

# Consensus versus Conservation in the Upper Colorado River Basin Recovery Implementation Program

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**Abstract:** *We examined consensus-based management through the lens of the Colorado River Recovery Implementation Program, a consensus-based plan that attempts to develop the Colorado River's water while protecting its endangered fishes. Because this management model has been touted as a preferred substitute to government-imposed regulation, we analyzed the recovery implementation program to determine its strengths and weaknesses. By reviewing secondary information and interviewing members of the diverse groups involved in the program, we gathered detailed information about the program's history, implementation, and progress. Our investigation revealed that the recovery implementation program has allowed development of the Colorado River's water and incorporated more voices into the decision-making process. But the program circumvented federal authority over endangered species conservation, which has proved detrimental to the fishes. Furthermore, we learned that the consensus-based model is vulnerable to control by special-interests and may be driven by bureaucratic procedural goals rather than species recovery. To ameliorate these concerns, (1) program success should be judged by species recovery, rather than political achievements, (2) the federal government should retain the power of issuing statutory sanctions in the event of continued population decline, and (3) funding should be provided by an agency with a clear species-protection agenda to reduce the disproportionate power of utilitarian interest groups. By incorporating these recommendations, conservation programs can better realize the benefits of a consensus-based approach without sacrificing species recovery.*

Consenso versus Conservación en el Programa de Implementación de la Recuperación de la Cuenca Alta del Río Colorado

**Resumen:** *Examinamos el manejo basado en consenso tomando como ejemplo el Programa de Implementación de la Recuperación del Río Colorado, un plan basado en consenso que intenta desarrollar las aguas del Río Colorado y al mismo tiempo proteger a sus peces en peligro. Debido a que este modelo de manejo ha sido elogiado como el sustituto preferido de la regulación gubernamental impuesta, analizamos el programa de implementación de la recuperación para determinar sus fortalezas y debilidades. Reunimos información detallada de la historia, implementación y progreso del programa mediante la revisión de información secundaria y entrevistas con los diversos grupos involucrados en el programa. Nuestra investigación reveló que el programa de implementación de la recuperación ha permitido el desarrollo de las aguas del Río Colorado y la incorporación de más voces en la toma de decisiones. Sin embargo, el programa evadió a la autoridad federal sobre la conservación de especies en peligro y fue perjudicial para los peces. Más aun, el modelo basado en consenso fue vulnerable al dominio de intereses especiales, y pudo haber sido conducido por metas de procedimientos burocráticos y no de recuperación de especies. Para reducir estas inquietudes: (1) el éxito del programa debe juzgarse por la recuperación de especies, no por logros políticos, (2) el gobierno federal debiera mantener la atribución de fijar sanciones estatutarias en caso de declinación poblacional continua, y (3) una agencia con una visión clara de protección de especies debe asignar el financiamiento para*

*disminuir el desproporcionado poder de los grupos con intereses utilitarios. Incorporando estas recomendaciones, los programas de conservación comprenderán mejor los beneficios de un enfoque basado en el consenso sin sacrificar la recuperación de especies.*

## Introduction

Consensus-based management has been lauded as an effective way to integrate the full spectrum of opinion into regional environmental decision making (Paulson 1998). Although a valuable tool in natural-resource protection and in implementation of the U.S. Endangered Species Act (ESA), consensus-based management has its flaws. In fact, our research suggests that the emphasis consensus-based management places on cooperation and agreement may actually harm the protected resource. The compromise required for consensus often demands participants to forego habitat protection; instead, the fate of the species becomes secondary to the political process itself. Given this tradeoff, consensus-based management might not be the most effective approach to resolving complex conservation issues.

We examined these problems using the Upper Colorado River Basin Recovery Implementation Program as a case study. The Colorado River Recovery Program is a particularly interesting backdrop for examining consensus-based management because it crystallizes the conflict between economic development and wildlife viability. Since the creation of the Colorado River Compact in 1922, countless irrigation projects, dams, and other water depletions have tamed the river and diminished its native fish populations (Behnke & Benson 1980; Minckley et al. 1991; Martinez et al. 1994; Stanford & Nelson 1994). Together with fish poisonings and the introduction of exotic sportfish to the Colorado River, water development has all but eradicated native fishes (Holden 1973; Holden 1991). The recovery program was established to recover native fish species while maintaining or increasing the amount of water diverted from the river (Colorado River Recovery Implementation Program 1987).

## Methods

We based our analysis on careful examination of the program's history, implementation, and progress. First, we gathered and reviewed secondary information about the fishes' habitat requirements from the U.S. Fish and Wildlife Service (USFWS), general coverage about the river and recovery-program history from local newspapers, and legal issues related to the program addressed in law review articles and case law. In addition, we examined the USFWS's detailed appraisals of the program's prog-

ress (in the form of progress reports and annual status reports) to assess its achievements and setbacks. Second, we identified diverse constituent groups involved in the program, targeted representatives from each group, and conducted in-depth telephone and email interviews with 22 informants representing environmental groups, state agencies, federal agencies, water users, fish biologists, hydrologists, and academics (Table 1). We asked interviewees about their involvement in the program and their perceptions of its scientific foundation, implementation progress, bureaucratic difficulties, and needed improvements. Although the results of the interviews were transcribed and are incorporated into this paper, sources remain anonymous by request.

## Background

The Colorado River Recovery Implementation Program was initiated in a 1987 Cooperative Agreement as an attempt to allow continued development of water resources of the Upper Colorado River while still protecting its rare fishes (Colorado pikeminnow [*Ptychocheilus lucius*]; humpback chub [*Gila elegans*]; razorback sucker [*Xyrauchen texanus*]; and bonytail chub [*Gila cypha*]) (Shields 1998). Recovery-program participants included representatives from the USFWS; the U.S. Bureau of Reclamation; the states of Colorado, Utah, and Wyoming; water users; and environmental groups. Given this wide array of interested parties, the recovery program was initiated to create a model of consensus-based decision making which would allow for increased nonfederal participation in the planning and implementation process.

**Table 1. Contacts for interviews of participants in the Upper Colorado River Basin Recovery Implementation Program.**

Contact type	No. contacted through phone interview or email	No. contacted that serve on program committees
Environmentalist	5	1
State agency representative	6	1
Federal agency representative	2	1
Water user representative	1	1
Fish biologist and hydrologist	6	1
Law professor	2	0

According to participants, the program was formed in reaction to escalating debates over water rights, flow recommendations, and declining fish health.

During the early and mid-1980s, the Colorado Basin states became increasingly aware that a failure to recover the endangered fishes could impede continued water development. In particular, developers feared the force of the ESA, "the most comprehensive legislation for the preservation of endangered species ever enacted by any nation" (*Tennessee Valley Authority v. Hill* 1978). Indeed, pursuant to the ESA, water users had to participate in a federal permitting process prior to the approval of each proposed development (Shields 1998). The proposed water-development project would be denied if it were considered a threat, or "jeopardy," to a listed species, unless the developer proposed a satisfactory "reasonable and prudent alternative" for the anticipated effect (ESA 1973). Water users feared that the government would construe the reduced stream flow associated with continued development as jeopardizing the listed fishes, forcing them to forego water use to secure instream flows.

To deal with the potential impasse between conservation and development, Colorado, Utah, and Wyoming were faced with the choice of litigating, attempting to amend the ESA, halting water development, or negotiating a solution (Lochhead 1996). A regional foundation for negotiations was laid in the early 1980s, when the states and water users joined to lobby against recovery plans that the USFWS had proposed for the fishes. In 1984 the USFWS, the Bureau of Reclamation, and the states drafted a memorandum of understanding allowing the USFWS to use a program of reasonable and prudent alternatives in evaluating the effects of water development and depletion on the fishes, while recognizing state water laws and traditional water apportionments. Three years of negotiations and public comment followed, finally resulting in the 1987 Colorado River Recovery Implementation Program.

These collective efforts have led to some notable achievements. For example, the recovery program has precipitated research on the rare and poorly documented Colorado River fishes. It has also facilitated development of scarce water resources: over 200 water development projects involving nearly 700,000 acre-feet (863 million cubic meters) of water have been approved since 1988, and not one has been litigated under the ESA (Shields 1998). Furthermore, and perhaps most important, all relevant stakeholders have been included, at least superficially, in the lengthy decision-making process.

Nonetheless, fish populations are not recovering (Tyus 1992; Bolin 1993; Stanford & Nelson 1994; Modde et al. 1996; Modde & Wick 1997). By the most optimistic population estimates, the fishes' numbers have not changed during the recovery program's lifetime; at worst, two of the species are thought to have been locally extirpated

(Tyus 1992; Bolin 1993; Stanford & Nelson 1994; Colorado River Recovery Implementation Program 1996). Thus, although negotiations have successfully allowed water development, the fishes seem likely to remain on the endangered species list for the indeterminate future.

Although the recovery program has certainly facilitated agreements between diverse constituencies, its failure at species recovery must not be overlooked. Advocates of consensus-based management hail its benefits in terms of multiple-constituent participation, but the key indicator of success should be based on achievements toward recovery, not on whether participants communicate openly as populations decline. We attribute the program's failure to increase fish populations to two major weaknesses in the consensus-based approach: (1) participants are preoccupied with political agendas rather than species recovery, rendering the fate of the fishes a secondary goal to the process itself, and (2) although all relevant stakeholders participate in the recovery program, not all voices carry equal power.

### Procedural Politics and Programmatic Goals

To accomplish the goals of developing water and helping the fishes, the recovery program enumerates five elements: habitat management; habitat development and maintenance; native fish stocking; non-native species management; and research, monitoring, and data management (Colorado River Recovery Implementation Program 1987). The USFWS has determined that progress on these recovery elements will adequately offset the adverse effects of water project development (Lochhead 1996). Therefore, pursuant to the ESA, the program's recovery projects serve as a reasonable and prudent alternative to jeopardy determinations for development plans (Lochhead 1996). As such, the existence of a consensus-based recovery program prevents a federally mandated moratorium on water development.

In measuring progress, the recovery program does not focus on the status of fish populations but rather on checklists included in the annual status reports that delineate program accomplishments (Colorado River Recovery Implementation Program 1997a, 1998a, 1999). The status reports and related sufficient-progress reports theoretically assure the program director that the program is serving as a reasonable and prudent alternative to jeopardy (Colorado River Recovery Implementation Program 1997b, 1998b).

Although each report mentions fish populations, program success has actually been measured by bureaucratic achievement. As a prime example, meeting a certain target for native fish stocking is considered a success regardless of the long-term effects on the existing population. Presumably, these mitigation measures offset the harmful biological effects of continued devel-

opment. As long as particular program actions are implemented, program participants assume that the program is successful. This checklist approach advances bureaucracy but does little to advance actual recovery.

If success were measured by population changes, the recovery program would likely be judged a failure. Although it is extraordinarily difficult to measure small fish populations and the available evidence is hardly uniform, scientific evidence seems to show that populations continue to decline (Stanford & Nelson 1994). Many local biologists believe the fishes will never be removed from the endangered list and will require human intervention (through the continued implementation of the recovery program) in perpetuity. Some biologists argue that achieving delisting of a species has little to do with the biological recovery of that species. They insist that the ESA's numerical requirements for delisting do not correspond with the species' ecological resilience. Thus, although the recovery program may reach its individual project goals, it may not achieve the ultimate goal of species recovery.

Because of the subjective measures of programmatic progress, participants often cannot agree on which actions are successes and which are failures. Likewise, because there is no universal agreement on the program's direction, participants mistrust the motives of other participants. Many fear that their colleagues are pursuing political rather than biological goals, to the detriment of the fishes. This may be true. For instance, one participating scientist worries that environmental representatives are more concerned about the reauthorization of the ESA than about endangered fishes. Thus the conflicted motives of some environmentalists have weakened their collective voice, leading to a more broad-scale pattern of goal displacement. This pattern, best described as displacement behavior, is a sociological phenomenon in which "the organizational means become transformed into ends-in-themselves and displace the principal goals of the organization" (Merton 1957).

Displacement behavior is pervasive throughout the program. It has caused constituents to overlook difficult issues and focus on simple, attainable goals that only marginally benefit the fishes. Just as environmentalists have superimposed ESA reauthorization onto the Colorado River conflict, the program has shifted its focus from water and habitat management to activities such as population stocking. According to one program participant, the Colorado Division of Wildlife has chosen to support fish hatcheries rather than focus on key threats, such as sport fishing in native fish habitat. Similarly, water users support non-native fish eradication rather than address problems of flow management. After all, it is easier to construct fish hatcheries and control non-native species than to restrict human water usage.

This displacement behavior has caused the recovery program to focus on procedural progress and consensus

among program participants rather than on the more relevant problems of the fishes. Conveniently, because the bureaucratic process has superceded recovery, no one is responsible for the fate of the fishes. Blame for declining populations is displaced to the recovery program bureaucracy rather than resting with program participants or relevant agencies. People within the program can certainly claim success when individual components are implemented, but no one is forced to consider the bigger picture. As a former state agency director has asked, "if the recovery implementation program succeeds in implementing the actions identified in the [plan], but the species populations do not respond as expected, who should bear the consequences?" As it stands, no one bears responsibility for population declines.

### **Discrepancy in the Power of Participating Voices**

Although the recovery program's consensus-based approach involves all relevant stakeholders, global participation does not assure each voice equal weight. The program suffers from inequality in constituent voices due to political and fiscal power discrepancies, differing degrees of clarity of purpose among interest groups, and pervasive scientific uncertainty.

One participant expressed concern that water users dominate the program because they control program funding. In fact, the water developers have employed a lobbying group that works closely with USFWS representatives. Together, this team presents funding proposals to the U.S. Congress. Hydropower production, ostensibly managed by the Bureau of Reclamation and the Western Area Power Administration, yet also promoted by water developers, provides the remaining programmatic funding. Because the USFWS and other participants rely on the support and influence of water users and power production to secure funding, little resistance is offered to their proposals for water management and development.

In addition to political and fiscal causes for the power differential, the interest groups also have differing degrees of consensus about goals among their own constituents. The water developers unilaterally seek to profit from the exploitation of the Colorado River's hydrological resources. In contrast, the environmentalists represent a broader constituency and thus lack a comparable clarity of purpose. Many environmentalists agree that the recovery program has failed to help the fishes, yet the community as a whole has not agreed on an alternative. Some want to eliminate the existing recovery program and develop a new recovery strategy. Others believe this would ultimately harm the fishes because of the resulting reduction of funding for scientific research. Still others are loath to oppose the recovery program for fear of jeopardizing reauthorization of the ESA.

Historically, environmentalists have been successful with lawsuits involving species listings and critical habitat, but such victories are not always easy. For instance, the Sierra Club Legal Defense Fund (now EarthJustice Legal Defense Fund) had to wage a difficult lawsuit to attain endangered status and critical habitat designation for the razorback sucker (*Xyrauchen texanus*) (*Colorado Wildlife Federation v. Turner* 1992). Environmentalists are therefore uncertain whether a legal challenge to the recovery program would improve the plight of the fishes, especially because they fear a Pyrrhic victory. This uncertainty makes the environmentalists' political voice weaker than that of the more unified water users.

The program's consensus requirement exacerbates this power disparity and has been highlighted by participants as an impediment to progress. A consensus rule means that each interest group holds veto power. According to one participant, the veto has sometimes prevented "bad" actions but has more often resulted in inactivity and marginal policies. The consensus model would benefit from a provision preventing such unilateral stonewalling by individual interest groups.

## Recommendations

With increasing emphasis on "big science" in attempts to manage endangered species and habitats, the Colorado River Recovery Implementation Program is no longer exceptional. In fact, the program has become a paradigm for the administration of large-scale conservation projects such as the Columbia River and San Francisco Bay. Although the concept of multiconstituent participation and cooperation seems ideal, consensus-based management may not be the panacea it is often touted to be (Bernard & Young 1997). We suggest the following recommendations to improve future consensus-based endeavors.

### Link Program Success to Population Growth

The conflict in the Colorado River Basin is representative of the tension between development and conservation throughout the nation. Consensus-based management is one powerful tool for tackling these conflicts by asserting local control while allowing all interests to be heard. Yet the process of consensus, through its reliance on bureaucratic progress, can become more important than the ultimate goals of the original program, epitomizing displacement behavior.

To recover endangered fishes and to improve consensus-based management in general, we recommend a check on the absolute power that consensus appears to wield. If consensus-based management were not a virtually automatic route to reasonable and prudent alternative status, measures of success would rely less on bureaucratic process and more on progress toward species recovery.

One critical component of improved consensus-based management is thus the creation of more sensible indicators for conservation success. Accordingly, actual population growth, rather than bureaucratic accomplishments, should serve as the appropriate gauge. Of course, this recommendation, and the ones that follow, depend on stronger, more centralized USFWS control to ensure that population counts are reliable and that monitoring is consistent.

### Maintain Threat of a Jeopardy Opinion Forbidding Further Development without Population Growth

The Colorado experience demonstrates how consensus-based management can be exploited to circumvent the ESA. By proposing a cooperative agreement supported by diverse local constituent groups and the USFWS, participants reduce the risk of a jeopardy opinion for future proposals in the project area, allowing development despite potentially harmful effects to endangered species. Without a credible jeopardy threat, program participants may substitute procedural goals for population recovery. Thus a region can virtually avoid the requirements of the ESA and regulate its own development.

Because different constituencies each recognize some benefit from cooperation, the program has somehow garnered the support of all participants, sacrificing protections for Colorado River fishes in the process. This recommendation relates to the first by emphasizing the need to create a sense of programmatic accountability to the fishes. Consensus should not immunize projects from a jeopardy opinion. Although delisting should be the ultimate goal of any recovery program, alternative short-term goals should also be created. By maintaining the threat of a jeopardy opinion, notwithstanding consensus, species recovery is more likely to remain a priority. This would prohibit further water development in the face of continued population decline.

The potential threat of statutory sanctions would reduce procedural stonewalling by ensuring that the program is guided by the ESA rather than the interests of a few recalcitrant participants. Retaining the link between the right to develop water and the status of fish populations would not only switch the focus from politics to population recovery, but would also increase individual accountability and encourage ecological rather than procedural progress.

### Mitigate Power Differentials among Stakeholders

The role that recovery program stakeholders play in securing funding aggravates the power disparity between water users and environmentalists. Much of the program's funding is at least indirectly generated by water development and hydropower. Increased federal fund-

ing would lend impartiality to decisions and help equalize participants' voices.

Ideally, the USFWS should contribute the largest portion of the program's funding. This would be consistent with the agency's goals of species recovery. It would be preferable to having the Bureau of Reclamation, an agency primarily interested in water development, finance species recovery. This readjustment, however, would involve shifting Bureau of Reclamation funds to the USFWS, a difficult process. This may be easier than it sounds, however, because both the Bureau of Reclamation and the USFWS are within the Department of Interior. Alternatively, a larger subsection of program participants should raise funds, ensuring broader, more diverse lobbying efforts.

## Conclusion

Given the obvious conflicts between those who want to develop the water and those who want to retain in-stream flows, it would have been surprising if consensus-based management in the Colorado River had been effective at recovering the fishes while developing water use. Although the recovery program has not been an unequivocal success, no program could adequately accommodate the diverse interests at stake in the Colorado River. Gunderson (1999) notes that

Resource managers constantly grapple (explicitly and implicitly) with uncertainty. One approach is to . . . seek spurious certitude, that is, to break the problem or issue into trivial questions spawning answers and policy actions that are unambiguously "correct," but, in the end, are either irrelevant or pathologic. Perhaps the most common solution is to replace the uncertainty of resource issues with the certainty of a process, whether that process is a legal vehicle . . . or a new institution.

We have seen this phenomenon in the Colorado River Basin. Similar complexities arise in any wildlife conservation arena. By establishing a fixed, measurable goal, expressed in terms of the real resource at issue, participants can more readily focus on this common goal. If long-term goals are not achieved, short-term consequences, such as a jeopardy opinion or drastic restrictions on emissions or consumption, should be retained. In a world of limited time and financial resources, we cannot blindly rely on a failing recovery program based on a successful consensus-based bureaucracy.

## Acknowledgments

The authors thank S. Daggett and R. Wiygul of EarthJustice, Colorado, and D. C. Esty of Yale Law School and the Yale School of Forestry and Environmental Studies for their support and encouragement. They further extend their sincere appreciation to the many participants

in the Colorado River Recovery Implementation Program for their candor and insight.

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