

Place-based Environmental Governance in the Waterton Biosphere Reserve, Canada: The Role of a Large Private Land Trust Project

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Introduction

THERE IS INCREASING ACCEPTANCE THAT THE LONG-TERM SUSTAINABILITY AND RESILIENCE of complex social-ecological systems requires management strategies that transcend the boundaries of state-managed protected areas (Knight 1999; Brown and Mitchell 2000; Berkes, Kofinas, and Chapin 2009). In western North America for example, private landscapes surrounding public protected areas not only buffer the effects of human activity, but tend to be more productive and lower-elevation, and can provide essential functional connectivity (Rissman et al. 2007). Land trusts have emerged as a dominant institution for formalizing the protection of biodiversity on private land. Two primary instruments have been employed by land trusts for private land conservation: conservation easements and full ownership of land (Hilts and Mitchell 1993; Meiners and Parker 2004). Conservation easements are legal contracts that prevent current and future landowners from engaging in certain activities on their land and/or compel the landowner to maintain certain attributes of the land (Anderson and Weinhold 2008). They avoid the costs of full-fee acquisition and allow compatible land uses to continue. Conservation easements can be effective tools for maintaining the quality of place and can avoid the bitter, divisive battles that characterize some more top-down legislative or regulatory approaches (Korngold 2009).

Conservation easements, the purchase of land by land trusts, and other conservation management strategies outside the realm of state-managed protected areas increase the number of “actors” involved in protected area management. New forms of environmental governance are required to effectively address the coordinated management of public and private lands to achieve societal goals. This evolution of environmental governance is part of a global phenomenon that has been characterized as a shift away from “government” to “governance” and reflects a much greater role for non-state actors (Plummer and Armitage 2007; Pahl-Wostl, Gupta, and Petry 2008). Best-practice principles for the establishment of the new governance arrangements include: legitimacy, transparency, accountability, inclusive-

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ness, fairness, integration, capability, and adaptability (Lockwood et al. 2010). These approaches tend to expand the goals of conventional conservation to include the cultural landscapes and livelihoods of people who live near national parks and equivalent reserves (Graham, Amos, and Plumpre 2003).

“Place-based governance,” an approach that engages civil society and other actors in local decision-making processes, has been identified as essential in the quest for sustainable communities (Pollock 2004; Lerner 2006; Edge and McAllister 2009). Edge and McAllister (2009, 279) defined place-based governance as “one that seeks to utilise local or regional place-based identities to motivate and engage civil society, government and other organisations in decision-making processes that foster social capital and institutional learning, and as one that promotes a local sense of place and community development, without being constrained by politically delineated boundaries.” The concept “combines ecological and political interpretations of ‘space’ with social and cultural interpretations of ‘place’” (Pollock 2004, 28). In the case of protected areas and their greater regions, protected area managers and land trust organizations interact with local governments, landowners, and other regional actors in an attempt to transcend politically delineated boundaries.

Biosphere reserves have been cited as mechanisms that can achieve interjurisdictional cooperation and facilitate place-based governance in protected area regions (Edge and McAllister 2009). Biosphere reserves emerged in the 1970s as part of the implementation of the United Nations Educational, Scientific and Cultural Organization’s (UNESCO’s) Man and the Biosphere Program. They have three major functions: (1) conservation of biodiversity, (2) sustainable development, and (3) support for logistics (which is labeled “capacity-building” in Canada) (Batisse 1993). In theory, each biosphere reserve contains a “core area” that is a designated protected area (often a national park); a “buffer zone” around the core area; and an area of use that may include industrial, commercial, or residential use. Biosphere reserves are also initiated out of a shared sense of place, which adds to the potential for strong place-based governance in these regions.

The emerging role of private land conservation initiatives provides increased impetus to examine the management models proffered by biosphere reserves within the context of place-based environmental governance. This paper explores and derives lessons from a dynamic example of place-based governance that is evolving in the environs of Waterton Lakes National Park and the Waterton Biosphere Reserve of southwestern Alberta, Canada.

Methods

Study area. The Waterton Biosphere Reserve, designated in 1979, is located in the southwestern corner of Alberta, Canada. The reserve is part of a larger regional ecosystem which is generally referred to as the Crown of the Continent Ecosystem (Figure 1). The biosphere reserve is made up of Waterton Lakes National Park and an area dominated by ranch lands to the north and east of the park that has been designated as the reserve’s “zone of cooperation.” Included within this is Nature Conservancy of Canada’s (NCC’s) Waterton Park Front Project (WFPF), one of the largest private conservation initiatives in the history of Canada, an area of about 150 sq km of which approximately 80% or 113 sq km is covered by conservation easements or direct purchases (Figure 2). Both Waterton Biosphere Reserve and the

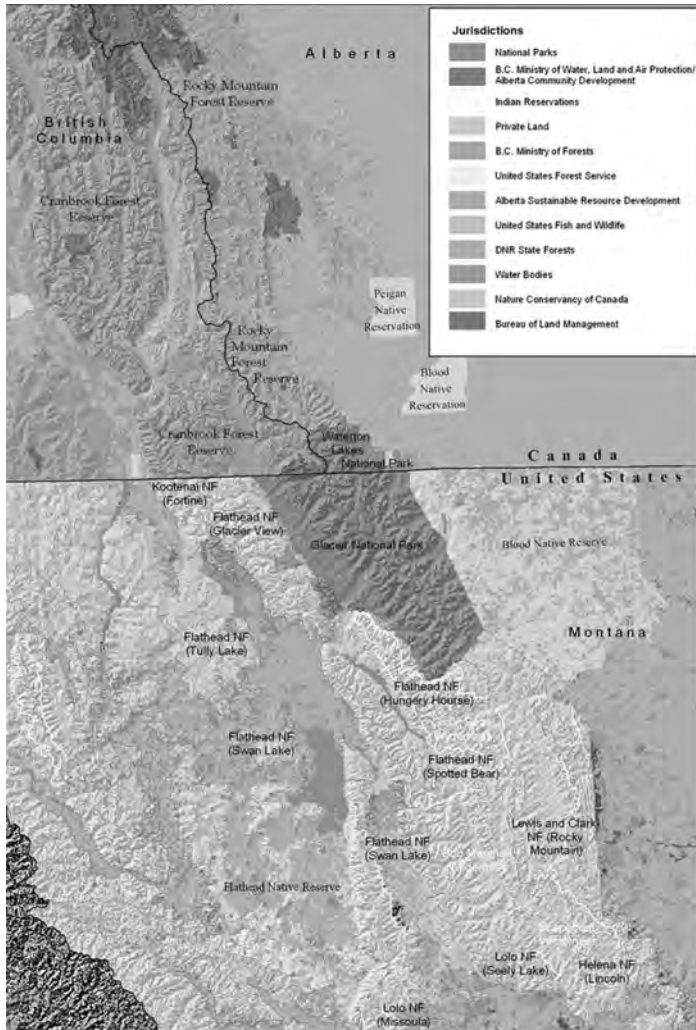


Figure 1. Crown of the Continent Ecosystem. Courtesy of Miistakis Institute for the Rockies.

WPFP are located within the municipal district of Pincher Creek and the county of Cardston.

Waterton Lakes National Park is representative of the Rocky Mountains natural region and includes representation from four “compressed” ecoregions: montane, foothills parkland, sub-alpine, and alpine (Parks Canada 1997). The sudden transformation from flat prairie to the Rocky Mountains inspired the park’s slogan: “where the mountains meet the prairies.” The national park has a high level of biodiversity and supports over 1,000 species of vascular plants, 265 of birds, 62 of mammals, 20 of fish, 10 of reptiles and amphibians, and thousands of insects and invertebrates (Parks Canada 2010). The park adjoins Glacier

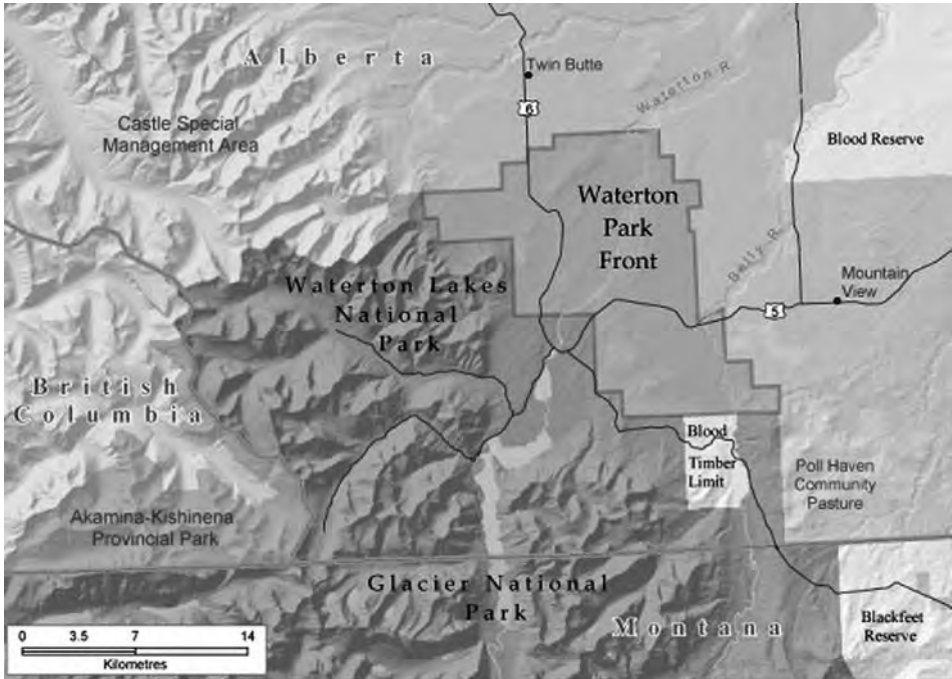


Figure 2. Location of the Waterton Park Front Project. Courtesy of Nature Conservancy of Canada.

National Park in Montana, USA, to the south, and together they constitute the world’s first formally designated international peace park.

The private lands to the north and east of the park (i.e., the biosphere reserve’s “zone of cooperation” and the location of the WPPF) and are mainly used for ranching, oil and gas exploration and development, and recreation. These ranchlands are critical to the ecological integrity of Waterton Lakes National Park, particularly due to wide-ranging mammals such as grizzly bears (*Ursus arctos*), wolves (*Canis lupus*) and elk (*Cervus elaphus*) that move back and forth from the park into the ranchlands (Parks Canada 2010).

As noted above, Waterton Biosphere Reserve was designated in 1979 under the Man and the Biosphere Program of UNESCO. The original nomination was driven by an application by Parks Canada during an era of long-term strategic planning and thinking, and conflicts between the park and local ranchers (Pollock and Pankratz 2008). In 1981, a biosphere reserve management committee was formed; the early activities of the committee were purposely non-controversial. In the late 1980s, a technical committee was set up which included researchers from various government agencies. The technical committee initiated its own scientific studies on the movement of elk and on cattle–elk interactions. During this period, the group tried to maintain a low profile due to the perception by some that the United Nations wanted to control the activities of landowners on their land. By 1990, funding for the biosphere reserve decreased substantially and waning interest and resources led to the abandonment of the technical committee (Dolan and Frith 2003).

Between 1990 and 2009, the Waterton Biosphere Reserve management committee continued to exist as a small group of volunteers, with some 5–7 people taking the main initiatives. These individuals helped to link biosphere reserve concerns to other informal networks of people or organizations devoted to particular conservation or resource issues (Pollock and Pankratz 2008). Dolan and Frith (2003) argued that although there was a decrease in the activity during the 1990s and early 2000s, the concept of the biosphere reserve continued in the region through other collaborative arrangements, such as the Crown Managers Partnership and the Waterton–Glacier International Peace Park. More recently, in 2009, the federal government provided a significant increase in funding and the Waterton Biosphere Reserve Association has become revitalized. The group was formally incorporated as a society in October 2009 and has formed an active board of directors. They have quickly become engaged in regional projects of concern, including management to reduce the negative interactions between ranchers and large carnivores.

Research questions. The goal of this research was to explore the role of a large private land trust project within place-based environmental governance. In order to accomplish this goal, the following research questions guided our investigation of the WFPF case study:

- How has NCC interacted with regional actors and processes/programs/structures within Waterton Biosphere Reserve?
- How did regional actors perceive the WFPF when it first started? How do regional actors perceive it now?
- How has the WFPF affected or influenced regional actors?
- What have been the implications of implementing a large-scale land trust project within close proximity to a government-managed protected area?
- How has the WFPF contributed to the sustainability goals of Waterton Biosphere Reserve?

Data collection. Data to construct the case study were collected through a review of relevant literature, policies, reports, and historical data, and by means of in-depth, semi-structured interviews. Twelve key informants were interviewed for the study, including NCC staff, Parks Canada staff, ranchers directly involved in the WFPF, ranchers not involved in the WFPF, Waterton Biosphere Reserve Committee representatives, a representative from the W. Garfield Weston Foundation (the primary project funder), and other regional actors such as municipal representatives. The interviews were intensive and semi-structured (Fontana and Frey 1994) and ranged from 25 minutes to 1.5 hours in length. An interview schedule was used to ensure that key themes were addressed, but the format was somewhat flexible and guided by the participant. Interviews were recorded on a commercial digital voice recorder with the consent of the participants and transcribed. The transcripts were analyzed for content using the software program NVivo 7.

Results and discussion

The results of our investigation are presented next by tracing the initiation and evolution of the WFPF and the interaction of NCC with the local community. We then examine the inter-

action between the WFPF and both Waterton Lakes National Park and Waterton Biosphere Reserve.

Initiation and development of the WFPF. The initiation and development of the WFPF arose out of several land-use challenges in the region that became apparent in the mid-1990s, notably the effects of increased demand for recreational “acreage” properties (rural residential development), challenges in the ranching economy (failure of the cattle market due to an outbreak of bovine spongiform encephalopathy), and a growing oil and gas industry. The increased demand for recreational properties is perceived by many in the region to have contributed to rising real estate prices, a declining ability of ranchers to buy property, and the increasing difficulty in pursuing ranching as a viable way to make a living (McCleave 2008). During this time a small group of conservation-minded ranchers who were concerned about the rapid pace of development in the region formed the Southern Alberta Land Trust, and several of the group’s founding members placed voluntary conservation easements on their properties. As one participant explained, they wanted to set an example to other ranchers, but voluntary easements did not prove to be a popular idea.

Within this regional context, in 1997 a parcel of land bordering Waterton Lakes National Park within the municipal district of Pincher Creek was put on the market. The land included significant native grasslands and a small lake that provided breeding habitat for the threatened trumpeter swan (*Cygnus buccinator*). NCC, a private, not-for-profit conservation organization, recognized the critical value of the land, but did not have the funds available for acquisition. The W. Garfield Weston Foundation, a private Canadian family foundation, was, at the same time, interested in exploring opportunities for private land conservation initiatives with NCC. A field trip to the Waterton region by members of the Weston Foundation resulted in a deal to purchase the property and, more importantly, a desire on the part of both parties to discuss a larger regional private land conservation project. Discussions eventually led to the foundation providing over Can\$40 million for the purchase of lands and conservation easements and the funding of stewardship activities. This represents one of the most significant private conservation gifts in Canadian history.

Subsequently, in 2000, a proposal for rezoning to allow a housing subdivision in Cardston County on the border of Waterton Lakes National Park resulted in heightened concern for the area. NCC contacted the landowner about negotiating a purchase, but mutually acceptable terms for the sale could not be reached. Although the rezoning application was eventually approved and the housing subdivision built, the events galvanized public interest in the area and provided the foundation for regional private land conservation.

The period between 1997 and 2004 can be characterized as the acquisition phase of the WFPF. The increasing pressure for recreational subdivision and the economic pressures faced by the ranching community created a need for rapid action if the high-quality, large ranchlands were to remain intact. The social circumstances of some families were also significant; for example, there were children of ranchers who did not want to continue ranching, multiple landowners who were having difficulty in “sharing” the ranches, and family breakups. NCC focused its activity on purchasing conservation easements, but also had to engage in fee-simple purchases. The latter were very costly, but necessary if the project were to be successful. Due to limited staff and resources, and the urgency with which the work was

being completed during this period, NCC operated largely opportunistically and focused the bulk of its efforts on acquisition rather than on the long-term management and stewardship of the properties. The strategic decision by NCC to focus on securing lands was not accompanied by a coordinated communication plan in the community. In a multi-generation, independent ranching community, this resulted in a great deal of rumor generation and suspicion.

In 2004, the Waterton Stewardship Endowment Fund was created and a local stewardship coordinator was hired for the project. This signified a shift in focus of the project from land and conservation easement acquisition to the stewardship and operational aspects of the project lands. Moreover, it demonstrated a commitment by NCC to actively engage in local environmental governance and build collaborative relationships with their direct partners, such as Parks Canada. Currently the WFPF is focused on undertaking such stewardship activities as weed control and range and riparian management, building strong relationships with lease and easement holders, and outreach to the public. There is an annual “Eat and Greet” event at a local community hall, organized by NCC, where local community members are invited to dinner and presentations by guest speakers about regional sustainability issues. In 2006, a local advisory committee comprising several ranchers who are involved in the project either as leaseholders or easement-holders was formed. In 2007, NCC opened a visitor center (the Weston Family Conservation Centre) as part of the WFPF, and built the Waterton Springs Interpretive Trail in a private campground (also part of the project lands) to provide a venue of communication and interpretation of the project and the value of the regional landscape in general.

NCC has undertaken the WFPF with a particular philosophy and style. NCC’s 2000 annual report, released during the acquisition phase of the project, noted that the agency “takes a quiet, business-like approach to land conservation” (Nature Conservancy of Canada 2000, i). This approach has been exemplified in the way that the WFPF has unfolded. For example, NCC staff have not specifically discussed the details of the project at the annual Eat and Greet events, but have encouraged people who are interested in talking about the project to approach them privately. In addition, NCC staff have taken a one-on-one approach in their negotiations for conservation easements and property purchases. Each deal was unique and no general formula was used to determine price.

Two significant events contributed to local peoples’ perceptions of NCC and the WFPF. Between 2004 and 2006, several oil and gas companies approached NCC about conducting seismic programs to assess the potential for petroleum extraction. As with most other private land in the province, NCC does not have the mineral rights to its properties. In the winter of 2005–2006, just prior to the development of detailed conditions for seismic operations on NCC lands in Alberta (for example, timing restrictions for wildlife and restrictions on certain activities), NCC permitted a non-speculative geophysical exploration project to occur on some WFPF properties. These are not binding guidelines but, according to an NCC staff person, “honest requirements for anybody that’s doing any sort of industrial exploration on our land” (P1¹). The staff member noted that they are trying to work with the oil and gas industry rather than engaging in adversarial hearings through the provincial energy regulation authority. Some regional residents, who were engaged in “battles” with the oil and gas

industry's activities, did not support this approach and felt that NCC should not have allowed the oil and gas companies to have access to their properties.

Another significant event involved the acquisition and subsequent selling of a property outside of the boundaries of the WFPF by NCC. The property was sold with a negotiated conservation easement on the deed, but the new owner of the property started a bison ranching operation, and altered the design of perimeter fencing which created a barrier to regional wildlife movement. This, as well as one particular incident where bison escaped from the property, influenced some local peoples' perceptions of bison farming and of conservation easements. NCC is currently in legal discussion about whether the bounds of the conservation easement have been contravened.

Interactions with the local community. We asked participants about their general perceptions of the WFPF, the influence that the project has had on their lives, and the interactions that they have had with NCC. A variety of perceptions and opinions emerged that represented those living within and near the boundaries of the project.

During the acquisition phase of the project, there were many rumors circulating in the two rural municipalities, the county of Cardston and the municipal district of Pincher Creek, about the actions of NCC. The local community, composed primarily of ranching families, many of which had been on the landscape for two or more generations, had a proud independence and a suspicion of intervention from outsiders. Concerns of some community members who were not involved in the project, particularly residents of Cardston County,² included fears that a conservation organization would not allow cattle grazing to continue, beliefs that land values were being artificially inflated by the acquisition interests of NCC, worries that a significant tax base for local governments would be lost, and, suggestions that the project was actually a covert activity to increase the size of the national park.

I heard people say that the Conservancy was just a front for the government and they are just going to acquire all of this land and put it into the park. You know people just generally heard "conservation" and they had the impression that you wouldn't be able to have any cattle on it. (P2)

Some folks, particularly in Cardston County, were quite suspicious, calling it a "land grab." I think everybody's first perception was a little bit of suspicion about what it is and what their agenda is so probably I was right in there. (P3)

Some participants became aware of the project after the initial land purchases and conservation easements were made. These participants described feelings of shock and surprise at both the concept of private land conservation and the amount of money involved. According to a former NCC staff person, there was no education or publicity campaign about the project and the land purchases and conservation easements were arranged quietly and quickly. Several participants noted that they were initially confused about the project and its long-term implications. One local rancher explained that he tried to become informed about the project but was unsuccessful:

I kind of thought I knew why they were doing it but I really wanted to know a lot more about them and it seemed like whenever I asked someone in the Nature Conservancy, I always got the answer “Well every situation is unique and different.” (P4)

Some participants, particularly those living in the county of Cardston, are still very suspicious of the project. One participant stated that NCC was opportunistic, and took advantage of landowners in financial or family difficulty during the acquisition stage of the project. Another participant used less harsh language, saying that he agreed with the concept of private land conservation but not the way in which the WFPF has developed, with “tenant farmers” on the landscape. Other participants expressed that they are somewhat skeptical about the project, due to a lack of information about the project and its future implications. A few participants perceived that the project has had some indirect negative impacts on them by increasing property values and by limiting the tax base of the municipalities.

Other members of the local community noted that although they were somewhat skeptical of the project in the beginning, they are more supportive of it now, especially since NCC has started to increase its stewardship efforts and the conservation implications of the project have become apparent:

I would say it has been positive because I do think there was development pressure and had some of those lands not been purchased or easements been put on them then it would have been gone. So from that point of view I think it is a good thing. (P2)

I think now people are really getting used to the Nature Conservancy being there and seeing that they aren't the big bad wolf and stopping all development. They are being responsible land tenders and owners. (P5)

Two participants contrasted the current situation in terms of land use in the region with what they envision would have been the reality if the project had not gone ahead:

I think without it the area would have been toast. It'd be gone now. So I think probably, in my view, it's been very good. (P6)

But given the choice of having that land all owned by cottage and acreage owners or having it owned by the Conservancy and people still ranching on it I would definitely take the second. (P2)

Those ranchers who participated directly in the project, by selling land to NCC or negotiating a conservation easement on their properties, were generally very supportive of the project. Interactions between NCC staff and these ranchers occur through numerous means, including stewardship activities on the land, one-on-one formal and informal meetings, and the annual Eat and Greets. One rancher noted that she did not perceive any “pushiness” or “aggressiveness” in the manner in which the project proceeded and that staff were well aware

of the difficult circumstances many of the families were in. Several participants spoke about the positive financial impact the project has had on their families:

For some of the people there they didn't have the next generation interested [in ranching] so they were going to have to sell at some point. This was a good option for them. They knew that what they'd built, their legacy, would stay intact. Someone else would keep it in a good state, so it was a good option for them. (P1)

To us it was a benefit from the point of view that it was becoming hard to know how to handle that land because there was a number of us that owned it. So it was better really, we got our money out of it and the siblings that aren't around here are happy and we still have access to use it. So it was worthwhile. (P7)

In 2006, the Waterton Front Park Advisory Committee was created. This group comprises six ranchers/landowners who are direct partners in the WFPF. The group has met approximately twice per year to act as liaisons between NCC and the community on topics related to stewardship of the WFPF. According to one NCC staff person, the group is currently a forum “to bounce ideas off of . . . on things from really small to larger issues” (P1). In keeping with NCC's low-key approach to working in the region, the group has not been highly publicized; rather, NCC supports committee members in taking the lead on communicating with the community. To date, much of its focus has been on publishing a newsletter on stewardship issues. Committee members have also initiated the formation of a local watershed stewardship group.

The WFPF and Waterton Lakes National Park. We asked some participants about the interaction between Waterton Lakes National Park, a government-managed federal park, and the Waterton Park Front Project, a private conservation initiative managed by a non-governmental organization, as well as the implications of having a large-scale land trust project on the boundary of a national park. Overall, most of the participants we asked described a very good relationship between Parks Canada and NCC staff. One of the main reasons for protecting ranch lands and preventing subdivision within the WFPF area is the project's location bordering the national park and within the larger “Crown of the Continent” ecosystem. Since the inception of the WFPF, most Parks Canada staff have been very supportive of the project:

Well, my initial perception was that it was like a knight on the white horse running to save us. Because for years there were various development proposals made for outside the park that concerned us. (P5)

We were very pleased to have the ranching community as a private land use on our boundary simply because they were in the business of maintaining large tracts of relatively undeveloped, often native prairie with cattle. (P8)

Recognizing there are conflicts, there are—ten percent of the time there will be different views

on issues—but for the most part, 90 percent of the issues we have are very similar interests as the ranching community. (P8)

During the early days of the WFPF, some Parks Canada staff members assisted NCC staff in hosting the potential project donors in the Waterton region. The donors were taken on field trips in and around Waterton Lakes National Park and educated about the area's land use challenges and the benefits that private conservation would have on the park. These early field trips were perceived as key to educating the potential donor:

You don't have to say a lot when you ride across the Front Range in Waterton and you look at the deeded private ranch lands and the public lands and you see, "Well, it all fits. It all makes sense." You don't have to say a lot about the connections in terms of habitat and wildlife. (P8)

As the WFPF proceeded, Parks Canada staff deliberately stayed somewhat uninvolved in the development and operation of the project, aside from supporting it and communicating about boundary issues. Some participants noted that there were rumors circulating during the early days of the WFPF that Parks Canada was funding the project in order to expand that park boundaries in the future. As a result, park staff were very careful about any public statement about the project or any involvement in the project's business:

Well, I think initially we sort of tried to pull back. Because we wanted the Nature Conservancy to be able to stand on their own two feet, which they are obviously completely capable of doing. And we didn't want them to have to have a sort of feeling with the ranching community that they are kind of in Parks Canada's pocket or something. I think that Parks Canada really felt we needed to step back and let them do their job. (P5)

I think the concern with the Nature Conservancy was that they were there interested in supporting and sustaining the ranching community. If we were seen as just another attempt to expand the park, which it wasn't and isn't, then there was a concern from our point of view and the Nature Conservancy that we'd be painted in a light that was inappropriate, that wasn't real. And so I think we maintained a very low-key supportive role, supporting the Nature Conservancy and helping donors understand the importance of that landscape from our perspective. But also, hopefully, to some degree in terms of the impact we had on the ranching community as a national park. (P8)

During the early years of the WFPF, Parks Canada staff were not actively educated about the project and this may have led to the development of some misconceptions about the project on the part of staff, particularly with regard to NCC's approach in allowing seismic operations to proceed on their lands. McCleave (2008) noted that an NCC staff person expressed frustration with the level of communication occurring between Parks Canada NCC at the time and indicated that NCC was not being used to its full potential as a conduit between the park and adjacent land users.

Operationally, NCC staff and Parks Canada staff have interacted about boundary issues such as fencing, signage, fire, youth education programs, and weed management, among others. The project provides a “more focused” regional actor that the park can go to if necessary, although park staff regularly communicate with individual ranchers. The existence of the national park on the boundary on the WFPF has also had some implications for the project. For example, one NCC staff person noted that the past (and somewhat strained) relationship between some ranchers and Parks Canada staff has influenced how some ranchers interacted with NCC staff, another large entity in the region. Also, the national park draws tourists to the region and this has had implications for some NCC properties due to tourists venturing onto the project lands from the park.

The WFPF and Waterton Biosphere Reserve. We also asked some participants about the interaction between the WFPF and the Waterton Biosphere Reserve. The questions were structured to learn about the role of a large private land trust project in meeting the goals of the biosphere reserve through private land conservation.

Overall, participants reported that the relationship between NCC and those involved in the Waterton Biosphere Reserve was friendly but somewhat distant until the biosphere reserve’s recent revitalization. The two groups interacted during the early stages of the WFPF, and Waterton Biosphere Reserve volunteers were generally supportive of the project. Members of the Waterton Biosphere Reserve Committee developed a video about the threats of subdivision in the region, which was then shown to potential donors to the project. They were also involved in the early stages of the project in hosting the potential donors. The Waterton Biosphere Reserve Committee has also contributed funding to NCC’s annual Eat and Greet events.

Some participants talked about the theoretical connections between the biosphere reserve concept and large-scale private land conservation. The main connection perceived by participants was that since the “buffer” of the Waterton Biosphere Reserve was loosely defined as an “area of cooperation,” the WFPF was the default “buffer” within the biosphere reserve. Many participants perceived that the WFPF falls within the biosphere reserve’s “area of cooperation” and is complimentary to the concept and aligned to the mandate of the biosphere reserve:

Well, it’s totally aligned to their mandate. I think the idea of Waterton being the core of the Biosphere Reserve, and then having the surrounding lands, the Nature Conservancy trying to preserve that way of life totally fits with the Biosphere Reserve. (P5)

Well, the Biosphere in theory is almost what the Nature Conservancy accomplished. The Biosphere concept was that you needed a zone of cooperation around the park but the Biosphere didn’t have any money and people were pretty reluctant around the park to have any limitations put on their land. So the Biosphere was a theoretical concept that the Nature Conservancy made practical, I guess. (P7)

The biosphere reserve’s recent periodic review states that “without formal delineation, Waterton Biosphere Reserve has essentially one of the most effective buffers of any biosphere

reserve in North America” (Pollock and Pankratz 2008, 12). There have recently been discussions between members of the Canadian Biosphere Reserves Association and the Waterton Biosphere Reserve Association about contacting UNESCO and formally designating the WFPF land as part of the biosphere reserve’s buffer zone. The 2008 review notes that some committee members are hesitant to formally establish boundaries since the informal “zone of cooperation” has been positive and highly collaborative (Pollock and Pankratz 2008).

Several participants were careful to state that it has been the ranching industry that has shaped the landscape over time, developed sustainably (one of the major functions of biosphere reserves), and provided a buffer to the national park within the biosphere reserve area. However, if the rate of development and subdivision had continued along the same path as it was on prior to the WFPF, as many participants speculated it would have, then it can be said that the project has had a significant impact on the present and future ecological integrity of Waterton Lakes National Park and surrounding lands, and the sustainable development of the ranching industry within the project boundaries:

The Conservancy has bought land, they’ve bought a lot of easements on other land, and there are still a few holes in it, but it’s really saved our butts as far as subdivision is concerned. I have no doubt that the majority of the park boundary would be split up in subdivisions now. It would have happened in the last five years had it not been for them. (P6)

Since about the last eight years I think there probably would have been at least thirty percent more houses in that 30,000 acres than there are now if it hadn’t happened. And once a house and a road is built it’s forever gone. You know it is too late then. Roads may even be worse than houses, but so I think it has made a huge difference. (P4)

Besides contributing to the buffer of the Waterton Biosphere Reserve and the sustainable development of the ranching industry, the WFPF has also contributed to the two other functions of biosphere reserves, namely the conservation of biodiversity and support for logistics (or “capacity-building”). The project’s effort in invasive plant management was the most frequently cited by participants as a contribution to the region’s biodiversity. There is also ongoing work done in supporting sustainable riparian and range management. According to an NCC staff person, many of the positive stewardship attitude and action shifts that arise as a result of collaboration with the conservancy’s partners cannot be quantified. However, the unassuming, supportive approach has indeed been successful in that the ecological health of most monitored range and riparian sites on NCC-owned WFPF lands has improved or been maintained.

The project has also had tangible effects in the area of capacity-building, mostly in terms of NCC staff contributing their time and expertise to various regional boards and committees and by organizing educational programs within the biosphere reserve. NCC staff have been involved in the Old Man River Watershed Council, Pincher Creek Watershed Group, Cows and Fish (Alberta Riparian Habitat Management Society), Southwest Alberta Cooperative Weed Management Area, Waterton Natural History Association, and Waterton Biosphere Reserve Association. NCC staff have also made presentations about the WFPF at sev-

eral conferences and events such as Waterton-Glacier International Peace Park's yearly Science and History Day, the Waterton Wildflower Festival, and the 2007 Parks, Peace & Partnerships Conference.

Conclusions

Several lessons can be learned from the WFPF in relation to large-scale land trust projects and their role within place-based environmental governance and biosphere reserves.

First, the approach with which NCC went about the WFPF is noteworthy. The "quiet, business-like approach" NCC took was important in this case in order to minimize land price inflation and/or speculation from occurring. Moreover, this approach allowed for NCC to negotiate a variety of individually appropriate conservation easements as well as direct land purchases with a limited (although substantial) amount of financial resources. However, the project still did garner a considerable amount of attention in the local community, as would any other large-scale land trust project that developed so quickly (e.g., with a large donation of money). The value of real estate in the region did increase during and following the acquisition period and some residents did blame the WFPF despite there being other likely influences on prices. This approach to doing business also had some unintended consequences due to some local residents being uninformed and confused about the project. Fundamentally, large-scale land trust projects require a balance between a low-key approach and sufficient information dissemination and transparency. The WFPF clearly indicates the need for land trust organizations to commit to long-term stewardship activities following large-scale land acquisitions activities.

The WFPF is also an interesting case study of the interaction between a large-scale land trust project and a government-managed national park. In this case, although the land trust project has had (and will have in the future) a significant positive effect on the ecological integrity of the national park, park staff were careful not to talk about the project publicly in order to lessen the chance that other regional actors would perceive a government influence in private land conservation. Unfortunately, this hands-off approach did not allow some staff members to be adequately informed about the project. Other cases where private conservation is implemented on the boundaries of public protected areas would face a similar dynamic, and the proper education of staff on the nature and intent of the project and regular communication between park and land trust staff could help to avoid misunderstandings.

This case study shows how large-scale land trust projects can make significant contributions to biosphere reserves. Many of the lands that have remained intact as viable ranches in the WFPF may have been lost to subdivision or less ecologically benign land uses were it not for the implementation of the project. It not only protects the physical land base, but also maintains the local human history and long tradition of ranching. Besides making tangible contributions to biosphere reserves' buffer zones (or, in the case of the Waterton Biosphere Reserve, the "zone of cooperation"), private land conservation can contribute to the three functions of biosphere reserves (biological conservation, sustainable development, and logistics). In the case of the Waterton Biosphere Reserve, which is currently undergoing a revitalization with the recent formation of an active, volunteer board of directors, the WFPF area is emerging as a key component in an effective zone of cooperation. The group has quickly

engaged other regional actors in governance discussions on issues of most interest to private landowners and of great relevance to regional sustainability (e.g., invasive weed control and reduction of conflicts among livestock, large carnivores, and humans).

Finally, the story of the WPPF exemplifies how private land conservation can change the nature of communication and action within place-based environmental governance. Besides becoming another actor that government agencies and industry can communicate with about regional issues, land trust staff can organize public education events (such as, in this case, the annual Eat and Greet) and other mechanisms for implementing place-based environmental governance. Having the WPPF within an active biosphere reserve has provided the ranching community with a new means by which to collaborate and has stimulated discussions and action on place-based environmental governance. The current conditions appear right for the ongoing evolution of a governance framework that embraces the interdependencies between the public and private landscapes that constitute the region. Biosphere reserves provide an ideal environment in which these new arrangements can be incubated, developed, modeled, and shared with other areas.

Endnotes

1. Each participant has been assigned a unique code that appears in parentheses following his or her quote.
2. McCleave (2008) perceived key differences in the culture of residents of Pincher Creek and the county of Cardston. Participants labeled residents of the county of Cardston as more “individualistic” and “pro-development,” while residents of the municipal district of Pincher Creek were labeled as more “conservation-minded.”

References

- Anderson, K., and D. Weinhold. 2008. Valuing future development rights: The costs of conservation easements. *Ecological Economics* 68 (1/2): 437–446.
- Batisse, M. 1993. Biosphere reserves: An overview. *Nature and Resources* 29: 3–4.
- Berkes, F., G.P. Kofinas, and F.S. Chapin. 2009. Conservation, community, and livelihoods: Sustaining, renewing, and adapting cultural connections to the land. In *Principles of Ecosystem Stewardship: Resilience-based Natural Resource Management in a Changing World*. F.S. Chapin, G.P. Kofinas and C. Folke, eds. New York: Springer.
- Brown, J., and B. Mitchell. 2000. The stewardship approach and its relevance for protected landscapes. *The George Wright Forum* 17 (1): 70–79.
- Dolan, B, and L. Frith. 2003. The Waterton Biosphere Reserve: Fact or fiction? Paper read at Making Ecosystem Based Management Work: 5th International SAMPAA Conference, May, Victoria, BC.
- Edge, S., and M.L. McAllister. 2009. Place-based governance and sustainable communities: Lessons from Canadian biosphere reserves. *Journal of Environmental Planning and Management* 52 (3): 279–295.
- Fontana, A., and J. H. Frey. 1994. Interviewing: The art of science. In *Handbook of Qualitative Research*. N.K. Denzin and Y.S. Lincoln, eds. Thousand Oaks, CA: Sage.
- Graham, J., B. Amos, and T. Plumptre. 2003. *Governance Principles for Protected Areas in*

- the 21st Century*. Ottawa, ON: Institute on Governance and Parks Canada.
- Hilts, S., and P. Mitchell. 1993. Bucking the free market economy: Using land trusts for conservation and community-building. *Alternatives* 19 (3): 16–23.
- Knight, R.L. 1999. Private lands: The neglected geography. *Conservation Biology* 13: 223–224.
- Korngold, F. 2009. Private conservation easements. *Land Lines* 21 (4): 8–13.
- Lerner, S. 2006. *Governance for Sustainability: Dynamics of Collaborative Arrangements*. Working Paper no 3, Biosphere Sustainability Project. Waterloo, ON: University of Waterloo.
- Lockwood, M., J. Davidson, A. Curtis, E. Stratford, and R. Griffith. 2010. Governance principles for natural resource management. *Society and Natural Resources* 23 (20): 986–1001.
- McCleave, J.M. 2008. The regional integration of protected areas: A study of Canada's national parks. PhD Dissertation, Department of Geography, University of Waterloo, Waterloo, ON.
- Meiners, R.E., and D.P. Parker. 2004. Legal and economic issues in private land conservation. *Natural Resources Journal* 44 (2): 353–360.
- Nature Conservancy of Canada. 2000. *2000 Annual Report: Protecting Precious Places*. Toronto, ON: Nature Conservancy of Canada.
- Pahl-Wostl, C., J. Gupta, and D. Petry. 2008. Governance and the global water system: A theoretical exploration. *Global Governance* 14 (4): 419–435.
- Parks Canada. 1997. *National Parks System Plan*. Ottawa, ON: Parks Canada.
- . 2010. *Waterton Lakes National Park of Canada Management Plan 2010*. Ottawa, ON: Parks Canada Agency.
- Plummer, R., and D. Armitage. 2007. A resilience-based framework for evaluating adaptive co-management: Linking ecology, economics and society in a complex world. *Ecological Economics* 61 (1): 62.
- Pollock, R.M. 2004. Identifying principles for place-based governance in biosphere reserves. *Environments* 32 (3): 27–42.
- Pollock, R.M., and V. Pankratz. 2008. *Waterton Biosphere Reserve: Periodic Review Report 2009*. N.p.
- Rissman, A.R., L. Lozier, T. Comendant, P. Kareiva, J.M. Kiesecker, M.R. Shaw, and A.M. Merenlender. 2007. Conservation easements: Biodiversity protection and private use. *Conservation Biology* 21: 709–718.

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