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Water Management Options for the Upper San Pedro Basin: Assessing the Social and Institutional Landscape

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ABSTRACT

The San Pedro River flows northward 300 km from its source in northern Mexico into southeastern Arizona. The upper basin, predominantly rural until recently, now is experiencing rapid residential growth. The resulting rise in urban population is raising demand for water from the area's only source: groundwater from the basin. The San Pedro, whose riparian area is nationally protected in the United States, is one of the arid Southwest's last remaining streams to flow virtually year-round. Accordingly, issues surrounding the river's use and protection have drawn considerable attention and controversy. This paper examines water-management options for the basin and emphasizes the groundwater versus surface water nature of the resource and the social and institutional elements of the controversy. ****

INTRODUCTION

The Upper San Pedro River Basin is a narrow watershed stretching northward some 300 km from the river's source in the northern Mexican

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state of Sonora into southeastern Arizona (see figures 1 and 2). The basin, which until recently was almost entirely within a rural setting, is now experiencing urban sprawl in areas surrounding the city of Sierra Vista, Arizona. Because of pressures from urban growth, the river itself, one of the arid Southwest's last remaining streams to flow virtually year-round, has drawn binational attention and generated considerable controversy. The present essay examines water-management options for the basin and emphasizes the groundwater-versus-surface-water nature of the resource and the social and institutional elements of the controversy.

In his paper on the basin, Mexican watershed-management expert Héctor Arias describes the watershed, places it within its geophysical context, and lays out the principal outstanding issues.[1] Foremost among these issues is the threat of diminished surface flows at a time when parts of the U.S. portion of the upper basin have been federally protected to conserve the river's riparian zone (see figure 2).[2] While flows in the river naturally fluctuate with season-to-season and year-to-year climatic variations, the principal concern is human consumption of groundwater—primarily for agricultural, municipal, industrial, and domestic uses,[3] which some research suggests has reduced the water table level and diminished baseflow in the stream.[4] For this reason, any assessment of the basin's ecological status and survivability as a major transcontinental bird-migration corridor needs to consider the impacts of contemporary, binational, and local sociopolitical forces.

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1. *See generally* Héctor Arias, *International Groundwaters: The Upper San Pedro River Basin Case*, 40 NAT. RESOURCES J. (this volume, 2000) [hereinafter *International Groundwaters*]. Dr. Arias was a member of the San Pedro Expert Study Team and is a co-author of the team's 1998 report. Arias' present paper draws on and extends the analysis of the CEC report. *See also* SAN PEDRO EXPERT STUDY TEAM, SUSTAINING AND ENHANCING RIPARIAN MIGRATORY BIRD HABITAT ON THE UPPER SAN PEDRO RIVER (Secretariat of the Comm'n for Envtl. Cooperation ISBN 2-922305-30-9, 1999) [hereinafter RIPARIAN MIGRATORY BIRD HABITAT].

2. *See* Arizona-Idaho Conservation Act of 1988, 16 U.S.C. § 460xx (1994). The San Pedro Riparian National Conservation Area was established in 1988, soon after a land trade between the U.S. Bureau of Land Management and the Tenneco Company in 1986.

3. *See* D.R. POOL & A.L. COES, HYDROGEOLOGIC INVESTIGATIONS OF THE SIERRA VISTA SUBWATERSHED OF THE UPPER SAN PEDRO BASIN, COCHISE COUNTY, SOUTHEAST ARIZONA 15, 23 (U.S. Geological Survey Water-Resources Investigations Report No. 99-4197, 1999). *See also* ARIZONA DEP'T OF WATER RESOURCES, 1 HYDROGRAPHIC SURVEY REPORT FOR THE SAN PEDRO RIVER WATERSHED (Filed with the Court, Nov. 20, 1991) [hereinafter HYDROGRAPHIC SURVEY].

4. *See* LETICIA B. VIONNET & THOMAS MADDOCK III, MODELING OF GROUNDWATER FLOW AND SURFACE/GROUNDWATER INTERACTION FOR THE SAN PEDRO RIVER BASIN, PART 1: MEXICAN BORDER TO FAIRBANKS, ARIZONA 6-2 (Dep't of Hydrology & Water Resources, Univ. of Arizona HWR No. 92-010, 1992).

The crux of the San Pedro's streamflow problem is competition over allocation of water. But unlike most water allocation disputes in the dry regions of the United States, this disagreement is not simply between consumer communities.[5] Instead, this water use conflict illustrates an increasingly common tension: competition between consumptive human uses and conservation of landscape and habitat. In this corner of southeastern Arizona and northeastern Sonora, the issue pits environmentalists, conservationists, recreationists, birders, and others interested in preserving the flow of the San Pedro against not just one or several interest groups, but also against prevailing demographic and economic forces. To further complicate the issue, both the lack of a complete understanding of groundwater-surface water connection, especially on the Mexican side of the basin, and the lack of legal recognition of water allocation rights and of groundwater and surface water interactions in Arizona also pose serious constraints.[6] In a region where perennial streams have virtually vanished, the fate of one of the last exemplars has exposed clashing values, heated passions, and polarized citizens.

COMMISSION FOR ENVIRONMENTAL COOPERATION STUDY

The issues raised in the Arias paper can be viewed in the aftermath of an interesting and controversial exercise in the basin. In late 1996 the Tucson, Arizona-based Southwest Center for Biological Diversity,[7] an environmental organization whose métier is suing U.S. federal agencies for failing to enforce national environmental laws, filed a petition with the Commission for Environmental Cooperation (CEC).[8] The petition alleged

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5. For example, sheep ranchers versus cattle ranchers, developers versus agriculturists, manufacturing plants versus urban residents, or one irrigation district versus a neighboring one.

6. *See generally* HYDROGRAPHIC SURVEY REPORT, *supra* note 3; RIPARIAN MIGRATORY BIRD HABITAT, *supra* note 1. *See also* R.J. Glennon & T. Maddock, *In Search of Subflow: Arizona's Futile Effort to Separate Groundwater from Surface Water*, 36 ARIZ. L. REV. 567, 567 (1994).

7. In mid-1999 this organization changed its name to the Center for Biological Diversity.

8. *See* Commission for Environmental Cooperation, *Registry of Submissions on Enforcement Matters*, (visited Feb. 12, 1999) <http://www.cec.org/templates/registryview.cfm?&varlan=English&submissionID=8&format=1>. Submission pursuant to Article 14 of the North American Agreement on Environmental Cooperation (CEC) by Earthlaw on behalf of the Southwest Center for Biological Diversity and Dr. Robin Silver, an official of the Center, November 16, 1996. The CEC is a trinational (United States, Mexico, and Canada) institution established in 1993 by an environmental side agreement to the North American Free Trade Agreement (NAFTA).

FIGURE 1

Colorado River Watershed and San Pedro Basin

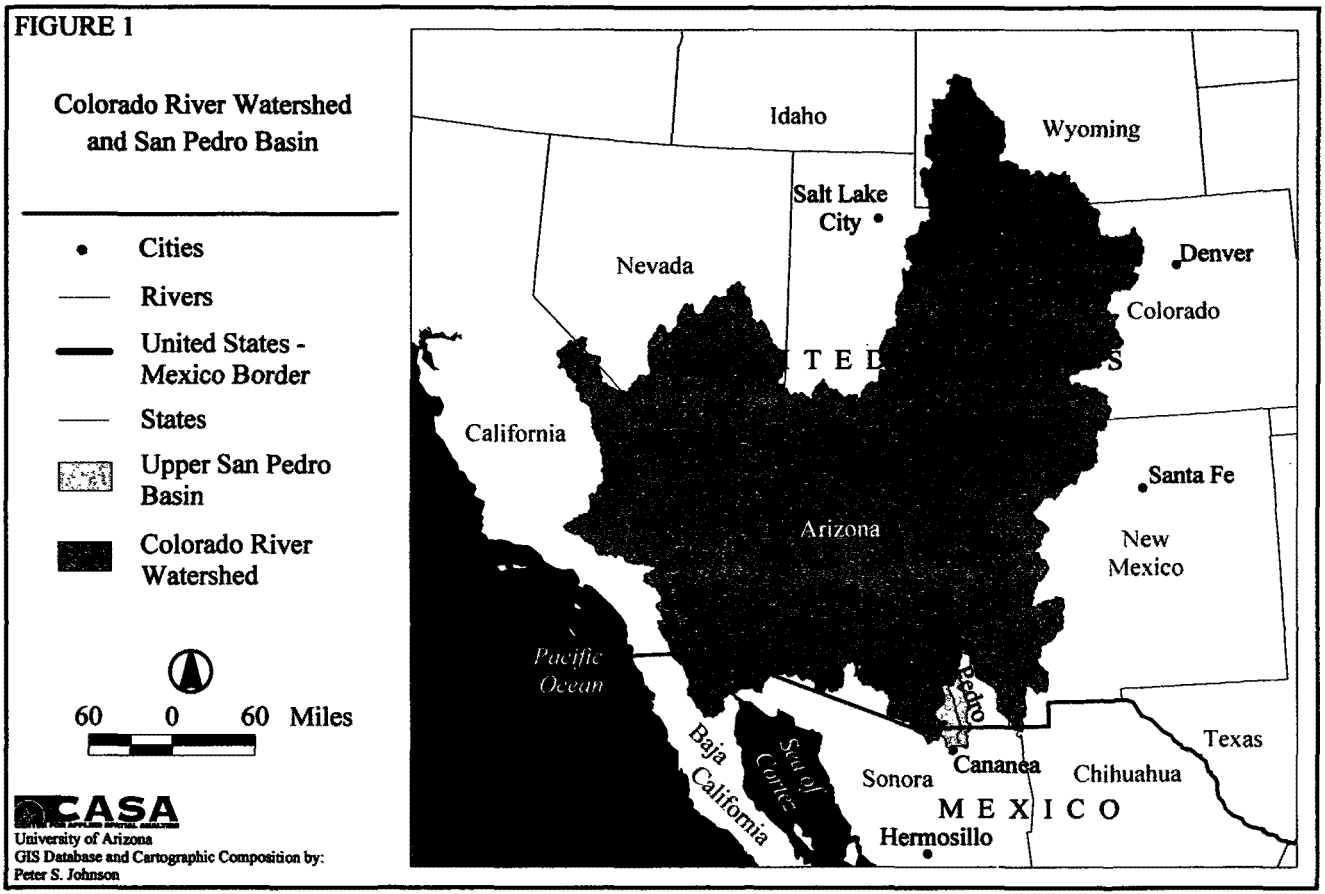
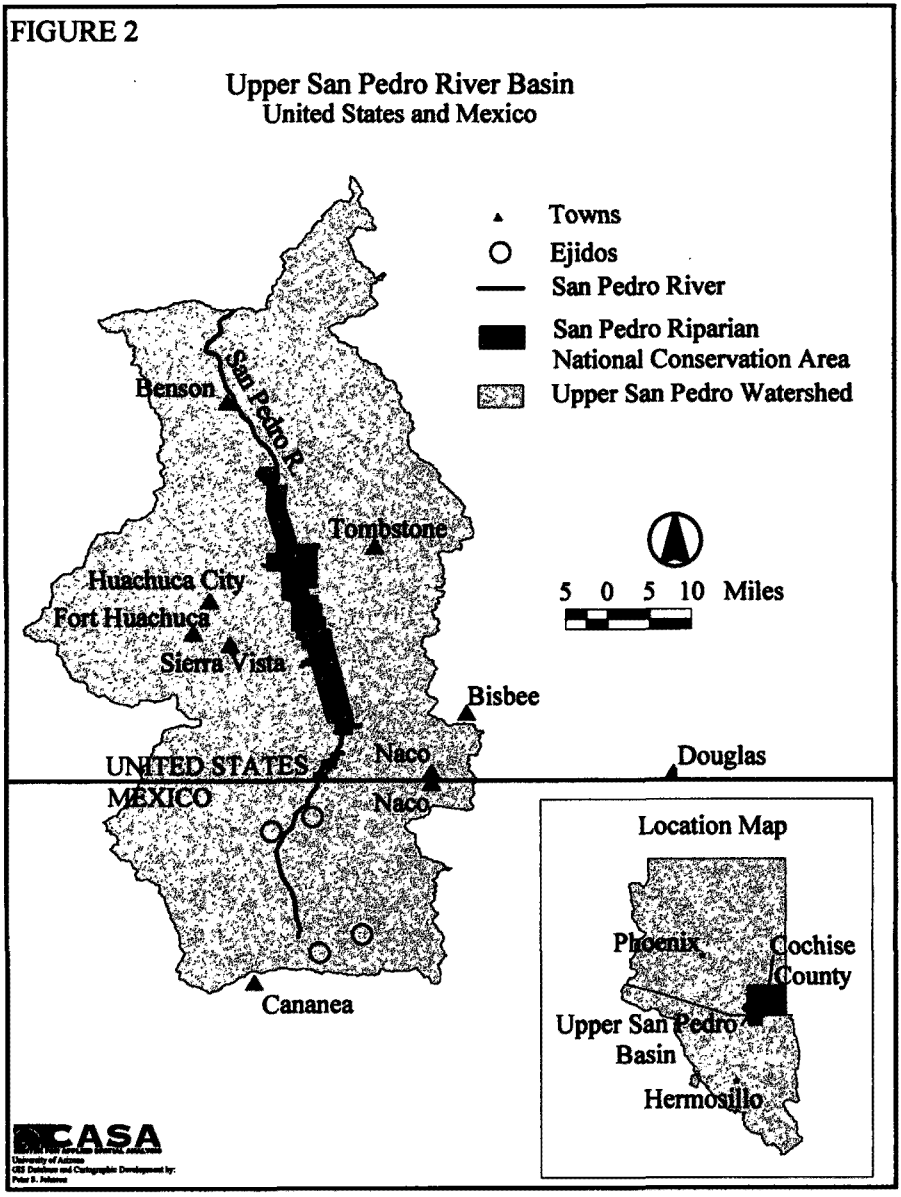


FIGURE 2


Upper San Pedro River Basin
United States and Mexico
Towns
Ejidos
San Pedro River
San Pedro Riparian National Conservation Area
Upper San Pedro Watershed
5 0 5 10 Miles
Benson
San Pedro R.
Tombstone
Huachuca City
Fort Huachuca
Sierra Vista
Bisbee
Douglas
UNITED STATES
MEXICO
Naco
Naco
Cananea
Location Map
Phoenix
Cochise County
Upper San Pedro Basin
Hermosillo
CASA
University of Arizona
GIS Database and Cartographic Development by:
Peter F. Johnson

that the U.S. Environmental Protection Agency (EPA) was failing to enforce the National Environmental Policy Act (NEPA)[9] by not requiring the Fort Huachuca military facility, a U.S. Army base in the San Pedro River Basin, to file an environmental impact statement related to proposed and ongoing fort operations (see figure 2). The Southwest Center claimed in its petition that the fort was harming the river and the adjacent national riparian conservation area by causing growth in civilian communities within the basin and increasing groundwater extraction that would further diminish flow in the stream. The CEC certified the petition, and requested and received a response, in accordance with the Article 14 procedure, from the EPA. Instead of proceeding with a CEC fact-finding committee, in May 1997 the CEC Secretariat announced it would study water problems in the San Pedro Riparian Conservation Area under its Article 13 authority.[10] Although the CEC denied that the impetus for the study was the Southwest Center for Biological Diversity's petition, by coincidence the Southwest Center withdrew its petition at that time. Moreover, the CEC said the study would not focus on Fort Huachuca or investigate whether any U.S. laws had been broken.[11] Rather, the CEC study would look at the vitality of the river and its associated riparian habitat as an important corridor for millions of migratory songbirds that winter in Mexico and breed during the summer months in the United States and Canada. The Secretariat further stated that it intended the study to serve as an example of how to protect a transboundary watershed, a physically and biologically distinctive basin divided by an international boundary.

Local elected officials and the governor of Arizona wasted no time objecting to the CEC's intervention and decrying the purpose of the study. In quick succession, (1) the Cochise County Board of Supervisors adopted a resolution calling on the governor and Arizona's congressional delegation to fight the CEC study,[12] (2) then-Governor Fife J. Symington III

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9. *See* National Environmental Policy Act of 1969, 42 U.S.C. §§ 4321-70 (1994).

10. Article 13 allows CEC to prepare reports related to its programs, in this case the ongoing "Conservation of North American Birds" program.

11. *See* Commission for Environmental Cooperation, Press Release, *North American Environment Commission Responds to Public Concerns over Water Problems along Arizona-Mexico Border* (May 27, 1997) *available at* <http://www.cca.cec.org/new.Data.cfm?&varlan=English&vardate=9999&unique=62&format=2>.

12. *See* Bill Hess, *Nazism, Communism, Now Environmentalism*, SIERRA VISTA HERALD/BISBEE DAILY REVIEW, June 24, 1997, at 1A. In a written statement, U.S. Rep. Jim Kolbe, R-AZ, said, "The decision by the Commission for Environmental Cooperation to conduct a study of water-related issues along the San Pedro River corridor has generated considerable controversy and apprehension among area residents. Part of the blame lies with the CEC, which announced its intention to conduct this study without prior consultation with local and county officials." Bill Hess, *EPA to Visit; Study Stirs up Emotions*, SIERRA VISTA HERALD/BISBEE DAILY REVIEW, July 13, 1997, at 1A, 6A.

called the proposed study an "environmental drive-by shooting" and sent a letter to the CEC asking its members to withdraw the study,[13] and (3) a Sierra Vista city councilman called the CEC "an arrogant group of internationalists coming here telling us what to do."[14] Many locals also objected to the study's focus on the National Riparian Conservation Area, saying that any investigation of the San Pedro River should include an assessment of water use on the Mexican side of the basin. In response to the local outcry, the CEC promised to allow formal public input to the study.

The CEC initiative involved three phases. First, a binational team of six technical experts was charged with conducting a study and preparing a report characterizing the physical and biological conditions required to sustain and enhance the riparian migratory bird habitat on the Upper San Pedro River.[15] Second, in response to local demands, the CEC added a 60-day public-input period, during which interested parties could submit comments on the expert study.[16] The third phase of the study was an advisory panel review of the expert report and public comment. The advisory panel was charged with developing policy recommendations for the CEC.[17] The final report was prepared by the CEC Secretariat for

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13. Bill Hess, *'Environmental Drive-by' Study*, SIERRA VISTA HERALD/BISBEE DAILY REVIEW, June 15, 1997, at 1A.

14. Bill Hess, *Trade Issues or No, NAFTA Panel Can Study River, Official Says*, SIERRA VISTA HERALD/BISBEE DAILY REVIEW, July 2, 1997, at 1A.

15. In June 1997 the CEC appointed the Upper San Pedro Expert Team; Gregory Thomas a lawyer; Jeff Price, an ornithologist; Héctor Arias Rojo, a watershed-management expert; Julie Stromberg, a botanist; John Bredehoeft, a hydrologist; and Ronald Lacewell an agricultural economist; to review studies of the San Pedro River Basin and prepare an assessment of water issues affecting the river and its associated riparian habitat. *See* Commission for Environmental Cooperation, Press Release, *Riparian Migratory Bird Habitat on the Upper San Pedro River* (Aug. 1, 1997) *available at* <http://www.cec.org/new/ Data.cfm?&varlan=English&vardate=9999&unique =94&format=2>.

16. *See* UDALL CENTER FOR STUDIES IN PUBLIC POLICY, PUBLIC INPUT DIGEST FOR THE UPPER SAN PEDRO RIVER INITIATIVE 2 (prepared for the Comm'n for Envtl. Cooperation, 1998). As part of the second step of the initiative, the CEC sought the services of The University of Arizona's Udall Center for Studies in Public Policy to design and implement the public input process. Public input was solicited through advertisements, a newspaper insert with mail-in public comment form, voice mail, focus-group meetings, an open house, and public workshops. The focus-group meetings and public workshops drew close to 600 people. In addition, approximately 300 input forms, letters, and other written comments were submitted.

17. *See generally* SAN PEDRO ADVISORY PANEL, ADVISORY PANEL REPORT ON THE UPPER SAN PEDRO RIVER INITIATIVE: RECOMMENDATIONS AND FINDINGS PRESENTED TO THE COMMISSION FOR ENVIRONMENTAL COOPERATION (prepared for the Secretariat of the Commission for Environmental Cooperation, 1998).

presentation to the CEC Council, the commission's governing body.[18]

Arias, a member of the CEC's expert team, characterizes the water management or water allocation solution sets outlined by the expert team as allocation alternatives that have been identified, vetted, and put forward by the expert team and, in many cases, endorsed by the advisory panel.[19] While the expert report authors attempted to anchor their observations to technical realities and constraints, the critical political and social feasibility of various options requires further scrutiny.

SOCIAL AND POLITICAL COMPLEXITY OF THE SAN PEDRO RIVER BASIN

On the U.S. side of the San Pedro River Basin, the cast of characters is dominated by the 120-year presence of a metaphorical one-ton gorilla, Fort Huachuca.[20] The fort's water rights are predated only by those of local Indian tribes, and the fort is the economic engine of Cochise County, providing more than 40 percent of the jobs in the county. Rapid growth of the city of Sierra Vista, which abuts the fort, and increasing development in unincorporated areas near the river have become a cause célèbre for regional environmental voices, who recognize that overdraft of the regional aquifer directly threatens the river and riparian areas. Antigrowth interests both within and outside of the basin have frequently attacked Fort Huachuca, Sierra Vista, and Cochise County for encouraging development.

In turn, antigrowth campaigns have raised the ire of many local citizens, particularly long-time rural landowners and developers who see their water and development rights menaced by proposed zoning restrictions. On the U.S. side of the border, the Wise Use Movement and property-rights advocates are strong in Cochise County, and the Sierra Vista area supports an active local chapter of People for the U.S.A.!,[21] which

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18. *See generally* SAN PEDRO ADVISORY PANEL, RIBBON OF LIFE: AN AGENDA FOR PRESERVING TRANSBOUNDARY MIGRATORY BIRD HABITAT ON THE UPPER SAN PEDRO (prepared for the Secretariat of the Commission for Environmental Cooperation ISBN 2-922305036-8, 1999). The CEC Council comprises the Canadian Environment Minister, the U.S. Secretary of the Environmental Protection Agency, and the Mexican Environmental Secretary.

19. *See International Groundwaters, supra* note 1.

20. Just 30 km north of the Mexican border, the fort was established as an outpost during the Indian Wars of the 1870s and 1880s. *See Ft. Huachuca Home Page* (last modified Jan. 13, 1999) <http://huachuca-www.army.mil/index.htm/>.

21. People for the U.S.A.!, formerly People for the West!, is a nonprofit interest group "organized to create a permanent coalition among interested individuals and groups in the United States to protect multiple use on public lands, individual property rights, and resource production." *People for the U.S.A.!*, (last modified Feb. 5, 2000) ‹http://www.pfw.org/whowhat.html›. *See* JACQUELINE VAUGHN SWITZER, GREEN

argues vehemently that outside (national or international) public-sector involvement in local land and water use issues is "un-American" interference in local matters. Ranchers and farmers who have seen their lifestyles eroded by economic pressures, increasing development, and environmental regulation are particularly hostile toward federal and some state agencies. Many have not forgotten nor forgiven the creation of the San Pedro National Riparian Conservation Area and the Bureau of Land Management's decision to retire irrigation and grazing on what had historically been agricultural land.[22]

In recent years, The Nature Conservancy, American Rivers, and other national and international environmental groups have listed the San Pedro River on their "top ten" lists of critical environmental conservation sites.[23] Among certain segments of the population, these and related actions have fueled fears of national and international intervention to protect the river's biodiversity and habitat at the expense of existing human occupation and uses.

On the Mexican side of the basin, the issue of restoring flow is similarly complicated, but forces at play are very different. First, there are no analogues to the U.S. private property rights movement; virtually no organized, militant, anti-government views; and few, if any, strong, mobilized ecological protection efforts. There exist, however, large industrial interests, farming and ranching communities or organizations, *ejidos*,[24] municipalities, federal authorities, and state agencies that have a stake in river management.

The Mexican analogue of the Ft. Huachuca military base, the area's primary economic force, is the Cananea copper-mining operation.[25] This

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BACKLASH: THE HISTORY AND POLITICS OF ENVIRONMENTAL OPPOSITION IN THE U.S. 201, 202 (1997); MARGARET KRITZ, *Land Mine, in* LET THE PEOPLE JUDGE: WISE USE AND THE PROPERTY RIGHTS MOVEMENT 29 (John D. Echeverria & Raymond Booth Eby eds., 1995); JIM BACA, *Challenges and Opportunities, in* LET THE PEOPLE JUDGE: WISE USE AND THE PROPERTY RIGHTS MOVEMENT 53 (John D. Echeverria & Raymond Booth Eby eds., 1995).

22. The Bureau of Land Management withdrew all land within the National Riparian Conservation Area (NRCA) from mining leases and applied a 15-year moratorium on grazing within the boundaries of the NRCA. *See* H.R. Rep. No. 99-41, at 2 (1986).

23. The Nature Conservancy named the San Pedro River one of its twelve "last great places" in 1991. *See The Nature Conservancy's Protection Initiative for the 1990s*, 41 NATURE CONSERVANCY 28, 28-29 (1991). In April 1999, American Rivers named the San Pedro one of America's "ten most endangered rivers of 1999." *See* American Rivers, Press Release, *San Pedro Named One of Nation's Most Endangered Rivers* (Apr. 12, 1999) *available at* <http://www.amrivers.org/99sanpedrorel.html>.

24. Land owned by the Mexican government to which communities have usufruct rights.

25. The mining operation is owned by Mexico's largest copper company, Grupo México.

enormous mining and smelting facility supports approximately 70 percent of the population of Cananea, the largest city on the Mexican side of the basin. Significantly, the mining enterprise controls water use at the headwaters of the San Pedro River.[26]

The water issues that concern Mexicans differ considerably from those that attract attention north of the border. In Mexico, the major concerns are water quality and delivery of water for municipal and industrial uses. There, where per-capita GDP is less than a third of what it is in the United States, protection of a migratory bird corridor and other rare habitat is not nearly as important or contentious. However, some of the CEC's proposed conservation alternatives have stirred concern and resentment insofar as they may infringe on sovereignty. *Ejiditarios* and other farmers and ranchers, for example, have expressed alarm at calls for drastically reducing or eliminating irrigated agriculture in the basin, asking how they will make a living if forced out of agriculture.

A BINATIONAL, BASINWIDE STRATEGY?

Arias concludes by recommending not a treaty but a binational, basin-wide strategic plan and a coordinated resource-management program blessed by the U.S. and Mexican governments.[27] Such a program would be initiated, as University of Texas professor David Eaton has said,[28] by joint proclamation of two national leaders.[29] But even a well-intentioned resource-management program would not readily be accepted by local basin residents, who remain leery of top-down directives. In the United States there has been a long history of resistance to "interference" by federal, even state and county, let alone international agencies in local land

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26. Although there are no exact figures on the amount of water consumed by the mine, water experts agree it is the largest water user in the basin. Sixty-two of the largest wells in the watershed belong to the mining company. *See* RIPARIAN MIGRATORY BIRD HABITAT, *supra* note 1, at 46-48. Until February 1999, when it turned over responsibility for municipal water supply to the city of Cananea, the mining company supplied water to the city as well as its mining operations. *See* Virginia de Viana, *Empeora desabasto de agua*, EL IMPARCIAL (México), Mar. 5, 1999, at 1E.

27. *See International Groundwaters*, *supra* note 1.

28. *See* David Eaton, Conference Comments at the Ciudad Juárez–El Paso Case Study Session of the Binational Conference on Groundwater Management, La Paz, Baja California Sur, Mexico (Feb. 8, 1998).

29. In July 1999, Bruce Babbitt, U.S. Secretary of the Interior, and Mexican SEMARNAP secretary, Julia Carabias Lillo, signed a letter of intent to create a conservation area on the Mexican side of the basin and increase cooperation between the United States and Mexico on San Pedro River Basin water issues. *See United States, Mexico Seek to Protect River*, SIERRA VISTA HERALD/BISBEE DAILY REVIEW, June 23, 1999, at 1.

and water management.[30] In the instance at hand, in spite of the many precautions of the CEC expert team, many of the "solution opportunities" appear to have real costs for locals. The first solution identified by the expert team, for instance, is to "eliminate extractions for irrigated agriculture from the aquifer on the U.S. side of the border," and the second is to "reduce irrigated agriculture on the Mexican side of the border."[31] Other suggested options include initiatives to conserve water, recycle, and limit access to the aquifer for domestic wells.[32] Under any conservation plan, residents will lose some of the land and water rights they now hold.

In view of the extent and seriousness of existing social and political constraints, it is questionable whether any proposals for binational, basin-wide processes can be made acceptable to residents and governments within the basin. Certainly, given the saliency of local interests, a binational, basin-wide process should be designed to address the most compelling concerns by giving local residents a significant role—even in a cooperative effort initiated at the federal level that includes national and state-level entities. The largest water users in the basin also are the economic engines of the region—the Cananea mine and Fort Huachuca (see figure 2). They, too, will necessarily play an important role in any basin-wide planning process.

A basin-wide strategic planning and management process would be expensive. Although dozens of entities engage in research or management in the basin, their efforts are not well coordinated.[33] As Arias notes, in addition to the cost of coordinating management and planning across multiple municipal, county, state, and federal jurisdictions—in two languages—there is also a paucity of data, especially in Mexico. [34] It is likely that costly geophysical and hydrologic studies would be required before effective planning could take place. It is unclear what long-term

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30. *Cf.* Gary LaMonica, *Feds Sneak into Arizona*, ARIZ. WILDLIFE NEWS, Feb. 1978, at 1, which describes an effort by the U.S. Fish and Wildlife Service to purchase riparian areas along the San Pedro River for preservation purposes.

31. RIPARIAN MIGRATORY BIRD HABITAT, *supra* note 1, at 55-63.

32. *See* RIPARIAN MIGRATORY BIRD HABITAT, *supra* note 1, at 65, 68.

33. On the U.S. side alone, the Upper San Pedro Partnership, San Pedro Joint Task Force, Bureau of Land Management, U.S. Forest Service, U.S. Fish and Wildlife Service, Environmental Protection Agency, Arizona Game & Fish Department, Arizona Department of Environmental Quality, Arizona Department of Water Resources, Arizona State Lands Department, Cochise County Planning & Zoning, Fort Huachuca, U.S. Geological Survey, U.S. Agricultural Research Service, Natural Resources Conservation Service, two natural resource conservation districts, at least three universities, and local environmental organizations all collect information and conduct water and resource management studies in the San Pedro basin.

34. *See International Groundwaters*, *supra* note 1.

resources are available for data collection, analysis and dissemination, or for coordination of research and resource management.

All existing demographic projections indicate continued growth. The CEC study concluded that the only way to provide for both population increase and riparian habitat is to import water from another basin. But such transfers are probably the most unpopular and perhaps the most costly of all solution sets. Inter-basin transfers would require tens of millions of dollars—and the municipalities and other population centers in the Douglas sub-basin, the basin most frequently looked to as a water source, appear unequivocally opposed to even considering such transfers.[35] An ironic twist here is that in 1999 at least one environmental organization advocated a transfer from the Douglas sub-basin. Historically, environmentalists have opposed water basin transfers in principle because they cause drastic environmental changes. In this case, however, some environmentalists believe the importance of preserving riparian habitat along the San Pedro River outweighs the costs to the source basin.[36]

SUMMARY AND PROSPECTS

To conclude, the CEC's San Pedro review effort has confronted the basin's water-availability issue and elevated it to a level of binational, and even trinational, concern. But in the process it has stirred controversy and revealed the importance of accounting for the region's social and political forces. The public debates over water allocation in the San Pedro Basin have exposed some of the most deeply held fantasies and fears of both proponents and opponents of increased protection for the San Pedro River. On one side, protagonists say opponents care more about flows and species than about humans. On the other, some see ranchers and farmers as anachronistic and doomed, and developers as devils.

It is clear that the process set off by the CEC is really just an early step in a long, tedious, and fragile chain of events, with no solution sets acceptable to all and none capable of solving all the problems. Nonetheless, the CEC study and other national policy pronouncements have drawn increased attention to water issues in the San Pedro Basin.

On the U.S. side of the border, the interest stimulated by these developments has spurred the emergence of several interorganizational

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35. *See* City of Douglas, Res. No. 98-161, A Resolution of the Mayor and Council of the City of Douglas, Cochise County Arizona Opposing the Export of Water from the Douglas Basin to Recharge the San Pedro Basin (Aug. 12, 1998).

36. *See* Robert G. Varady et al., Interbasin Water Transfers in the Southwestern United States: The Case of the San Pedro River, paper presented at the International Workshop On Interbasin Transfer: Looking for Solutions for the Future (Paris, International Hydrological Programme of UNESCO, Apr. 26-27, 1999).

groups that are beginning to address water allocation issues.[37] In Mexico, no such association yet exists, but several key local elected and appointed officials, interest-group representatives, and unaffiliated residents of the basin are seeking a voice in national and transnational decision making relating to the river.[38] The rise and vigor of these dialogues offers some room for optimism that a binational yet local, basin-wide strategy could emerge to help overcome the present deadlock.

37. One, the "Upper San Pedro Partnership," consists of 12 federal, state, and local agencies that collectively work to identify, prioritize, and implement water-management policies and projects in the Sierra Vista subwatershed of the San Pedro River Basin. Another, the "San Pedro Joint Task Force," is an advisory committee, made up of planning and zoning commissioners from the city of Sierra Vista and Cochise County, that advises the city council and county board of supervisors on proposed watershed-management options for the Sierra Vista subwatershed. A third, "Dialogue San Pedro," a diverse group of officials, academics, environmentalists, property-rights advocates, and other concerned citizens, has been meeting to discuss options for improving education, information-exchange, and coordinated water management in the basin; since its inception, the dialogue has been convened by The University of Arizona's Udall Center for Studies in Public Policy.

38. The mayor of Naco, Sonora, the heads of at least three *ejidos* in the basin, and environmentalists from Cananea, Sonora, have participated in preliminary discussions aimed at influencing Mexican and U.S. government water-management policies.