



The grassroots campaign to establish an International Sonoran Desert Biosphere Reserve

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Abstract

Conservationists have called the western Sonoran Desert the “largest intact arid ecosystem in the world.” Yet across the US/Mexico border and within each country, the region suffers from both ecological and administrative fragmentation. In the early 1990s, a group of grassroots conservationists, Native Americans, and government personnel established the International Sonoran Desert Alliance (ISDA), a tricultural/trinational network whose stated mission was to “promote environmentally sustainable and culturally sound economic development while protecting the natural and cultural heritage of the western Sonoran Desert US-Mexico border region.” ISDA’s principal focus was to establish “biosphere reserve” planning and management in the region. Although an International Sonoran Desert Biosphere Reserve has yet to be established (and does not appear at all likely to be established in the foreseeable future), ISDA had a significant effect both in increasing local participation in land management issues and in directing land management towards conservation purposes.

1. Introduction: The western Sonoran Desert

Of the four major deserts of North America, the Sonoran Desert contains the highest species diversity and is considered by some to be the “largest intact arid ecosystem in the world” [1,2,3]. Loosely defined as the land surrounding the Gulf of California, the Sonoran Desert covers most of the Mexican states of Sonora, Baja California Norte and Sur, and most of southwestern Arizona (with extensions into southeastern Arizona and southeastern California). It is the classic



American desert—the only one with the desert icon of the giant arm-waving saguaro cactus.

Conservationists have generally identified the “western” Sonoran Desert as the area of large blocks of land units to the south and west of the major population centers of Phoenix and Tucson, Arizona. On the Mexican side of the border lie the Pinacate and Gran Desierto Biosphere Reserve and the Upper Gulf and Colorado River Delta Biosphere Reserve. On the US side, major land units include Organ Pipe Cactus National Monument (ORPI), Cabeza Prieta National Wildlife Refuge (CPNWR), the Barry M. Goldwater Range (US military), and the Tohono O’odham Nation reservation (the second largest Native American reservation in the US, approximately the size of the state of Connecticut).

Some of the most serious conservation threats in the Sonoran Desert are invasive species, unmanaged grazing, mining, fragmentation of habitat and wildlife corridors, growth in recreational use of off-road vehicles, the illegal collection of endangered plants, population growth and in-migration, groundwater overdraft, surface water diversion and impoundment, urbanization and uncontrolled growth, and uneven enforcement of environmental and conservation laws [4].

More generally, conservationists point out that while intact as an ecosystem, the Sonoran Desert is subject to the “fragmented management” [4] of a highly disjointed mix of multiple public and private land owners, including the “real, hard, and physical fence” of the international border [5]. The western Sonoran Desert is also affected by many of the difficult societal problems prevalent throughout the US/Mexico border region, including poverty, illegal immigration, and drug smuggling. Overall, as one conservationist has noted, these problems result from a complex mix of “language barriers, sovereignty issues, an international border, notable economic disparity, differences in international law, and diverse cultural perspectives” [6].

US efforts to unify management of large portions of the Sonoran Desert date at least to the early 1960s [7]. The effort became pointedly binational in the early 1980s with various scientists and government officials on both sides of the border considering the designation of large portions of the region as a “biosphere reserve” (BR). The following short history of the international origins of the BR concept, as well as its separate development paths in both the US and Mexico, lay the historical foundations of how the International Sonoran Desert Alliance (ISDA) arose out of the border culture of the Sonoran Desert.

2. A short history of MAB and biosphere reserves

The origins of the Man and the Biosphere (MAB) program are generally traced to a 1968 conference on “the rational use and conservation of the resources of the biosphere” sponsored by the United Nations Educational, Scientific and Cultural Organization (UNESCO) [8]. Officially established in 1971, the mission of the MAB Program is “to help provide the knowledge, skills, and attitudes needed for harmonious relationships between man and nature, and, more specifically, for



addressing interrelated environmental, land use, and socioeconomic problems.” The MAB Program formulated three fundamental goals: (1) to promote *conservation* of ecosystems and genetic diversity, (2) to establish an international *research network* for information sharing on interdisciplinary research, and (3) to link conservation to *development* activities [9]. A country’s participation in the MAB Program is entirely voluntary, and the program is not based on a treaty or any legally binding obligations [10].

Under the first goal of conservation, the MAB International Coordinating Council introduced the concept of an international network of BRs in 1971 [11]. A “unifying concept” of the BR network was to ensure representation of the world’s major biomes, an objective that ran counter to the traditional purposes of protected areas—mostly national parks—in “showcasing” and preserving rare biological and geological phenomena [11-13]. By 1975 a global biogeographical classification system had been established [14], and voluntary country nominations resulted in the designation of the first 57 biosphere reserves in 1976. In these early years, most of these BRs were already protected as national parks or under other protected area status, reflecting a disproportionate focus on MAB’s conservation mission to the expense of development, research, and networking activities [8,9].

While the BR network initially focused on conservation, implementation of the concept did eventually revolve back to emphasizing the relationship between humans and their environment [12]. The focus on the multiple functions of BRs led to the “natural result” of a conceptual framework in which land was classified into a generalized pattern of concentric circles, with core protected areas at the center, surrounding buffer zones, and a transition/cooperation zone [12]. While most descriptions of BRs show this basic schematic outline, it was recognized that geographic conditions and local constraints would alter the idealized system of concentric rings through the strategy of “cluster reserves” or “multiple reserves” that apportion the zones in discreet areas [8,13,15].

In 1983, the First International Biosphere Reserve Congress in Minsk, Belarus approved the *Action Plan for Biosphere Reserves*, which outlined general objectives and specifications for an International Network of Biosphere Reserves [8,9,11]. The Action Plan called for administrators of a proposed biosphere reserve to commit to pursue these objectives, one of which was to obtain consent and active support from all stakeholders in a region in the process of BR planning and management [8,9,11]. The ideal was to have BRs serve as a “pillar upon which to build broad, regional-land-management plans” [11]. Unfortunately, it was an ideal that remained far from fruition as the system expanded through the 1980s. One IUCN study, for example, found that 84% of existing BRs overlaid preexisting protected areas [11]. Consequently, the implementation of zoning in biosphere reserves was criticized as a “myth” with “little difference between the management of biosphere reserves and the underlying protected areas” [12].

A second world conference on BRs in Seville, Spain in 1995 addressed this criticism. There, delegates set out a “vision” in which “rather than forming islands in a world increasingly affected by severe human impacts, biosphere



reserves can become theaters for reconciling people and nature” [8]. The conference also resulted in the *Seville Strategy for Biosphere Reserves*, which reaffirmed the three original fundamental goals of the system (conservation, research networking, and sustainable development) and called for all BRs to clarify or establish the three primary BR land management components (core areas, buffer zones, and transition areas). The same year, UNESCO adopted a *Statutory Framework for the World Network of Biosphere Reserves*, which codified the Seville Strategy’s definition of a BR, formalized the BR designation process, and required each BR to undergo a status review ten years after being designated [8].

While critics have pointed to many problems in both the BR concept and its implementation, many consider the BR concept as a “major achievement” in the environmental movement and at least some observers are optimistic about the role of BRs in sustainable development [16]. De Klemm, for example, refers to BRs as “the best suited instrument” for conservation [10]. Batisse [8] argues that the BR concept has “demonstrated its value on the ground,” that it is “progressively finding its place in the larger framework of bioregional ecosystem management and land-use planning,” and that the BR concept could be an “outstanding tool” under the 1992 Convention on Biological Diversity (which, although not referring specifically to biosphere reserves, does reflect many of the concerns raised 20 years earlier in the formation of MAB [17]). Furthermore, the BR zoning concept has long expanded beyond the MAB community to widespread recognition within the general practice of conservation biology [18-21]. As of November 2000, the BR network included 391 sites in 94 countries [22].

3. MAB in Mexico

Mexico was one of the first countries to initiate a BR program [9]. In the early 1970s, many Mexican conservationists saw BRs as offering “a preferable alternative” to the country’s traditional system of national parks. One of these, entomologist Gonzalo Halffter, was critical of how the model of US national parks had been directly copied in Mexico. National parks could only work in countries that faced few demographic pressures, could afford taking areas out of production, and had both the administrative capacity and tradition of conservation to protect the land—none of which applied to Mexico. In addition, Halffter “rued” the fact that Mexico’s national parks had neither protected a representative suite of ecosystems nor led to the advancement of ecological knowledge, and furthermore had “failed to address the social needs of the local population” [23].

In 1974, Halffter established the research-based Instituto de Ecología [17]. That same year in Mexico City, international conservationists introduced the BR concept to biologists and conservationists at a concurrent meeting between the MAB Program and the Latin American Zoological Conference [23]. Halffter and the Instituto de Ecología quickly adopted the “radically new” BR concept [17], taking the lead role in designating the Mapimí and Michilía BRs in the state of



Durango [23,24]. Both of these BRs were recognized by the MAB Program in 1977 and by the Mexican government in 1979 [24].

The Durango government's political support and Halfiter's organizational skills made for an "auspicious beginning" for Mexico's biosphere reserve program [23]. The growing recognition of BRs in Mexico also resulted from their apparent success, particularly the Mapimí BR which reportedly drew in local people through the BR's range improvement and alternative development projects [9]. Subsequently, other BRs were recognized by both the national government and the MAB Program. Under the 1988 Ecological Balance and Environmental Protection Act, Mexico legally designated biosphere reserves as a specific type of land management unit, one of the few countries to have such a designation (others include China and India) [8,10]. According to Gregg [9], the BR approach works in Mexico partly due to the "relative weakness of national park and other protected area systems, and the need to build centers to demonstrate ways to integrate conservation and development."

Today there are at least 25 nationally designated biosphere reserves in Mexico, eleven of which are recognized by the international MAB Program [25,26]. While Mexico's implementation of the BR concept has been described as "exceptional" [9], Simonian notes that the "program as a whole can be deemed neither a success nor a failure since each reserve has produced different results" [23].

4. MAB in the United States

Establishment of the US National Committee for the MAB Program dates to 1974 under the auspices of the US Department of State. The National Committee includes representatives from twelve federal agencies, ranging from the National Park Service (NPS) to the National Aeronautics and Space Administration [27]. At its conception, the National Committee focused principally on conservation and research, with education as a third goal; the international MAB Program's focus on development-environment dynamics was not emphasized [13]. In 1974, after a MAB conference in the US (along with a US-USSR agreement on joint BR designation), 19 BRs were selected with nine additional sites following the next year [13].

The US MAB Program has faced two major challenges. The first has been bureaucratic and public nonrecognition of the program. While the NPS has used the BR concept as a "guidepost" to regional planning, critics have noted that Congress has not provided funding, neighboring national forests have not participated, and the public is "hardly even aware that biosphere reserves exist" [28]. According to a former MAB coordinator for the NPS, "park managers have tended to see the designation as a gratuitous honor, rather than an opportunity to [solve] management problems or strengthen bioregional cooperation" [11]. "Overall," wrote one observer, "biosphere reserves may yet have a future, but they are not the panacea that some wish them to be" [28].



The second challenge has resulted from a widespread belief that the MAB Program could lead to loss of US sovereignty over private and public lands—a belief that convinced some of impending UN plans to “enter a country for the purpose of controlling biosphere reserves” [29,30]. The extent of and ultimate outcome of these beliefs is discussed below in the context of the proposed International Sonoran Desert BR.

There are currently 47 BRs in the US recognized by the MAB Program [25].

5. MAB in the desert: The formation of the International Sonoran Desert Alliance (ISDA)

As described above, the international MAB Program has emphasized the importance of local participation in biosphere reserve planning and management. But because such activities must always be highly tailored to each specific BR, MAB standards for local participation are understandably ambiguous. In practice, the two simple words “local participation” disguise highly complex social dynamics over broad temporal and spatial time scales. The formation and history of the International Sonoran Desert Alliance (ISDA), which took on the task of eliciting broad-based involvement in biosphere planning, provides insight into just how complex “local participation” can be.

In 1976, Organ Pipe Cactus National Monument (ORPI) was among the first designated BRs in the US. As Nabhan and others have noted, however, the BR designation was pasted on top of ORPI, and it has “never been able to fully function as a UNESCO-style biosphere reserve with designated protected (core) areas, managed use (buffer) areas and surrounding zones of cooperation” [31]. Further efforts to designate a biosphere reserve in the Sonoran Desert began in the early 1980s when at the behest of the Sonoran state government, the Instituto de Ecología began scientific investigations into the Pinacate as a possible Biosphere Reserve [35,36]. Comprised of a shield volcano and extensive lava fields, the Pinacate forms “one of the most diverse, beautiful and representative zones of the Sonoran Desert” and due to its aridity is considered “one of the most pristine areas in the world” [3,32,33]. In 1979, 28,600 hectares of the “Sierra del Pinacate” had been designated a Protected Forest Zone and Wildlife Refuge under the Ministry of Agriculture and Water Resources (SAHR)[34,35]. In 1982, a binational workshop of scientists and managers “met to discuss and recommend the implementation of a Sonoran Desert Biosphere Reserve covering areas in both countries” [37,38]. After a three year process of collecting a large body of data, a management “master plan” for a biosphere reserve was released [35]. But after a restructuring of Mexico’s protected area system, the Pinacate was designated an “Ecological Reserve” under the Ministry of Urban Development and Ecology (SEDUE) [35]. Through the 1980s, SAHR and SEDUE sought to manage the area cooperatively, although the efforts “failed to yield satisfactory results” [35].

In 1988, the Environment Committee of the Arizona-Mexico Commission, ORPI, and two NGOs convened a conference on the Pinacate “in an effort to



identify mutual needs and interests compatible with the BR concept" [38-40]. Conference participants agreed that there was a need for "a larger public forum... to promote dialogue among residents of the Sonoran Desert" [39]. Coming out of this conference, Carlos Nagel, the President of Friends of PRONATURA (a US-based group supporting conservation activities in Mexico), "recognized a need to build local awareness of the region and planned a binational town-hall meeting" [6]. These plans took several years to come to fruition. Between 1988 and 1992, Nagel and two individuals at the Tucson-based Sonoran Institute, Wendy Laird and Luther Propst, investigated, documented, and built "broad support" for biosphere reserve concepts in the region. This work led to a 1992 regional forum entitled *Land Use Changes in the Western Sonoran Desert Border Area*. With 27 co-sponsors, the forum attracted over 200 participants from NGOs, chambers of commerce, Native Americans organizations, citizens from the three nations, and federal, state, and county governmental officials [6].

Numerous ISDA file documents from the time show that the organizers clearly had BRs in mind as a major theme for the 1992 conference, and that they hoped to maintain "local participation" in BR planning and management through further meetings and fora. After the conference, however, it was clear that generating local participation would require coverage of a much broader range of issues outside—sometimes far outside—those traditionally addressed under the aegis of "biosphere management." Concerns of the forum participants ranged from illegal border crossings and the potential effects of NAFTA to Native American rights and health care problems. Subsequently, through the remainder of 1992 and into 1993, a series of smaller follow-up "town hall" meetings addressed these multiple concerns. These meetings attracted a large and fairly consistent group of individuals. After a string of several self-designated names, the group adopted the title of the International Sonoran Desert Alliance in the summer of 1993.

From its conception, characterizing ISDA has been a difficult task—even for even those most closely involved in the initiative. Based on an extensive review of ISDA files, it is clear that ISDA developed several identities as it grew. On the one hand, participants adopted the term *alliance* in order to emphasize the importance of cross-cultural communication between the three main ethnic groups in the region—O'odham, Mexicans, and "Anglos." ISDA also operated as an information *network* through which various stakeholders of the region could coordinate activities on specific social, cultural, and environmental issues. ISDA was as well a *public forum* where individuals had an opportunity to voice their concerns. And ISDA was a burgeoning *institution*, with certain individuals at the top of an informal hierarchy driving specific issues—including particular emphasis on implementing the BR concept.

ISDA pursued development of the BR concept through two primary channels. One of these was the continued effort to designate the Pinacate and the Upper Gulf of California as federal BRs under Mexican jurisdiction, and to enhance the participation of the Hia Ced and Tohono O'odham Native Americans in management of the Pinacate BR. According to interviews with several of the



ISDA participants and Mexican officials involved in this effort, much of the impetus towards designating the Pinacate came from personal and political connections made during the formation and development of ISDA [41]. These efforts culminated in the designation of both areas as Mexican BRs in 1993 [42].

Beyond the designation of Mexican BRs, ISDA also led the effort to designate an expansive portion of the binational western Sonoran Desert—including the Pinacate, ORPI, and CPNWR—as an international BR. In March 1993, a select group of ISDA participants met with US Congressional staff members from the offices of several federal-level Congressmen to discuss the idea of an international BR in the Sonoran Desert. According to Laird, the response of the Congressional offices was enthusiastic, with Congressional staffers requesting a letter outlining the concept and budget needs [43].

Immediately thereafter, ISDA participant David Kidd drafted a proposal which then came up for review and approval at an April 1993 ISDA meeting. Specific components to the proposal were a resource inventory, public community forums, a nature center, and environment education curriculum [43]. The proposal led to Congress appropriating \$300,000 for ISDA's activities, which was channeled through ORPI in 1994 [38]. In the summer of 1994, Laird and Nagel informed the ISDA board that having succeeded in obtaining federal recognition and support of ISDA's activities, the "next major step" for ISDA was the "development of a biosphere cooperative program on the US side of the border as the next major step for the Alliance." This would not only provide "recognition that the Alliance is a force in the region," but would institutionalize "the current framework" of ISDA. Laird and Nagel also noted that the program would create the potential for federal and foundational funding, would "allow for access and better coordination with the biosphere reserve in Mexico," and would provide an "internationally recognized structure" that would not change current federal or private lands management [44]. Laird and Nagel argued to ISDA participants that it could only be through a nongovernmental structure such as ISDA that the biosphere concept could succeed:

...if the cooperative is not supported locally and if it is seen by residents as a federal GOVERNMENT program, then it will not work. This concept must be generated by people in the region. In fact, if we do pursue the biosphere cooperative idea, then it will be you who must sell it to your local communities. So, your perceptions are key [44].

By 1994, then, ISDA's prospects for establishing an international Sonoran Desert BR seemed difficult, but doable. "It's an ambitious plan," noted a newspaper reporter, but "thanks to the efforts of the International Sonoran Desert Alliance, the players have come to the table. Just a year into their project, the nine volunteer directors of the alliance have specific goals: They will help compile a biological database for the region, identifying critical areas for protection; they will prepare an economic profile of the desert's towns; and they will ask nearby communities what they think about the sister parks and other 'ecotourism' destinations" [3].

Along with outside observers, ISDA participants also saw their work as successful. In an extensive description of ISDA written for the US MAB Program in 1995, four key ISDA participants reported that the biosphere reserve program was working well because ISDA had “succeeded in building self confidence and self-reliance among its members” and had been “able to build a regional identity and a common understanding and support for the BR program” [38]. With this momentum, ISDA assisted scientist Gary Paul Nabhan—who had been called the “most aggressive proponent” of an international Sonoran Desert biosphere reserve [45]—on drafting the report, *Completion of the Sonoran Desert Biosphere Reserve Network along the US/Mexico Border*. The report was written for the 1995 Seville International Biosphere Reserve Conference [46], and was updated for submission to the US MAB Directorate in 1996 [31]. The report argues that “[n]owhere has there been a better opportunity” to link BRs across an international border, and that an expanded Sonoran Desert Biosphere Reserve would meet “many of the U.S. MAB criteria that Organ Pipe Cactus National Monument, in and of itself, does not” [31]. The report argued that “[p]erhaps the greatest benefit of reserve expansion would be to allow landscape- or ecosystem-level management of threatened organisms which are now suffering from the disruption of corridors and ecological processes between areas.... An overwhelming majority of the region’s land managers and conservation biologists surveyed believe that the ten most vulnerable species in the area would be better served by expanding MAB-style management across administrative and international boundaries” [31].

Collectively, ISDA’s efforts led to three principal developments that indicated a broader acceptance of the BR concept. First, the U.S. MAB Program designated and highlighted ISDA as one of several “partnerships” that “have developed at the regional level among groups interested in participation in the biosphere reserve principles of conservation of biological diversity and development of environmentally compatible economic use” [47].

Second, in late 1996 Arizona Governor Fife Symington and Sonora Governor Manlio Fabio Beltrones announced a joint endorsement of a “Binational Network of Sonoran Desert Biosphere Reserves” [48,49]. ISDA received credit for this intergovernmental initiative, which was described as a potential “beginning of a binationally managed biosphere reserve, an unprecedented event in international environmental cooperation” [48].

Third, another intergovernmental initiative occurred only a few months later, this time at the federal level with the signing of a “letter of intent” between US Secretary of the Interior Bruce Babbitt and Mexico’s Secretary of the Environment Julia Carabias. The letter of intent was meant to “expand existing cooperative activities in the conservation of contiguous natural protected areas in the border zone, and to consider new opportunities for cooperation in the protection of natural protected areas,” with the Sonoran Desert as one of two pilot projects (the other being in the Big Bend/Cañon de Santa Elena/Maderas del Carmen area of Texas, Coahuila, and Chihuahua) [50]. Specific activities under the letter of intent have included riparian habitat restoration projects, bird



surveys, ecotourism activities, and workshops on desert restoration, invasive weeds, and geographic information systems (GIS) [51].

ISDA's success in eliciting formal recognition of the BR concept raised high hopes on the part of its participants. Yet in hindsight, it is clear that political realities were coalescing to dissipate such hopes. In Mexico, the effort ran up against the federal government's "displeasure" with the Sonoran state government in working with the state of Arizona "without prior federal approval" [48]. In the US, meanwhile, the obstacles ran deeper than intergovernmental rivalry. ISDA's efforts to promote the BR concept occurred at the same time of a nation-wide groundswell of opposition to international conservation initiatives such as the MAB Program, the World Heritage Convention, and the Ramsar Convention on Wetlands of International Importance. Fear of loss of sovereignty and of UN international appropriation of US territory received national attention in 1996 when UNESCO representatives designated Yellowstone National Park as a "park in peril." Biosphere reserves and world heritage sites suddenly became "loaded topics" engendering a highly vocal and sometimes hostile opposition to UN conservation programs [45]. Such opposition led to contentious Congressional hearings and proposed federal legislation that would have put strong restrictions on the designation of biosphere reserves (the "American Lands Sovereignty Act" was passed by the US House of Representatives in 1997 but failed to pass the Senate) [52].

Both the US MAB Program and the US Congressional Research Service pointed out that these fears were ungrounded, emphasizing that the program is not based on an international convention and that the MAB Program explicitly recognizes each country's sole sovereignty over its BRs [30,53]. Yet due to substantial political pressures the Clinton Administration became extremely wary of setting public land policy in the context of international affairs, and thus "carefully distanced itself" from BR proposals "or anything that might remotely resemble black helicopters" [45] (the extremist "American militia movement" had identified mysterious overflights of "black helicopters" as indications of an impending UN invasion; the term is now used by the environmental community to ridicule the notion [54]). Subsequently, ISDA's efforts on BR planning decreased significantly. A comparison of ISDA's files demonstrates the dramatic change in ISDA's operations; most file contents in 1996 refer in some way to BR planning, but by 1998 the word "biosphere" and its related concepts had all but disappeared.

6. Conclusion

Before the evaporation of the biosphere reserve initiative, commentators praised ISDA's role in increasing the profile of BRs in the Sonoran Desert [3,8]. One environmental advocate noted that ISDA had "gone to the right people and interested officials who are very high up. This could end up being a model for cross-cultural preservation, and it certainly may help save the Pinacate" [3]. Interestingly, the effort to establish an International Sonoran Desert Biosphere



Reserve was effective enough to allow some to use language implying that it had actually happened [48,55].

Yet today there is no International Sonoran Desert Biosphere Reserve. Ultimately, the demise of the initiative provides a harsh demonstration of how larger societal forces can vitiate years of hard work. Not surprisingly, the very character of ISDA changed at this time. While it has continued to be involved in land management issues, that role has become increasingly tangential. For example, recent high profile efforts to establish both a Sonoran Desert National Park and a Sonoran Desert National Monument (two separate efforts covering different land units, the latter of which was designated in the last days of the Clinton Administration), have proceeded largely without significant input from ISDA. As its focus on land management issues has decreased, ISDA has shifted its operational emphasis towards the realm of environmental education—which, although an integral part of ISDA's agenda from its origins, now comprises its major programmatic work.

In essence, while ISDA has retained its “multiple identities” developed over the years since its conception, its fundamental character has shifted from that of a participatory community-based network to an organization focusing on educational program development. Although the historical record does not clearly identify the degree to which the demise of the BR caused this evolution, it was undoubtedly a significant factor.

Surprisingly, during interviews with many of the actors involved in ISDA during this time period, few bemoaned the demise of the international BR effort. Although they did not avoid the issue, to a person the interviewees demonstrated a resolve not to focus on why or how the BR effort dissipated. Rather, they looked to ISDA's significant role in (1) influencing the Mexican government to designate two BRs in the area, (2) coordinating the actions of a number of federal and nongovernmental actors who otherwise would never have met, and (3) promoting new and more widespread interest in conservation—be it in the form of a biosphere reserve, national park, or “natural area.” Furthermore, many interviewees cited ISDA's potential to reengage in protected area planning and sustainable development activities.

Indeed, some interviewees even argued that the effort never truly disappeared, but simply dropped the politically-charged appellation of “biosphere reserve.” This overstates the case, as ISDA no longer emphasizes many of the core BR concepts. Yet given the circumstances under which it operated, ISDA—or more precisely, the entire process of putting ISDA together—did significantly alter the status quo of land management in the Sonoran Desert. Although each BR experience is highly individualistic, the lesson here is clear and transferable: those contemplating an effort to establish a biosphere reserve should not be intimidated by the threat of failure or fact of ominous societal forces working against the prospect. The Sonoran Desert would be a different and poorer place had such intimidation prevailed.



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