

Preface

Human beings artificially impose international boundaries onto the natural landscape. Sometimes, they build walls and fences to demark these political boundaries, which prevent plants, animals, water, and other natural resources from crossing these boundaries. Fences and walls unnaturally bisect natural resources, and thus affect these natural resources in special ways.

Biodiversity hot spots in the border region—which represents the intersection of a set of unique climates with widely ranging topographic, geologic, and soil extremes—include an extraordinarily high number of rare and endemic species. Rapid population growth and urbanization in this region have also caused disproportionately higher rates of listed species, legal protections, and even extinction.

Many border issues, including the protection of habitats and ecosystems, are low-priority issues to local, state, tribal, and federal authorities. However, these frontier and binational issues require collective concern and action. Border stakeholders should therefore discover ways to elicit the involvement of all levels of government. In the post-September 11 security regime, the obstacles to conserving species, habitats, and ecosystems that require large, set-aside tracts of land—and thus some degree of border permeability—are especially acute. The new security mandate seeks to bolster, harden, and increase patrol activity throughout the border regions. According to Southwest Strategy, the federal government owns much of the border and its nearby land. For example, the federal government owns 86% of the Arizona-Sonora border and 62% of its adjacent lands. Thus, the prerogatives of the Department of Homeland Security are increasingly at odds with conservation efforts and with the natural distributions and migrations. Additionally, the environmental effects of undocumented immigration continue to plague the region.

Transboundary Ecosystem Management

The Southwest Consortium for Environmental Research and Policy (SCERP), a collaboration of five Mexican and five U.S. universities, conducts environmental, ecological, and human health research to address the binational environmental issues in the entire 10 state U.S.-Mexican binational regions. SCERP applies its information, insights, and innovations to better the lives of the region's 14 million residents. SCERP acts as a "boundary organization," which Jorge Soberon defined in 2004 as an organization that is mandated and able to "translate and communicate between the world of the policy-makers and the world of science...Such institutions obtain, create, or contract for the required data, organize and analyze it to turn into information, check with experts as needed, and translate the information into knowledge that are relevant to the user."

SCERP and its co-sponsors—the Office of International Affairs at the U.S. Environmental Protection Agency (EPA), the International Affairs Unit of the Mexican Secretaría de Medio Ambiente y Recursos Naturales (SEMARNAT), the Border Trade Alliance, and the U.S.-Mexico Chamber of Commerce—dedicated their sixth annual policy conference, or Border Institute, to understanding and resolving the ecosystem management differences that exist between the two principal and the several tribal nations in the U.S.-Mexican border region.

This monograph's 10 chapters were presented at Border Institute VI as background information and discussion and preparatory points during three plenary sessions, a keynote address, and break-out sessions to develop policy recommendations on transboundary ecosystem management. The Executive Summary contains a summary of the proceedings, as well as the participants' policy recommendations for government agencies, non-governmental organizations (NGOs), and private property owners, which they can implement at the international, federal, state, tribal, and local levels. A list of Border Institute participants and their affiliations is also included herein.

The first chapter, by D. Rick Van Schoik, Elena Lelea, and John Cunningham, who are on the SCERP Directorate, orients border experts to biodiversity and conservation issues. It then asks the central question of whether the vulnerabilities of hotspots in the

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U.S. and Mexico to threats are commensurate with the size of the land tracts that their governments, private entities, or NGOs set aside. The chapter also asks whether a new protective legal framework and/or institution is warranted. Consultant Joanna Salazar updated a paper she and Mark Spalding, of The Ocean Foundation, wrote five years ago that listed and examined natural protected areas and efforts on each side of the border. The chapter also discusses the correspondence between the urgency and size of conservation need and the corresponding protection efforts on that landscape, and it further identifies a number of local successes that could be linked together to create overarching and workable regional conservation strategies. Christopher Brown of New Mexico State University (NMSU) and his geographic information system (GIS) colleagues, NMSU's Robert Czerniak and Christopher Buscaglia of the assessor's office in Doña Ana County, N.M., show how GIS can portray and analyze these complex relationships. Their mapping efforts are available through the SCERP website at <http://www.scerp.org>.

Jaidev "Jay" Singh, a science and diplomacy fellow at the U.S. Agency for International Development, was the keynote speaker for the Border Institute. Singh discussed how lessons learned in different regions of the world can be applied to the U.S.-Mexican border region. His message about "sovereignty bargaining" showed how both the U.S. and Mexico can benefit from transboundary cooperation and collaboration and still retain strict sovereign powers.

In chapter five, Carlos Graizbord, an urban planner, and Emilio de la Fuente, an environmental engineer, address the contentious issues over land ownership/tenure and water rights/use and how these two issues overlap. The authors describe complex land ownership patterns and the vast differences in ownership patterns in the U.S. and Mexico and within the different regions of each country. Graizbord and de la Fuente also discuss how history shaped these land ownership patterns. In the following chapter, Mary Kelly, of Environmental Defense, and Héctor M. Arias Rojo, of WWF Mexico, demonstrate the intimate relationship between water availability and quality and how this relationship affects habitat viability and restoration. They also present an overall prognosis of the arid region's ecosystem health. The concept of nature's need for

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water linked many of the themes that were present at the Border Institute and this concept is one of the overarching themes of this monograph.

The final chapters consider actual conservation designs and tools within a binational context. Michael White of the Conservation Biology Institute and his diverse binational team of conservation biologists have been identifying ideal conservation cores, corridors, and buffers throughout the southern California and northern Baja California region for the last several years. In the chapter co-authored by Jerre Ann Stallcup, Katherine Comer, Miguel Angel Vargas Téllez, José María Beltrán-Abaunza, Fernando Ochoa, and Scott Morrison, the authors discuss how the different priorities and methods of the U.S. and Mexico can be reconciled. The central issue, as it always is, is acquiring funding for acquisition and/or conservation easements, which dovetails with funding for management and control efforts that will continue into perpetuity. Dallen Timothy, an economist from Arizona State University, portrays unique opportunities in the binational sector for innovative revenue streams that can fund protection and preservation.

The last two chapters range from discussions on very practical solutions to critical, but somewhat lofty political discussions. Katherine Comer, of the Institute for Regional Studies of the Californias at San Diego State University, uses an actual project to protect land that straddles the U.S., Mexican, and Campo tribe national boundaries to illustrate local and immediate issues that should be considered and to illustrate the variety of options available. Comer's chapter contrasts with the chapter by Kelly Hoffman, who is a graduate student from Princeton University. Hoffman presents the difficulties that surround sovereignty issues and she illustrates how quickly treaties become dated and can no longer address contemporary issues.

SCERP thanks all Border Institute participants for their efforts to make the event on transboundary ecosystem management a success. SCERP also salutes Guillermo Torres Moye, Alan Torres Páramo, Ignacio M. Barrientos, Bertha Hernández, and Gabriela Carrillo for their work on the Spanish translations of the abstracts in each chapter, and SCERP staff Amy Conner and Courtney Baird, who edited and coordinated the publication of this volume.