River Water Conservation District), Alan Hamel (Pueblo Board of Water Works), Steven Kastner (Colorado Division of Water Resources), Phil Saletta (Colorado Springs Utilities), and Tom Simpson (Southeastern Colorado Water Conservancy District).

Biology, Hydrology, and Recreation Peer Reviewers: Mark Butler (U.S. Fish and Wildlife Service), Paul Flack (Colorado

Division of Parks and Outdoor Recreation), Bill Hagdorn (Bureau of Land Management), Mike Lewis (U.S. Geological Survey), Rich Niemeyer (National Park Service), Scott Schuler (U.S. Forest Service), and Jay Thompson (Bureau of Land Management).

Advisor on Reservoir Operations: Tom Gibbens (Bureau of Reclamation, retired).

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