GeoJournal
DOI 10.1007/s10708-008-9158-4

# Peace Parks and jaguar trails: transboundary conservation in a globalizing world

**Brian King · Sharon Wilcox**



**Abstract** An increasingly utilized strategy for expanding conservation in the developing world has been the promotion of protected areas that supersede national borders. Alternatively known as transfrontier biosphere reserves, transfrontier or transboundary conservation areas, or Peace Parks, these protected areas are aggressively advanced by conservation agencies for their purported ecological and economic benefits. This article provides a comparative assessment of two case studies to understand the various impacts of transboundary conservation. The Great Limpopo Transfrontier Park, which unites protected areas in South Africa, Mozambique and Zimbabwe, is contrasted with efforts to protect jaguars along the United States–Mexico border. We argue that while these cases are promising for the purposes of biodiversity protection, they demonstrate that transboundary conservation can minimize political context, contributes to the hegemony of international conservation agendas, and remains closely linked to economic neoliberalism and decentralization in the developing world.

B. King (✉)
Department of Geography, The Pennsylvania State University, 302 Walker Building, University Park, PA 16802, USA
e-mail: bhk2@psu.edu

S. Wilcox
The University of Texas at Austin, Austin, USA

**Keywords** Conservation · Great Limpopo Transfrontier Park · Peace Park · South Africa · Transboundary conservation · Transfrontier conservation · U.S.–Mexico border

## Introduction

The global expansion of national parks and protected areas has produced a wealth of research that examines their effectiveness in promoting biodiversity protection (Terborgh 1999; Zerner 2000), in impacting livelihoods for neighboring populations (Neumann 1998; King 2007), and enabling the ascendancy of international conservation organizations in shaping policies in the developing world (Schroeder 1999; Chapin 2004; Zimmerer 2006). Driven in part by the discourses of sustainable development and economic neoliberalism, the aggregate territory set aside for conservation has increased dramatically over the past three decades. It is estimated that the total area dedicated to conservation has increased from less than 1.0 million square kilometers in 1970 to more than 19.6 million square kilometers in 2006 (IUCN and WCMC 1998 in Zimmerer 2006; IUCN and WCMC 2006). While much of the initial impetus for establishing conservation areas in the developing world was tied to colonialism, the recent expansion has been facilitated by a "third wave" that emerged in the late 1980s and early 1990s that has produced "an unprecedented variety and extent of spatial arrangements whose

environmental management goals and prescribed activities may vary from strict nature protection to sustainable utilization" (Zimmerer 2006, pp. 65–66).

One of the central issues meriting greater attention is the size and scope of these protected areas, particularly as implemented in the developing world. International conservation organizations are increasingly advocating for large-scale initiatives that supersede national political borders. Alternatively known as transfrontier biosphere reserves (UNESCO 1996; Fall 1999), transfrontier or transboundary conservation areas (Westing 1998; Magome and Murombedzi 2003; Wolmer 2003; Spenceley 2006; Ramutsindela 2007), or Peace Parks (Duffy 1997; Godwin 2001; Ali 2007), these protected areas represent a compelling approach to natural resource management that simultaneously raise a host of political, social and ecological challenges. Rather than restricting conservation territory within national borders, transboundary conservation areas (TCAs) supersede political borders to expand the total area for biodiversity conservation. TCAs are promoted for a variety of reasons, including the desire to expand the size of conservation areas to maintain viable gene pools, protect migratory routes and ecological corridors for terrestrial mammalian species, and to connect clusters of protected areas to maximize species range (Zbicz 1999). The concept of bioregionalism is also employed in asserting that protected areas should be demarcated not by the political boundaries of particular countries but by the ecosystems that most require protection (Wolmer 2003). The consequence has been a marked increase over the last decade of conservation projects that cross national borders while enlarging the total area available for the protection of biological diversity.

This article provides a comparative assessment of two cases of transboundary conservation to derive lessons for conservation theory and practice. The first case study examines the Great Limpopo Transfrontier Park (GLTP) that links the Kruger National Park in South Africa to the Gonarezhou National Park in Zimbabwe and the Limpopo National Park in Mozambique. The Great Limpopo project was formally established in November 2000 to facilitate wildlife migration, particularly of elephants, to larger ecological zones, while promoting tourism through the loosening of borders between South Africa and Mozambique. Also identified as one of Africa's "Peace Parks" (Godwin 2001; Wolmer 2003; Ramutsindela 2007), this initiative is aggressively marketed as generating economic development through the creation of incentives to conserve wildlife through hunting and ecotourism revenues. In addition to these perceived benefits, Peace Parks are also being promoted as an opportunity for transnational cooperation, oftentimes between countries that have histories of violent conflict (Wolmer 2003). As will be shown with the GLTP, this raises questions as to the potential of conservation to facilitate international collaboration, particularly since protected areas have often produced contestations between social actors with competing goals and priorities.

The second case study examines recent attempts by various actors to protect jaguars and other endangered wildlife in the U.S.–Mexico borderlands region. Long believed to be extirpated north of the political border, two independent documented jaguar sightings in Arizona and New Mexico in 1996 sparked international interest to establish conservation areas within the borderlands. With the future of the jaguar in the United States believed to be entirely dependent upon the species' ability to migrate across this border, various stakeholders are engaging in a number of strategies to identify and protect suitable habitat, establishing corridors and reserve areas for these cats. Efforts to protect the jaguar and its habitat reveal the complexities extending beyond Peace Parks initiatives that must be addressed in transboundary conservation planning. The article then concludes with a discussion of the lessons these two cases provide of transboundary conservation. We argue that while these cases offer promise for biodiversity protection, a comparative analysis helps demonstrate that transboundary conservation can minimize political context, contributes to the hegemony of international conservation agendas, and remains closely linked to the expansion of economic neoliberalism in the developing world.

## Peace Parks in Southern Africa: the Great Limpopo Transfrontier Park

Although the growth of TCAs is a relatively recent phenomenon, transfrontier conservation has existed for some time. The world's first "Peace Park" was established in 1932 linking Glacier National Park in the United States with Canada's Waterton Lakes National Park. Transboundary projects have been

facilitated through the Biosphere Reserve Statutory Framework (UNESCO 1996) that draws upon the biosphere reserve concept formulated in 1976 (Fall 1999). While initially a unique category of protected area, "biosphere reserves are now regarded as an international designation under special status, containing zones subject to different management regimes according to national laws" (Fall 1999, p. 252). By 2001, there were 169 transboundary projects in 113 countries involving a total of 667 individual protected areas (van der Linde et al. 2001 in Magome and Murombedzi 2003). In addition to international agencies, regional associations and foundations have been active in advancing transboundary conservation. The Southern African Development Community (SADC) Protocol on Wildlife Conservation and Law Enforcement of 1999 specifically promotes regional cooperation for conservation and supports the development of TCAs (Wolmer 2003). Non-governmental organizations (NGOs) and private foundations have also been involved in expanding transboundary conservation in Southern Africa. Chief amongst them is the Peace Parks Foundation (PPF), which was founded by Anton Rupert, the South African industrialist and former president of WWF-South Africa. Working in collaboration with leaders from South Africa,[1] Zimbabwe and Mozambique, PPF has actively pushed for TCAs by advocating their potential benefits for biodiversity protection and commercial development (Wolmer 2003).

Arguably, the strongest justification for increasing the size of protected areas is an ecological one, as larger areas sustain the integrity of bioregions while allowing the maintenance of gene pools and migratory routes for large mammalian species (Wolmer 2003). As Wolmer (2003, p. 264) explains, "transboundary conservation initiatives often involve opening up 'biological corridors' and thereby re-establishing the 'connectivity' of bioregions and restoring 'ecosystem functions.'" This has contributed to the insistence by conservation agencies of the need to integrate bioregions and establish TCAs irrespective of administrative or national boundaries. Advocates of transboundary conservation employ much of the same language of national parks and ecotourist ventures in suggesting that these projects generate economic development and private sector investment. Additionally, these initiatives are packaged through sustainable development language, and are "increasingly proposed as a means for the socio-economic upliftment and empowerment of previously marginalized communities who will be able to participate in, and derive benefits from, the management and sustainable use of wild resources, principally via the economic incentives of hunting and ecotourism revenues" (Wolmer 2003, p. 266). As an example of this, the African Wildlife Foundation states that transboundary areas are "protected zones surrounded by zones where rural communities can also develop wildlife as a preferred land use without having to vacate their land or give upon [sic] their ownership to the State as a National Park" (African Wildlife Federation 2002). This description is particularly revealing as it presents mega-parks as a viable strategy for securing livelihood opportunities and land tenure for affected populations that would be in potential jeopardy from a traditional conservation scheme, such as a national park.

Finally, transboundary conservation is justified as a vehicle for facilitating peace-building between partnering countries. Many of these projects are referred to as Peace Parks because they are promoted on the hope that they will contribute to international collaboration. This assertion is reified in the academic and policy literatures on these initiatives. As one example, Fall (1999, p. 252) explains, TCAs offer "the opportunity of using the field of environmental management for fostering good neighbourly relations, cementing and reinforcing confidence between states through the joint management of protected areas." Similarly, Godwin (2001, p. 11) cites Willem van Riet of the PPF in provocatively stating that "political boundaries are the scars of history" and that transboundary conservation will assist in "the development of trust, which is fundamental to peace between countries." These assertions have provided a compelling political justification for enlarging conservation areas since they are positioned as an effort to promote international cooperation between nations that often have histories of violent conflict.

The Great Limpopo Transfrontier Park (GLTP) is the product of a variety of agencies and agreements. In November 2000, South Africa, Zimbabwe and

[1] Former South African President Nelson Mandela has been a particularly effective public face for PPF, serving as a patron emeritus. At the time of the launch of the GLTP, he commented "The concept of transfrontier parks sends a powerful symbol that countries are ready to live in peace and solidarity. And these parks attract a large number of foreign tourists, which provides jobs to the people in that area" (Godwin 2001, p. 30).

Mozambique signed an agreement officially establishing the Gaza-Kruger-Gonarezhou Transfrontier Conservation Area (GKG), covering an area of 99,800 square kilometers (Wolmer 2003). The GKG linked the Kruger National Park in South Africa to the Gonarezhou National Park in Zimbabwe and the Zinave and Banhine National Parks and the Coutada 16 Wildlife Utilization Area of Mozambique. Private game reserves and community conservation initiatives, such as the Makuleke Game Reserve, were considered part of the larger area. The core protected areas of the Kruger National Park, Gonarezhou National Park, and the Limpopo National Park in Mozambique were identified as the GLTP in 2001. In a symbolic gesture that received widespread coverage in the South African press, in September 2001 seven elephants were transferred from the Kruger Park to Mozambique (Graham 2001; Maker 2001; Travers 2001). As then Environmental Affairs Minister Valli Moosa declared at the time, "The translocation of the elephants is a huge undertaking. It has never been done before. The only person who can come close to doing something like this is Mr. Noah" (Maker 2001, p. 1). The transfer of elephants was an economic statement due to their value to South African National Parks (SANParks), and as will be discussed, also a telling indicator of one of the key motivations behind the project; specifically, to provide a release valve for the growing elephant population in the Kruger Park.

There are a variety of political and economic circumstances that helped generate support for TCAs in Southern Africa and the establishment of the GLTP. Following the 1994 democratic elections, South African conservation agencies were finding natural resource management to be a reduced priority for the African National Congress (ANC) national government. Various goals that were linked to the Reconstruction and Development Programme (RDP) policy document, including education, business development, and housing, were prioritized for governmental investment. National and provincial conservation officials lamented that conservation was being under-funded and that commercialization and foreign investment were increasingly essential to the future of conservation. The GLTP provided a unique opportunity, therefore, to present a new direction to the conservation sector while skirting the ways that conservation was linked to racial segregation and land dispossession during apartheid. In fact, the Kruger National Park was closely linked to apartheid policies (Carruthers 1995; Honey 1999) and Ellis (1994) reports that it was the location of counter-insurgency activities by the South African Defence Force (SADF). The establishment of the GLTP served as an effective mechanism for downplaying how conservation in South Africa was facilitated through minority rule while discursively presenting transboundary conservation as a vehicle for peace-building. The PPF, for example, is quick to identify "colonial borders" as what divides ecological and social landscapes as opposed to more recent apartheid spatial policies (Ramutsindela 2004, p. 68). Presenting the GLTP as an economic opportunity for resident populations allows the conservation sector to avoid the painful history that contributed to poverty in the rural areas while providing an expansive vision necessary for marketing conservation in the post-apartheid era.

It appears that one of the chief motivations for establishing the GLTP was to provide a release valve for the elephant population in the Kruger Park, which is believed to be in surplus partly as the result of the termination of culling due to protests by the international community. Driven in part by the international ban on ivory trading instituted through the United Nations Convention on International Trade in Endangered Species on Wild Fauna and Flora (CITES) in 1989, the fate of the African elephant has become a touchy subject for SANParks. The mere mention of reinstituting culling provokes international outcries, which makes GLTP seem like an ideal solution for expanding the aggregate area for the species. This was evident in the promotion of the project, as the expansion of the area would give elephants literally a "new lease on life" (African Wildlife Federation 2002), and as Magome and Muromedzi (2003, p. 124) report "South Africa was 'pushing very hard' and had, indeed, announced plans to start moving, in August 2001, 300 of the 1,100 elephants earmarked for Mozambique's protected area."

The politics of elephant culling seems to be driving the GLTP irrespective of the uncertain economic benefits it provides to participating countries and local populations (Wolmer 2003; Ramutsindela 2004). The GLTP is advertised as providing a unique tourism opportunity by allowing tourists to travel throughout the park while crossing national borders without an entry visa (Kruger Park Times 2006). To facilitate this, the Giriyondo Tourism Access Facility, which links the Kruger National Park to the Limpopo National Park in

Mozambique, was opened to the public in December 2005 (Kruger Park Times 2006). Wolmer (2003) reports that neither Mozambique nor Zimbabwe were prepared for the launch of the project, with the former country requesting a delayed opening ceremony to allow it to build a tourism lodge facility.[2] This has contributed to a perception that with the previously well-developed infrastructure in the Kruger National Park, South Africa is most likely to benefit from tourism to the GLTP. Meanwhile, ongoing political and economic instability in Zimbabwe resulted in local people resettling themselves in the Gonarezhou National Park, which threatens its inclusion in the process (Magome and Murombedzi 2003; Spenceley 2006).

Regardless of the captivating language associated with the initiative, the creation of the GLTP has had direct consequences for local people living within and adjacent to the conservation area. Magome and Murombedzi (2003) suggest that at the launch of the project, there was concern that South Africa was moving too quickly and ignoring the local people living inside the areas of Mozambique and Zimbabwe. In particular, the Limpopo National Park in Mozambique, which was created in 2001 from the Coutada 16 hunting zone, had an estimated human population of 26,500 (Spenceley 2006). Its establishment as a national park occurred regardless of the human presence, which caused the World Bank to comment that "despite their efforts to resolve the fate of communities living in Coutada 16…in 2001, the LNP was gazetted as a national park and some animals were allowed to enter the park area. This created a lot of media attention and controversy around the project" (World Bank 2004 in Spenceley 2006, p. 661). There is an ongoing resettlement process to encourage local populations to relocate, preferably outside of the park. The presence of a sizeable human population in the Limpopo National Park was made more troubling by the tendency of the conservation sector to downplay the human presence in the region. The African Wildlife Foundation, for example, described the Limpopo National Park as a "vast, empty wilderness" (African Wildlife Foundation 2002). These developments have contributed to concerns about the future ecological and economic benefits from the GLTP and other transboundary conservation projects in the region.

[2] Spenceley (2006) reports that there is no tourism infrastructure inside the Limpopo National Park and that it is not open to tourists.

## Spaces for jaguars: conservation along the U.S.–Mexico border

The U.S.–Mexico borderlands have been the site of a variety of transboundary conservation initiatives starting with international interest in Peace Parks in the 1930s. While official transboundary conservation initiatives have not been realized due to a number of political, economic, and social reasons, large swaths of wilderness, both public and private, have been incorporated into unique management agreements (Sifford and Chester 2007). Subregions in the borderlands have been protected through markedly different conservation strategies. In the Chihuahuan desert along the eastern section of the U.S.–Mexico border, the idea of an international Peace Park was proposed in the 1930s between Texas, Coahuila and Chihuahua. Although this was not realized, Big Bend National Park was created in the United States along the boundary. Since that time, efforts on both sides of the border have developed a patchwork of protected areas, forming what proponents refer to as a "transboundary mega-corridor." This area encompasses nearly 1,000,000 hectares of land joining Big Bend National Park, Black Gap Wildlife Management Area, the Big Bend Ranch State Park, and the Rio Grande Wild and Scenic River in Texas with the Cañón de Santa Elena and the Maderas del Carmen Flora and Fauna Protection Areas in Chihuahua and Coahuila, Mexico.

While lands on both sides of the border are officially protected, the ways in which this is defined and articulated varies significantly. In the United States, the four different protected areas under state or federal protection reflect traditional national parks strategy, with no human inhabitants permitted to reside in the areas. In Mexico, the protected lands were established out of former *ejido* (communal) property, and 80–85% of these areas remain privately owned (Herring 2002; Sifford and Chester 2007). Perhaps most notably, this area has become the site of a new model of land conservation in Mexico, based upon public–private partnerships facilitated through commercial ownership and involvement. In 1999, CEMEX, a large Mexican cement company, purchased over 175,000 acres of

land in the Maderas del Carmen with the stated goal of protecting this land and setting a standard of land stewardship. Government participation is a significant part of this privately-acquired conservation model, including the Mexican government's designation of the El Carmen Wilderness on CEMEX-owned land as the first certified wilderness on private land in Latin America (Sifford and Chester 2007). This model of corporate-government partnership has received acclaim for the environmental protections, jobs, and example of land stewardship it has introduced into this region where any method of conservation initiative is entirely voluntary (Sifford and Chester 2007). Ultimately, though, this strategy has placed large tracts of land in the hands of a commercial partner who is not legally bound to continue its programs in perpetuity, raising concerns about the long-term sustainability of this approach (Herring 2002).

Unlike eastern U.S.–Mexico border conservation programs that are driven by public–private alliances facilitated by large commercial entities, approaches in the western border region have been driven by the government and nonprofit sectors. In the western Sonoran Desert, the earliest protected areas north of the border also began in the 1930s out of an interest in international Peace Parks, with the establishment of the Organ Pipe Cactus National Monument (OPCNM) in 1937, and the Cabeza Prieta Game Range (CPNWR) in 1939 (later designated a National Wildlife Refuge in 1976). Since the early 1960s, efforts to integrate these two parks as part of a Sonoran Desert Peace Park have been unsuccessful for many of the same reasons these initiatives were unsuccessful in the Big Bend area, including differences in land tenure, a cadre of social, political, and economic reasons, and a general sense of distrust (Sifford and Chester 2007). By the 1970s, growing interest among scientists and conservationists advocating international cooperation resulted in the designation of the Reserva de la Biosfera El Pinacate y Gran Desierto de Altar situated across the border from OPCNM and CPNWR, along with the Reserva de la Biosfera Alto Golfo de California y Delta del Rio Colorado in 1993. However, no official connection was ever made between the protected areas to create a Peace Park.

While transboundary conservation efforts have taken shape to the east and west of the border with a focus on landscape protection, along the central region of the U.S.–Mexico borderlands strategies have centered on the protection and conservation of rare, threatened and endangered species. In particular, the jaguar has captured the attention of conservation NGOs and the national media as a "keystone species" whose survival north of the border symbolizes the struggles and potential of many other species whose migratory ranges are bisected by national borders. The historical range of the jaguar extends from the northern regions of South America, throughout Central America and into the arid regions of the southwestern United States (Seymour 1989; Rabinowitz 1999; Sanderson et al. 2002; McCain and Childs 2008). However, by the mid 1900s, jaguars had largely disappeared from the United States, driven south of the border by threats from development and hunting (Brown 2000; Brown and Gonzalez 2001; McCain and Childs 2008).

The jaguar was largely considered extirpated from areas north of the border until two mountain lion hunters independently documented the presence of jaguars in Arizona and New Mexico in 1996 (Glenn 1996; Childs 1998; McCain and Childs 2008). "Capturing" these cats on film and video, the images were widely reported in the local and national media, fanning the flames of public interest and promoting renewed attention to jaguars among state and local wildlife agency officials, conservationists, ranchers, and local residents (Brown and Gonzalez 2000; McCain and Childs 2008). Jaguar sightings led to litigation that forced the United States government to list the jaguar in 1997 as an endangered species under the Endangered Species Act. However, the U.S. Fish and Wildlife Service also determined that it was "not prudent" to designate any particular areas "critical habitat" for the jaguar, arguing that the biggest danger the jaguar faced was illegal hunting, not habitat loss (USFWS 2006). This position remains controversial and while it is currently being challenged in the courts, conservationists are also pursuing private strategies to assist in the protection of the jaguar in this area.

Development and habitat fragmentation drastically affect the jaguar's prey base as well as fragment the cat's population into more isolated pockets, limiting individual ranges, genetic variability and exposing jaguars to a number of potentially lethal threats (Brown and Gonzalez 2001). Particularly in Arizona, the rapid growth of the human population has continued, and in 2006 the state was named the fastest-growing state by the U.S. Census Bureau, with an annual growth rate of 3.6 percent (U.S. Census 2006). South of the border,

hunting remains a significant threat to jaguar populations, and while jaguars are a protected species in Mexico, enforcement is difficult. Most of these illegal killings are due to livestock depredation on cattle ranches (Rosas-Rosas 2006).

An alliance of three NGOs, two American (Northern Jaguar Project and Defenders of Wildlife) and one Mexican (Naturalia) have worked to protect the breeding population in Arizona by privately acquiring land to create the Los Pavos Jaguar Reserve. With financial assistance from the Mexican government, these groups facilitated the purchase of a 10,000 acre private cattle ranch in 2003 (Miller 2007). Following the purchase, the NGOs made changes in order to manage the area for jaguars by removing cattle and hiring "jaguar guardians" (local *vaqueros*, or cowboys, who oversee the property) (Miller 2007). Various outreach programs in the region have also emphasized the economic value of the jaguar for ecotourism. However, the reserve is not nearly large enough to support a viable population in this region, as male jaguars require at least 50 square miles of habitat and scientists suggest that a protected area must be large enough to support at least 50 resident jaguars (Soule 1980; Rosas-Rosas 2006). These groups are exploring options to purchase adjoining ranches to expand the reserve, but several concerns remain. Some residents view the reserve as a threat to the region's way of life and culture, which is based largely on cattle ranching. Management decisions are also complicated, with far reaching ecological, social and political impacts on the people, wildlife and landscape of the area.

Current jaguar conservation efforts involve a matrix of private lands and protected areas to ensure areas are connected through habitat corridors. In Sonora, the area between the closest breeding population and the border includes protected lands such as the Ajos-Bavispe National Forest Reserve and Wildlife Refuge. Additionally, private lands in Mexico reveal a complex landscape of private and third sector partnerships, including the Cuenca de los Ojos Foundation's group of private ranches managed to preserve and restore biodiversity; Rancho Los Fresnos, a 10,000 acre ranch co-managed by the Nature Conservancy, and Mexican nonprofits Naturalia, and Biodiversidad y Desarrollo Armónica; and other private "jaguar friendly" land holdings connect suitable habitat south of the border with some level of protection for the jaguar. In the United States, a matrix of federal and state lands offers protection for the jaguar north of the border. These protected areas include national forests (such as the Coronado), wildlife refuges (San Bernardino, Leslie Canyon, and Buenos Aires), and lands managed by the Bureau of Land Management and the states of Arizona and New Mexico. A recent bill introduced before Congress proposes to set aside an additional 83,400 acres northwest of the border town of Nogales in a region known as the Tumacacori Highlands Wilderness Area, and current negotiations with the Tohono O'odham Tribe also hold the promise of expanding the area of protection. Private ranches also play a significant role in supporting habitat connectivity in the U.S., with more than one million acres conserved by members of the Malpai Borderlands Group. This region includes the Gray Ranch, a 500 square mile park initially acquired by The Nature Conservancy and managed by the Animas Foundation. Additionally, private ranches such as the Cuenca de los Ojos Foundation and ranchers who participate with the Altar Valley Conservation Alliance and the San Rafael Valley Alliance all manage their land utilizing jaguar-friendly methods.

While NGOs and other stakeholders work to ensure on-the-ground protection for this species at the very northernmost extreme of its range, the physical development of the political border continues to threaten the future of jaguars and efforts to support transboundary conservation more generally (McCain and Childs 2008). In contrast to the political climate fostering the GLTP in southern Africa, conservation strategies along the U.S.–Mexico border face a different set of challenges, marked by increasing militarization and socio-political hostilities along the political boundary. The creation of the United States Department of Homeland Security in 2002 marked the U.S.'s heightened concern with securing political borders against terrorism and other threats. Under the authority of the U.S. Department of Homeland Security, walls, lights, and networks of roads have been fast-tracked for construction along the border, along with patrols by helicopters, trucks, off-road vehicles (ORVs), and other vehicles (Secure Fence Act 2006). While the construction of walls along the border creates an obvious impediment to the movement of terrestrial wildlife species, other measures such as ORV roads and trails destroy remaining fragile connective habitat. Studies have also shown that other measures such as the 57-foot-high, thousand-watt lights placed along the

border act as impenetrable barriers for nocturnal dispersal, foraging, and reproductive opportunities of sensitive wildlife species (Grigione and Mrykalo 2004). As these border protection measures expand, the future of transboundary conservation along the U.S.–Mexico border remains uncertain.

## Conservation in a globalizing world: lessons from transboundary conservation

While conservation efforts in southern Africa and along the U.S.–Mexico border might initially seem to share little common ground, a comparative analysis generates several findings that merit discussion to properly understand the social and ecological impacts of transboundary conservation. Firstly, both of the cases demonstrate how space is constructed to enable the advancement of conservation priorities in the developing world. Transboundary conservation provides a spatial fix for each of the problems raised in these cases, by providing a release valve for elephants from the Kruger Park and potential migratory corridors for jaguars from Northern Mexico. In both of these cases, the protection of migratory routes is enhanced through conservation areas that supersede national borders. These case studies show that to facilitate these initiatives, conservation planners often label national borders as "artificial," while downplaying the political processes that have resulted in their construction. This prioritization of the ecological over the political might be advantageous in the promotion and attraction of external investment, but it reduces the likelihood of successful conservation planning. In the case of the jaguar, movement across the U.S.–Mexico border is vital to the presence of this species in the region, but an increasingly militarized border is detrimental and thus political and military agendas require careful consideration. Similarly, the GLTP has been promoted as a means of reconciling "colonial" border constructions that are destructive to species while downplaying the contemporary use of borders by participating countries. The supposed artificiality of borders for the purposes of wildlife protection comes into question when the same governments are aggressively pursuing border control and security measures in close proximity to these conservation projects.

Although advocates of transboundary conservation are quick to assert that national borders are socially produced, ecological areas are not similarly represented as socially constructed. Transboundary conservation rests on particular ecological concepts including bioregionalism and migratory corridors that often rely upon crisis narratives to maximize conservation interventions. While NGOs identify different hot spots, ecoregions, and zones of concern, be they within one country or across borders, there is much to the process of habitat selection that remains arbitrary. Ultimately, the areas identified for wildlife protection are selected because of a mix of social, economic, and political opportunities. As the case of the jaguar demonstrates, while corridors may be pieced together to allow species to pass through various regions, there remains the question of whether these pathways are utilized. Much is unknown about the jaguar and its migratory preferences, and the creation of small pockets of protection may afford little help at all. While models may predict behavior, corridors and other migratory strategies cannot compel the movement of species and thus might provide little benefit for biodiversity conservation.

Secondly, the two cases demonstrate the need to closely interrogate the merging of conservation with discourses of "peace-building." Since much of the justification for TCAs rests on the idealization that these initiatives can promote international collaboration, more consideration is needed to assess how protected areas typically engender conflict over space, land tenure and livelihood production possibilities. This is particularly needed since a theme of some recent research seemingly accepts the potential of these initiatives to support peace-building. As evidence of this, in a recent volume on Peace Parks, Ali (2007, p. 2) suggests, "The concept of peace parks challenges many deeply rooted historical assumptions about conservation zones, which have often been considered a source of conflict themselves due to the dispossession of land, differentiated values about conservation versus preservation, and consequently ecological primacy versus political expediency." We assert that the two cases discussed in this paper suggest quite the opposite; namely that transboundary conservation has the potential to further the legacy of national parks to dispossess land while promoting natural resource management as a viable economic development opportunity. It has been well documented in the conservation literature that protected areas are often a source of conflict between social actors by allowing

external agents to transform landscapes that restrict access for local populations (Neumann 1998; Zerner 2000; Adams 2001; King 2007). Making these projects even larger and crossing national boundaries does not change this and has the potential to exacerbate, rather than reduce, conflicts between various stakeholders. As has been discussed, the Kruger National Park was established through the forced resettlement of local populations by colonial and apartheid governments. It is therefore ironic, to say the least, that it is serving as the linchpin to an international Peace Park that will involve the resettlement of human populations currently living in Mozambique.

Similarly, in the U.S.–Mexico borderlands, the acquisition of private lands by NGOs and corporations for the creation of reserves can raise concerns about access, the cost of land, and the livelihoods of local residents, particularly in the rural regions of Mexico. Downplaying the significance of political borders in the promotion of conservation of biological diversity, therefore, obscures a complicated history of how wildlife protection has often come at the expense of the needs of human populations. Our concern is that the acceptance of transboundary conservation as an exercise in peace-building allows already powerful actors to further advance international conservation agendas while ignoring the lessons learned from national park planning.

A third theme that emerges from the two cases is the confirmation of recent assessments of the increasing power of external foundations and NGOs in shaping social and ecological policies in the developing world. What stands out from the two cases, however, is that the strategies employed by non-state agencies differ depending upon the particular context. In the case of jaguar conservation, NGOs find themselves empowered by growing global civil society movements, and with access to significant amounts of capital. Now, rather than lobbying government agencies and dealing with public participation, NGOs are bypassing this process and purchasing the land directly. In contrast to the outright purchase of critical habitat, the PPF has shown remarkable acuity in moving Southern African states towards expanded conservation strategies. The influence of these actors demonstrates how environmental landscapes are constructed and managed by external agents, many of whom are non-state institutions. While national parks have resulted in the restriction of resident populations, there is at least the remedy of petitioning the state for compensation or redress. Conservation NGOs do not have the same expectation to be representative of the national population and can thus execute conservation and development priorities that serve their particular niche interests. This raises concerns as to how local populations will be represented within an expanding conservation agenda that privileges non-state actors in shaping conservation policies in the developing world.

A final theme from the cases is the demonstration of how wildlife conservation remains closely linked with the spread of economic neoliberalism in the developing world. As the efforts to protect the jaguar demonstrate, inroads may come in the form of the potential economic valuation of this endangered wildlife species. Their very rarity may be their saving grace. Intact natural landscapes attract not only tourists to a region but also new residents and businesses that pump dollars into local economies. As Tom Kerasote (2007) notes, "it isn't just plentiful sunshine that has made the Southwest one of the fastest-growing regions in the nation, it's also the region's diverse natural attractions, one of which is wildlife." In Mexico, the proposed ecotourism ventures reveal new economic possibilities linked to the jaguar. Similarly, transboundary conservation in Southern Africa has won support for its ability to seemingly create new opportunities for the private sector while expanding the processes of regional economic integration (Wolmer 2003). The role of the U.S. Agency for International Development (USAID) and SADC in promoting TCAs is emblematic of a trend to link wildlife conservation with neoliberal economic development within the region (Schroeder 1999). As Wolmer (2003, p. 265) suggests, the aggressive marketing of TCAs as a vehicle for economic development assists in their sitting "comfortably with this integrationist agenda for cross-border collaboration, and its potential for providing widespread tourism venture investment opportunities enables it to be portrayed as an 'engine to propel economic development.'" In the case of the GLTP, the downplaying of national borders, coupled with the reification of transboundary conservation as an economic opportunity, seem to mask the true motivation for the project: expanding the aggregate size of the area to provide migratory space for elephants. If this truly is the purpose of the project, it challenges its economic justifications while raising questions as to the potential

of transboundary conservation to contribute to secured land tenure or economic opportunities for local populations.

**Acknowledgements** Research completed by the first author in South Africa was generously supported by the Institute for the study of World Politics, the Association of American Geographers, and the University of Texas Special Research Grant. The second author received research support from the Social Sciences Research Council, the University of Texas College of Liberal Arts U.S.-Mexico Borderlands Research Award, and the Robert E. Veselka Endowed Fellowship. We would like to thank the editor and two anonymous reviewers for their helpful comments on earlier versions of this article.

## References

Adams, W. M. (2001). *Green development: Environment and sustainability in the Third World*. London: Routledge.

African Wildlife Federation. (2002). Great Limpopo Transfrontier Park will double land for wildlife-including Kruger's 10,000 elephants. Retrieved June 22, 2007, from http://www.awf.org/content/headline/detail/1163?print = true.

Ali, S. H. (Ed.). (2007). *Peace Parks: Conservation and conflict resolution*. Cambridge, MA: MIT Press.

Brown, D. E. (2000). Search for El Tigre. *Defenders, 75*(1). Retrieved June 30, 2007, from www.defenders.org/magazinenew/Spring2000/eltigre.pdf.

Brown, D. E., & Gonzalez, C. L. (2001). *Borderland jaguars*. Salt Lake City, UT: University of Utah Press.

Carruthers, J. (1995). *The Kruger National Park: A social and political history*. Pietermaritzburg: University of Natal Press.

Chapin, M. (2004). A challenge to conservationists. *World Watch,* (November/December), pp. 17–31.

Childs, J. L. (1998). *Tracking the felids of the borderlands*. El Paso, TX: Printing Corner Press.

Duffy, R. (1997). The environmental challenge to the nation-state: Superparks and national parks policy in Zimbabwe. *Journal of Southern African Studies, 23*(3), 441–451. doi:10.1080/03057079708708549.

Ellis, S. (1994). Of elephants and men: Politics and nature conservation in Southern Africa. *Journal of Southern African Studies, 20*(1), 53–69. doi:10.1080/03057079408708386.

Fall, J. J. (1999). Transboundary biosphere reserves: A new framework for cooperation. *Environmental Conservation, 26*(4), 252–255. doi:10.1017/S0376892999000363.

Glenn, W. (1996). *Eyes of fire: Encounter with a borderlands jaguar*. El Paso, TX: Printing Corner Press.

Godwin, P. (2001). Without borders. *National Geographic*, September.

Graham, W. (2001). Birth of long-awaited Peace Park begins. *Pretoria News*, September 26

Grigione, M. M., & Mrykalo, R. (2004). Effects of artificial night lighting on endangered ocelots (*Leopardus paradalis*) and nocturnal prey along the United States–Mexico border: A literature review and hypotheses of potential impacts. *Urban Ecosystems, 7*(1), 65–77. doi:10.1023/B:UECO.0000020173.70355.ab.

Herring, H. (2002). How to make your own Yellowstone, Mexican style: A corporate behemoth races to restore a Coahuilan gem. *High Country News,* November 11.

Honey, M. (1999). *Ecotourism and sustainable development: Who owns paradise?*. Island Press: Washington DC.

IUCN (World Conservation Union) and WCMC (World Conservation Monitoring Centre). (1998). *1997 United Nations list of protected areas*. IUCN Publications.

IUCN (World Conservation Union) and WCMC (World Conservation Monitoring Centre). (2006). World Commission on Protected Areas: World Database on Protected Areas, Updated March 1. Retrieved June 30, 2007 from http://www.unep-wcmc.org/wdpa.

Kerasote, T. (2007). Borders without fences. *The New York Times*, February 24.

King, B. (2007). Conservation and community in the new South Africa: A case study of the Mahushe Shongwe Game Reserve. *Geoforum, 38*, 207–219. doi:10.1016/j.geoforum.2006.08.001.

Kruger Park Times. (2006). Heads of state put Giriyondo on the map, August 23.

Magome, H., & Murombedzi, J. (2003). Sharing South African national parks: Community land and conservation in a democratic South Africa. In W. M. Adams & M. Mulligan (Eds.), *Decolonizing nature: Strategies for conservation in a post-colonial era* (pp. 108–134). London: Earthscan.

Maker, J. (2001). Miracle in Africa. *Sunday Times,* (September), p. 30.

McCain, E. B., & Childs, J. L. (2008). Evidence of resident jaguars (Panthera onca) in the Southwestern United States and the implications for conservation. *Journal of Mammalogy, 89*(1), 1–10. doi:10.1644/07-MAMM-F-268.1.

Miller, C. (2007). Interview with author. May 3, Douglas Arizona. Notes on file with author.

Neumann, R. P. (1998). *Imposing wilderness: Struggles over livelihood and nature preservation in Africa*. Berkeley: University of California Press.

Rabinowitz, A. R. (1999). The present status of jaguars (*Panthera onca*) in the southwestern United States. *The Southwestern Naturalist, 44*, 96–100.

Ramutsindela, M. (2004). Globalisation and nature conservation strategies in 21st-Century Southern Africa. *Tijdschrift voor Economische en Sociale Geografie, 95*(1), 61–72. doi:10.1111/j.0040-747X.2004.00293.x.

Ramutsindela, M. (2007). *Transfrontier conservation in Africa: At the confluence of capital, politics and nature*. Cambridge: CAB International.

Rosas-Rosas, O. C. (2006). Ecological status and conservation of jaguars in northeastern Sonora, Mexico. Ph.D. Dissertation, New Mexico State University, Las Cruces.

Sanderson, E. W., Redford, K. H., Chetkiewicz, C.-L. B., Medellin, R. A., Rabinowitz, A. R., Robinson, J. G., et al. (2002). Planning to save a species: The jaguar as a model. *Conservation Biology, 16*(1), 58–72. doi:10.1046/j.1523-1739.2002.00352.x.

Schroeder, R. A. (1999). Geographies of environmental intervention in Africa. *Progress in Human Geography, 23*(3), 359–378.

Secure Fence Act. (2006). Public Law 109–367. October 26, 2006, Secure Fence Act, 8.U.S·C.1103. Retrieved May 1, 2008, from http://frwebgate.access.gpo.gov/cgi-bin/getdoc.cgi?dbname = 109_cong_bills&docid = f:h6061enr.txt.pdf.

Seymour, K. L. (1989). Panthera onca. *Mammalian Species, 340*, 1–9. doi:10.2307/3504096.

Sifford, B., & Chester, C. (2007). Bridging conservation across *La Frontera*: An unfinished agenda for Peace Parks along the U.S.–Mexico Divide. In S. H. Ali (Ed.), *Peace Parks: Conservation and conflict resolution* (pp. 205–226). Cambridge, MA: MIT Press.

Soule, M. (1980). Thresholds for survival: Maintaining fitness and evolutionary potential. In M. Soule (Ed.), *Conservation biology* (pp. 151–179). Sunderland, MA: Sinauer Associated, Inc.

Spenceley, A. (2006). Tourism in the Great Limpopo Transfrontier Park. *Development Southern Africa, 23*(5), 649–667. doi:10.1080/03768350601021897.

Terborgh, J. (1999). *Requiem for nature*. Washington, DC: Island Press/Shearwater Books.

Travers, R. (2001). World's first trunk trek. *Lowvelder*. October 9.

UNESCO. (1996). *Biosphere reserves, the Seville strategy and the statutory framework of the world network*. Man and the Biosphere Programme, UNESCO, Paris, France: 18 pp.

U.S. Census. (2006). Press release: Louisiana loses population; Arizona Edges Nevada as fastest-growing state. Retrieved May 1, 2008, from http://www.census.gov/Press-Release/www/releases/archives/population/007910.html.

U.S. Fish and Wildlife Service, Southwest Region (2006). News release: Jaguar critical habitat deemed not prudent. Retrieved May 15, 2008, from www.fws.gov/southwest/es/Arizona/Documents/SpeciesDocs/Jaguar/NR_JaguarCH.pdf.

van der Linde, H., Oglethorpe, J., Sandwith, T., Snelson, D., & Tessema, Y. (2001). *Beyond boundaries: Transboundary natural resources management in Sub-Saharan Africa*. Washington, DC: Biodiversity Support Programme.

Westing, A. H. (1998). Establishment and the management of transfrontier reserves for conflict prevention and confidence building. *Environmental Conservation, 25*(2), 91–94. doi:10.1017/S0376892998000137.

Wolmer, W. (2003). Transboundary conservation: The politics of ecological integrity in the Great Limpopo Transfrontier Park. *Journal of Southern African Studies, 29*(1), 261–278. doi:10.1080/0305707032000060449.

World Bank. (2004). *Transfrontier conservation areas pilot and institutional strengthening project, Project P001759*. Maputo: World Bank.

Zbicz, D. C. (1999). The 'nature' of transboundary cooperation. *Environment, 41*(3), 15–17.

Zerner, C. (Ed.). (2000). *People, plants, and justice: The politics of nature conservation*. New York: Columbia University Press.

Zimmerer, K. S. (2006). Cultural ecology: At the interface with political ecology—the new geographies of environmental conservation and globalization. *Progress in Human Geography, 30*(1), 63–78. doi:10.1191/0309132506ph591pr.