Final Report

Colorado River Basin Management Study

A report to the Bureau of Reclamation
April 1997

Produced by:

Grand Canyon Trust
under Cooperative Agreement
#4-FC-30-0027

Executive Summary

Never has the Colorado River been called upon to provide so much to so many.

The Colorado River drains 240,000 square miles of the arid Southwest, nearly 1/12 of the continental U.S. Initially developed to promote irrigated agriculture, the river now provides a variety of consumptive and non-consumptive resources to a diverse set of stakeholders. The principal river in an arid region, the Colorado has always represented life itself. But, while its consumptive values for agriculture and drinking water remain high, over the past several decades the river's waters have come to mean more than simply economic prosperity. Increasingly, it provides recreation and aesthetic values to a rapidly urbanizing region. For more than 500 miles in the center of the basin, the river runs through national park lands, a national heritage. Drinking water demands from growing regional populations and Native American water rights claims increase demands on the river. Threatened or endangered native species and their habitats exist in many sections of the river. The rising importance of non-consumptive uses such as recreation, aesthetics, and the recognition of the need to protect cultural and natural resources complicate management. Fifty years ago the challenge was harnessing the river to deliver its water efficiently. Today we face the challenge of satisfying even greater demands placed on the river.

Management of the water and related resources in the Colorado River basin is undergoing great change. The lower basin states completely used their water allocations under the Colorado River Compact for the first time in 1996. The operations of Glen Canyon Dam have been altered to incorporate protection of the environmental and cultural resources of Grand Canyon National Park. Serious discussions to transfer water between states and even between upper and lower basins are underway. Several inclusive partnerships to recover endangered species at the state and basin level are in progress.

These changes are occurring for a variety of reasons. There have been fundamental changes in the economics and demographics of the region. While the basin itself remains largely rural and agricultural, the surrounding regions are dominated by fast-growing urban areas. The restructuring of the utility industry and increased funding for environmental protection have forced changes to the river's hydroelectric resource. Greater demands for recreation and non-consumptive uses of water compete with traditional irrigation. Societal values favor even greater environmental protection and species restoration. Native American voices, long ignored, are more effectively entering the management process.

In 1994, Grand Canyon Trust entered a cooperative, cost-sharing agreement with the Bureau of Reclamation to identify basin management issues and to describe thoughtful perspectives about current and future management of water and related resources. More than 650 stakeholders, reflecting a diversity of interests from across the basin and service areas, participated in the Colorado River Basin Management Study. This diverse group identified critical management issues that face, or will face, the managers and stakeholders. The Colorado River Workshop, organized as part of this study, provided a forum that allowed many of these historically contentious stakeholders to successfully come together and discuss these critical issues.

From the number and diversity of issues identified, it is clear that even greater challenges in the use and management of Colorado River resources lie ahead. The successful resolution of these challenges depends on effective management. There is a tendency to focus debate on whether or not the extensive body of laws, treaties, and compacts, known as the Law of the River, is broken. But such a debate may deflect attention from more pressing issues of basin management. Throughout the study participants from all interest groups suggested changes in current management, but few suggested discarding it entirely. Colorado River management has evolved over time to address the river's issues. That framework provides continuity and gives confidence to stakeholders. It can be expected that management will continue to adapt to resolve present and future basin issues.

Federal, regional, state, and local managers are attempting to address these changes, but change is often painful. The issues are complex, including not simply economic but significant components of lifestyle, land use, property rights, and cultural heritage. Rural stakeholders shared concerns that their community base is being threatened and often feel powerless to oppose it. Native Americans and other stakeholders expressed anger that their voices continue to fall on deaf ears. The aesthetic values of water, often expressed as free-flowing rivers, exists in irrigated fields and city parks as well. The protection of cultural resources within the basin is of increasing concern. Conservation and environmental protection are part of management in every corner of the basin. But the size of the basin and the complexity of the issues make solutions elusive.

Perhaps the most common theme in our conversations with many stakeholders across the basin is the overwhelming number and diversity of issues facing basin management today. In spite of that, we discovered a high degree of optimism from stakeholders that creative solutions will be found. We were impressed with the strong, diverse support for such cooperative efforts as the Upper Colorado River Fish Recovery Program, Colorado River Work Group, Colorado River Basin Salinity Control Forum, Glen Canyon Adaptive Management Work Group, Colorado River Wildlife Council and the recently initiated Lower Colorado River Multi-Species Habitat Conservation Plan. While not immune to criticism, these and similar efforts are grappling with what were described by stakeholders as the essential components of effective management: greater inclusiveness of interests and issues, more effective coordination and strategic planning, and better information integration. The success of these processes is sufficient to suggest that their lessons be extended throughout the basin. The strategies outlined in this report do not suggest the need to radically redirect current management approaches. Instead, they support and build on creative work going on across the basin.

This study was not without controversy. A partnership between a federal management agency and a regional conservation organization was met with suspicion in many quarters. Yet throughout the study appreciation was voiced by many parties for the opportunity to present their concerns. We found basin stakeholders to be as deeply involved in finding solutions as with finding fault. More often than not stakeholder comments were articulated in the form of suggestions for steps to remedy their concerns and several common elements emerged. Among these were better education, communication, information, understanding, coordination, planning, identification, flexibility, and cooperation at all levels of management. While many suggested the need for these components at the basin level, others argued for more regional or local control. Regardless of where they would be implemented the following components were found to be a consistent part of the solutions suggested by Colorado River basin stakeholders.

CRITICAL COMPONENTS OF BASIN MANAGEMENT

Discussions throughout the study suggested that the next 75 years of Colorado River basin management will be fundamentally different from the past 75 years. Stakeholders urged broader stakeholder participation to integrate tribal, recreation, environmental, and other interest groups into the process. It was evident that future management should incorporate the values of natural resource protection, aesthetics, and recreation along with traditional consumptive uses. Future challenges should focus on balancing the increasing demands on the river's limited resources and incorporating the scientific knowledge available in its decisions.

Several components of basin management repeatedly surfaced in stakeholder comments and during discussions at the Colorado River Workshop. These are not entirely new elements and are evident to varying extents in many of the processes presently underway across the basin. The following critical components of basin management wove a common thread throughout the study discussions.

COORDINATION AND INTEGRATION IN MANAGEMENT

It is evident that the solutions to the complex and interconnected issues of the Colorado River basin span regional, state, and water district boundaries. Participants repeatedly voiced frustration with a lack of coordination and integration across these boundaries. In the future, these components will become increasingly important to achieving effective basin management. Many current processes embrace this component, yet opportunities exist throughout the basin for better coordination between individual groups and processes.

BROAD STAKEHOLDER INVOLVEMENT

Historically many stakeholder groups have not participated in basin management. Foremost among these have been the Native American tribes who, as sovereign nations, have a special relationship with the federal government. But environmental, recreation, and other non-consumptive groups have been absent as well. Despite vocal concerns by some over the potential loss of control, participants voiced strong support for the inclusion of all stakeholders in management processes.

INTEGRATION OF SCIENTIFIC KNOWLEDGE INTO MANAGEMENT

At one time the need for technical expertise in management was limited to water storage and power generation. An increasing emphasis on the protection of natural and cultural resources demands that additional knowledge be included in management. The challenge lies not only in acquiring this knowledge, but in putting it to use. Managers spoke of being awash in data but struggling with a process for incorporating that information into management decisions. Others commented on the need for better coordination between scientists and managers. From the comments in the study, these needs will continue to increase.

A CLEAR, BASIN-WIDE VISION

For 75 years, basin management has focused on fully developing the waters of the Colorado River for consumptive purposes. It was apparent from participant's comments that economic, demographic, and social changes in and around the basin have rendered that vision incomplete. It is clear that consumptive uses will remain important benefits, but a variety of other benefits must also be incorporated. The issue of a changing vision for the basin lies at the heart of many of the most contentious management debates. But common ground exists as well. While there may not be consensus on a single, basin-wide vision, basic commonalities exist which could greatly improve the effectiveness of decision making in the basin.

SUGGESTED APPROACHES FOR EFFECTIVE MANAGEMENT

The Bureau of Reclamation, with its technical resources and long history in water resource management, is in a unique position to provide continued leadership within the basin. While no single entity can guarantee all of the critical components identified within this study--better coordination, greater stakeholder involvement, integration of science into management actions, and the definition of a common basin vision--Reclamation's commitment to these components can greatly encourage and enhance these changes. There are examples of individual processes within the basin that are striving to be inclusive and extend beyond traditional political boundaries and many study participants supported the formation of larger regional institutions to facilitate communication, integration, and cooperation. But others adamantly argued that such institutions would be infeasible, ineffective, or unnecessary. Regardless of the outcome of that debate, Reclamation, with responsibilities and a presence across the basin, can greatly aid the stakeholders of the region in achieving the critical components identified in this study. The following approaches will foster, promote, and facilitate more efficient, integrated management of the resources of the Colorado River basin within the current institutional structure.

In this contentious region, facilitation and control are very different things. While each of these actions is consistent with Reclamation's responsibilities and mission, they should be approached cooperatively with the basin states, various tribes, state and federal management agencies, water users, and other stakeholders. Each presents a significant and positive step toward more effective basin management, supporting current efforts throughout the basin and reinforcing local and regional managers.

ENHANCING BASIN COMMUNICATIONS

At present there is a limited communication network throughout the basin. While good communication often exists within individual processes, there is no link between basin managers and stakeholders that spans the geographical and political boundaries of the basin. Reclamation, with its broad knowledge of basin management, can encourage that central communication link. Such a communication network could take several forms: a frequent newsletter, an electronic bulletin board, or a series of regional forums are suggestions. The network should engage tribes, environmental groups, small water districts, and other interested stakeholders of basin management on current issues, processes, and decision points. Better communication and transfer of knowledge will be key elements to solving the increasingly complex issues of basin management.

DEVELOPING A BASIN-WIDE VISION

A basin-wide vision cannot simply be articulated, it must incrementally evolve within processes that include all stakeholders. We urge Reclamation to build on the success of the Colorado River Workshop by providing a vehicle for parties to begin to create a new vision for the future of the Colorado River. Annual forums, or a series of smaller forums, to discuss basin issues would allow stakeholders to incrementally move toward a vision outside the contentious confines of other management processes. Regular, open discussion provides greater understanding between parties and increases the potential for issue resolution.

COLLECT AND INTEGRATE SCIENTIFIC KNOWLEDGE

The increasing need to provide for ecosystem health along with water storage and power production necessitates an effective method of integrating expanding scientific knowledge into management. Fundamental to accomplishing this task is a solid understanding of the present state of knowledge. There is a need for a central clearing house for the scientific knowledge that is quickly accumulating. Such an effort could take many forms. Much of the current research is housed in universities, state and federal agencies, and private research institutions across the country. An alternative to the traditional archives approach would be an electronic “center” that could provide managers, users, and stakeholders with references and data links to information housed elsewhere. Seminars and workshops on basin issues, such as the upcoming Glen Canyon Dam Flood Flow Workshop could be sponsored in cooperation with states, tribes, water-users, and environmental groups to better educate the public.