

SHARED LANDSCAPE, DIVERGENT VISIONS?
TRANSBOUNDARY ENVIRONMENTAL MANAGEMENT IN THE
NORTHERN GREAT PLAINS

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By

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ABSTRACT

The 49th parallel border dividing the Great Plains region has been described since its delimitation as an ‘artificial’ construct, as no natural features distinguish the ‘Canadian’ and ‘American’ portions of the landscape. While the border subjects the landscape to different political, legal, philosophical, and sociocultural regimes on either side, the region’s contemporary and emerging environmental problems span jurisdictional boundaries. Their mitigation requires new forms of environmental management capable of transcending these borders. In this dissertation, I examine the prospects for implementing ecosystem-based approaches to environmental management in the Frenchman River-Bitter Creek (FRBC) subregion of the Saskatchewan-Montana borderland. First, I interrogate the extent to which residents perceive the FRBC region as a ‘borderland’. Then, I examine the range of implications of ecosystem-based management approaches for institutional arrangements, environmental governance, and traditional property regimes and livelihoods in the region.

The research methodology includes an extensive literature review; multiple site visits to the FRBC region; a series of semi-structured interviews with employees of government agencies and environmental nongovernmental organizations, and with local agricultural producers; the analysis of historical maps and of selected ecoregional planning documents; and attendance at public meetings in the FRBC region. The research results are presented in a series of four manuscripts. The first manuscript describes perceptions of the border and the borderland through time. The second manuscript examines changes to the border and the relationships across it instigated by the September 11, 2001 terrorist attacks and the 2003 BSE Crisis. The third manuscript examines the extent to which a ‘shared landscape’ transcends the border, and describes how the different regimes across the border create ‘divergent visions’ for landscape and species management. The fourth manuscript investigates the ways in which incorporating a broader range of actors and disciplines could reconceptualize environmental management as an inclusive processes that is cognizant of local history and values.

By examining the imbrications of the fields of environmental management, border studies, and political ecology, this research advocates adopting an historical approach to environmental geography research so that contemporary problems may be understood within their local contexts. It emphasizes the importance of including a range of stakeholders in environmental management processes. It identifies the difficulties inherent to adopting ecosystem-based approaches to management, and stresses the practical value of transboundary collaboration for goal setting so that the tenets of ecosystem-based management may be achieved under the existing jurisdictional frameworks in place. It provides significant insights for policy makers, in that it presents residents’ reflections upon their involvement in environmental management processes, and upon the impacts that recent changes to border and national security policies have had upon borderland residents. Moving forward, this research uncovers the need for continued investigations of the impacts of border security policies and legislation on borderland communities and species, for more study of the ability of state agencies to meaningfully incorporate local actors in environmental management, and for investigations of trinational environmental management efforts in the North American Grasslands.

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DEDICATION

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LIST OF ACRONYMS

AB	Alberta
BSE	Bovine Spongiform Encephalopathy
CAR	Census Agricultural Region
CBC	Canadian Broadcasting Corporation
CMLN	Crossing the Medicine Line Network
CPR	Canadian Pacific Railway
CRP	Conservation Reserve Program
CWD	Chronic Wasting Disease
DOI-BLM	Department of Interior – Bureau of Land Management
EBM	Ecosystem-Based Management
ENGO	Environmental Nongovernmental Organization
ESA	Endangered Species Act (United States)
EU	European Union
FBIC	Fort Belknap Indian Community
FPT	Fort Peck Tribes
FRBC	Frenchman River Bitter Creek
IPM	Integrated Pest Management
LEK	Local Ecological Knowledge
MT	Montana
MWCA	Montana Weed Control Association
ND	North Dakota
NE	Nebraska
NGO	Nongovernmental Organization
NMGTCI	Northern Mixed Grass Transboundary Conservation Initiative
NRM	Natural Resource Management
R-CALF	Ranchers-Cattlemen Action Legal Foundation
RM	Rural Municipality (Saskatchewan)
SD	South Dakota
SK	Saskatchewan
TNC	The Nature Conservancy (United States)
UN	United Nations
US(A)	United States (of America)
USDA-FSA	United States Department of Agriculture – Farm Service Agency
USFWS	United States Fish and Wildlife Service
USSR	Union of Soviet Socialist Republics
WAFWA	Western Association of Fish and Wildlife Agencies
WHTI	Western Hemisphere Travel Initiative
WMA	Weed Management Area
WMCAP	Wood Mountain Community Access Program

WWF
WY
9/11

World Wildlife Fund
Wyoming
September 11, 2001 (Terrorist Attacks on the United States)

CHAPTER 1

SHARED LANDSCAPE, DIVERGENT VISIONS? SETTING THE RESEARCH STAGE

1.1 INTRODUCTION

Grasslands represent one of the earth's major biomes, and have historically been considered among the world's most productive and diverse terrestrial ecosystems (Gauthier *et al.* 2003). In North America, the grasslands of the Great Plains region have been subject to five hundred years of European occupation, including intensive agricultural and settlement campaigns sponsored by the federal governments of both Canada and the United States in the nineteenth and early twentieth centuries (Dolan 1999; Morris 1999). Because of this occupation and use of the grasslands, "many Great Plains landscapes are now highly altered and the functional role of several key grassland species has been severely reduced or eliminated. As a result, much of the biological dynamism and resilience of the prairie ecosystem is missing" (Forrest *et al.* 2004: 4). Furthermore, the grasslands of the Northern Great Plains¹ are subject to competing visions for land and resource use and management by agricultural producers, environmentalists, recreationalists, and industry, specifically as the energy sector continues to

¹ There is no consensus on how to delimit the Great Plains region (see Rossum and Lavin 2000). Most authors concur that the Rocky Mountains represent the region's western boundary (Rossum and Lavin 2000). The eastern boundary is generally understood to be the 100th meridian of longitude (Libecap and Hansen 2002). Most mappings of the Great Plains extend the region's northern boundary into the Canadian provinces of Alberta and Saskatchewan, and sometimes Manitoba; and many place the region's southern boundary in Mexico (see Rossum and Lavin 2000: 546). In this dissertation, I use the terms 'Northern Great Plains' and 'Plains-Prairies Region' interchangeably to refer to that portion of the larger Great Plains region contained in the Canadian provinces of Alberta and Saskatchewan and the American States of Montana, North Dakota, South Dakota, Wyoming and Nebraska, corresponding to the conceptualization of the Northern Great Plains region recognized by the World Wildlife Fund (US) (Forrest *et al.* 2004). By convention, the term 'Northern Great Plains' appears to be favoured in the United States, and the term 'Plains-Prairies Region' is used more commonly in Canada.

develop the area's oil, coal, and natural gas resources and its wind power potential. Framing these contests are larger debates pitting the local knowledge and multigenerational ties to the landscape held by local residents and agricultural producers against environmental management and decision-making by external entities such as government agencies, environmental nongovernmental organizations (ENGOS), industrial interests, and absentee landowners. These debates are exacerbated by the depopulation of regional rural communities and the associated loss of traditional livelihoods and knowledge (e.g. Widdis 2006; Waiser 2005). Consequently, ecological connectivity, function, and resiliency in the grasslands have been reduced or eliminated (Forrest *et al.* 2004; Dolan 1999); and the local ecological knowledge of agricultural producers, built up over generations of living and working on the land, may be considered equally threatened.

Management of the grassland ecosystem of the Northern Great Plains is additionally complicated by the fact that it is bisected by the 49th parallel boundary dividing Canada from the United States. As such, the ecosystem is divided into discrete 'Canadian' and 'American' parcels of land, each subject to its own political, legal, philosophical, social and cultural regimes. These differences are counterintuitive to the ecological, aesthetic, and socioeconomic uniformity of the landscape. It has been widely observed that "North America runs more naturally north and south than east and west" (Widdis 1997: 104; McKinsey and Konrad 1989: iii; see also Morris 1999). In fact, Morris (1999: 472) asserted of the Northern Plains, "if ever an arbitrary political boundary artificially divided a natural region, surely this would be it". In this region, the 49th parallel is an anthropogenic line delimited by surveyors and not by any natural features

distinguishing one landscape from another (LaDow 2001; McKinsey and Konrad 1989). In socioeconomic terms, the sparse, rural population and economic reliance on agriculture and resource extraction on both sides of the border support the 49th parallel's label of an arbitrary line (Widdis 1997; McKinsey and Konrad 1989). Cross-border similarities in the Northern Great Plains provide conducive conditions along the length of Canada-US border for a 'borderland', or "...a region jointly shared by two nations that houses people with common social characteristics in spite of the political boundary between them", that "...exist(s) when shared characteristics within the region set it apart from the country that contains it: residents share properties of the region, and this gives them more in common with each other than with members of their respective dominant cultures" (McKinsey and Konrad 1989: 4), to emerge.

However, although "...borders are socially constructed, they are nevertheless constructed" (Reed and Bruyneel 2010: 5). In this context, despite regional cross-border similarities, and the 49th parallel border's descriptors of 'imaginary', 'artificial' and 'ridiculous' (LaDow 2002; Morris 1999; Schwartz 1997; McKinsey and Konrad 1989; Stegner 1962), the international border creates an undeniable division of the Northern Great Plains landscape into discrete national entities subject to different political, regulatory, and landscape management regimes. As such, those living and working in the region are challenged to consider new ways of undertaking environmental management to deal with the emerging environmental issues and land use contests they face. Consistent with the theme of shared ecological and social characteristics across an anthropogenic border, it follows that environmental management based on ecosystem

approaches, such as ecosystem-based management and ecoregional planning, merits investigation.²

While there is no universal definition of an ‘ecosystem’, or of ‘ecosystem-based management’ (EBM), there is broad consensus on the elements of EBM. These include systems thinking; recognition of the complexity and dynamism of both social and ecological systems; more extensive consideration of different spatial and temporal scales; managing for ecological integrity, including conserving species and population diversity, dynamic processes and representative systems; using ecologically- and not politically-derived boundaries; using adaptive management to deal with uncertainty; and incorporating collaborative decision making (Mitchell 2002; Cortner and Moote 1999; Yaffee 1999; Endter-Wada *et al.* 1998; Fitzsimmons 1998, 1996; Grumbine 1997, 1994). EBM thus requires a shift from environmental management as based on *government* responsibility and control to providing the necessary conditions for a more inclusive *governance*, in which “power and authority are horizontally decentralized and devolved to broader members of society” (Harrington *et al.* 2008:200).

Ecosystem-based management, then, differs from the traditional conceptualization and practice of natural resource management, which focused on the manipulation, harvesting, and commodification of resources by humans, rather than on the intrinsic values and natural conditions of an ecosystem and the interrelationships among ecosystem components (Mitchell 2002; Cortner and Moote 1999). A key distinguishing factor between EBM and non-ecosystem

² Slocombe (1998a) differentiates “ecosystem management” from “ecosystem-*based* management” as the former is the domain of ecological science, operating at relatively small spatial scales; while the latter emphasizes that *activities* within an ecosystem can be managed, taken from an ecosystem, or integrative and transdisciplinary, perspective. This paper adopts the latter terminology, though both are interchangeable (Slocombe, 1998b).

approaches is that the former conceptualizes humans as a *part of*, not *apart from* or controlling, ecosystems (Mitchell 2002; Cortner and Moote 1999; Grumbine 1997, 1994). Ecoregional planning is a related concept, focused on landscape-scale management to achieve representation of habitat types on a global scale, that is frequently adopted by environmental nongovernmental organizations (ENGOS) in their biodiversity conservation efforts (Jepson and Whittaker 2002; Wikramanayake *et al.* 2002).

Ecosystem-based management is an approach that has increasingly received attention in the United States, Canada, and internationally (Lamont 2006). In the United States, federal interest in EBM escalated in the late 1980s, when controversies emerging from the conservation of species such as the grizzly bear and the spotted owl highlighted the shortcomings of traditional, single-species management approaches (Malone 2000; Szaro *et al.* 1998). As a result, the need to both conserve relatively large tracts of habitat to support species conservation and to consider socioeconomic, institutional arrangements, and the interests of multiple stakeholders in environmental decision-making became apparent (Malone 2000; Szaro *et al.* 1998). In 1992, the United States Forest Service changed its resource-based management focus to an ecosystem-based management approach for national forests and grasslands, becoming the first federal agency to adopt such an approach (Thomas 1996; Grumbine 1994). By 1995, EBM had become policy throughout the US federal government (Malone 2000; Szaro *et al.* 1998). Within the Canadian federal government, agencies have also adopted ecosystem-based approaches to environmental management; however, it has been observed that Canada has fewer grassroots

initiatives promoting, and less formal institutional support for, EBM than does the United States (Quinn and Theberge 2004).

However, despite policy commitments to ecosystem-based management at the federal and state/provincial levels, criticisms of ecosystem-based approaches remain. These are focused on its conceptual murkiness and its lack of a universally-accepted definition; the related difficulties with its implementation; and its incongruencies with traditionally accepted styles of resource and environmental management (Bruyneel 2009; Cortner and Moote 1999; Bryant and Wilson 1998; Endter-Wada *et al.* 1998; Fitzsimmons 1998, 1996; Slocombe 1998a; Stanley 1995). Cortner and Moote (1999) argued that the full-scale implementation of an ecosystem-based approach as the dominant environmental management standard in government would be unlikely in the near future, as it would require a paradigm change from traditional, sector- and extraction-based natural resource management. Many have concurred that such a change would require ‘seismic shifts’ in dominant worldviews and attitudes (Loughlin 2004; Cortner and Moote 1999; Gunderson and Holling 1995; Grumbine, 1994); and it has been cautioned that such shifts may never happen (Stanley 1995). Lee (1993: 208, *notes*) further observed that “...governments and their constituencies are unlikely to reorganize jurisdictions around ecosystem boundaries” in place of ensconced worldviews and management regimes that rely upon anthropogenic jurisdictional boundaries.

Transboundary situations offer particular challenges for governance and ecosystem-based management, as they subject a single ecosystem to multiple, and often divergent, institutional and administrative systems. It is widely recognized that contemporary environmental problems

are global in nature, readily transcending political borders and requiring concerted international co-operation for their mitigation (Moore 2008; Carter 2007; Castree 2004; Barrow 1999). Yet, the literature on transboundary environmental issues and co-operation focuses on ‘fugitive’ resources that actively move across boundaries, such as air and water resources, largely neglecting the threats to the fixed elements of the environment, such as landscapes.

Air pollution is recognized as a significant environmental problem that does not respect political or administrative boundaries (Schwartz 2000). With respect to water resource management, many discussions of Canada-US environmental co-operation focus on the International Joint Commission and the management of shared waters, specifically the Great Lakes (Hildebrand *et al.* 2002; Schwartz 2000; Sadler 1993). It follows that the Great Lakes are the locus of much literature pertaining to the implementation of ecosystem-based approaches to environmental management (Hildebrand *et al.* 2002; Jones and Taylor 1999; Hartig *et al.* 1998; Slocombe 1998b). Other co-operative management initiatives related to transboundary waters include the Gulf of Maine and Georgia Basin-Puget Sound (Alper 2004; Hildebrand *et al.* 2002). Water diversions and cross-border water export are discussed in the context of the Garrison Diversion and Rafferty Alameda projects (Sadler 1993), Devil’s Lake and the Great Lakes (Schwartz 2000). Finally, there is a growing body of literature on the transboundary governance of water resources (Reed and Bruyneel 2010; Norman and Bakker, 2009, 2004; Alper 2004).

While this body of work provides important insights on the progress in and obstacles to transboundary co-operation, the literature to date largely neglects to explicitly address questions pertaining to the planning and management of fixed land resources, such as landscapes, that are

subdivided by political borders. A notable exception here is scholarly research conducted on the topic of transboundary protected areas, such as the Crown of the Continent Ecosystem straddling the Alberta-Montana border in the Waterton-Glacier National Park area (Stefanick 2009; Pedynowski 2003; Slocombe 1998b, 1993) and the Great Limpopo Transfrontier Park that crosses the borders of South Africa, Mozambique, and Zimbabwe (Lunstrum 2008; Wolmer 2000). However, there is a dearth of research on transboundary landscapes that either lack formal protection, or that have incongruent levels of protection across the border(s) that divide them. This dissertation represents an effort to begin to fill this void, and to answer whether or not it is possible to increasingly harmonize Canadian and American laws, policies, and programs to achieve ecosystem-based management in the grasslands of the Northern Great Plains.

1.2 THE STUDY AREA

1.2.1 Institutional Context

This research is set in the transboundary grassland region of southwestern Saskatchewan and northern Montana. This borderland subregion is the locus of several cross-border initiatives for grasslands conservation. It is included within several ecoregional, and often transboundary, conservation planning documents and strategies produced by ENGOs working in the Northern Great Plains (e.g. Riley *et al.* 2007; Forrest *et al.* 2004; Smith Fargey 2004a; TNC 1999). Significantly, this subregion is the focus of several informal transboundary conservation initiatives, such as the Northern Mixed Grass Transboundary Conservation Initiative (NMGTCI) (Parks Canada 2009; Smith Fargey 2004a). The NMGTCI was an informal transboundary

working group composed of over 35 participants representing more than 17 partner agencies and organizations, including federal (Canada and the United States) and provincial/state (Alberta, Saskatchewan and Montana) government agencies, ENGOs (based in both Canada and the United States), and academia (Smith Fargey 2004b).³ Through a series of multi-partner and multi-jurisdictional planning workshops held in 2003-2004, the NMGTCI developed conservation site plans for six large transboundary landscapes in the Plains-Prairies borderland.⁴ One of these conservation site planning areas, the Frenchman River Bitter Creek (FRBC) Area, has become the focal area for the efforts of the NMGTCI's successor in transboundary conservation work, the Crossing the Medicine Line Network (CMLN) (Forrest *et al.* 2010).⁵ The FRBC Area contains both the East and West Blocks of Grasslands National Park in Saskatchewan, Canada (Figure 1.1). Therefore, the conservation targets identified by the NMGTCI for the FRBC Area are in line with the objectives delineated in Grasslands National Park's recent Management Plans (Parks Canada 2009, 2008; Fargey 2005). The FRBC

³ Including, but not limited to, the US Department of Interior-Bureau of Land Management (DOI-BLM); the United States Fish and Wildlife Service; Parks Canada; Environment Canada-Canadian Wildlife Service; the Prairie Farm Rehabilitation Administration; Alberta Fish and Wildlife; Saskatchewan Agriculture and Food; Saskatchewan Environment; the Saskatchewan Watershed Authority; World Wildlife Fund (WWF-US and WWF-Canada); The Nature Conservancy; Nature Conservancy Canada; Ducks Unlimited Canada and the University of Calgary (Smith Fargey 2004b).

⁴ Conservation Site Plans were developed for the Alberta Milk River (AB), Sage Creek/Southwest Pasture Complex (AB/SK/MT), Old Man on His Back (SK), Climax Region (SK), the Frenchman River Bitter Creek Area (SK/MT) and Whitewater Wetlands Areas (SK/MT) (Smith Fargey 2004b).

⁵ The CMLN is composed of representatives from government agencies, ENGOs, and academia on both sides of the border. It strives to "build broader awareness and forge a deeper commitment to conserve the region's native biodiversity through the engagement of stakeholders, clarification of conservation priorities and stakeholder interests, development of transboundary partnerships, and co-ordinated program delivery" while developing "a collaborative work environment that effectively balances conservation with the needs of human communities" (CMLN No Date). The CMLN is active in promoting interagency and cross-border communication, identifying areas of conservation and research priority, and fostering cross-border research projects (Fargey 2005; CMLN No Date).

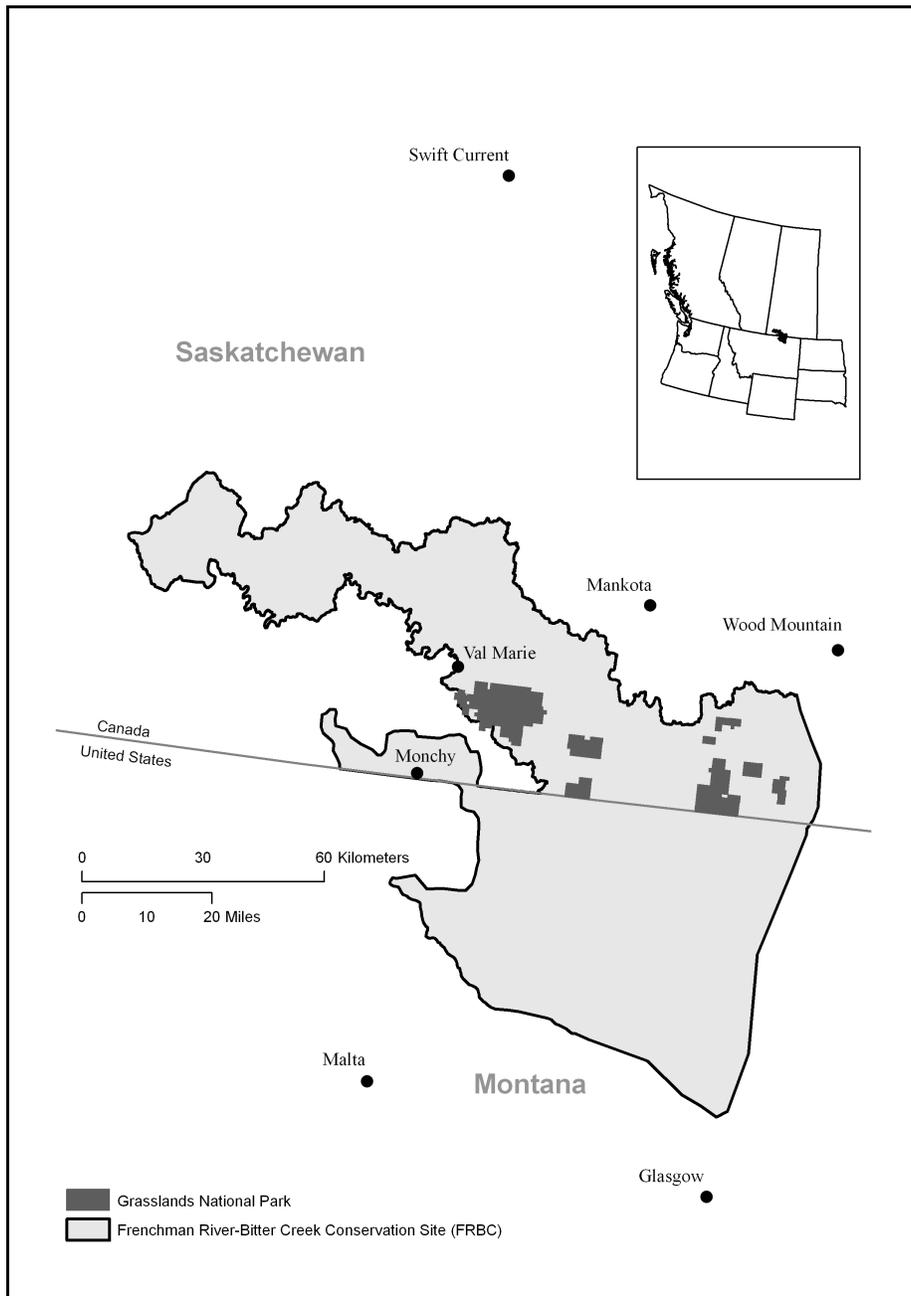


Figure 1.1: The FRBC Conservation Site⁶

⁶ Maps produced by Geoff Cunfer and Shannon Bruyneel, June 2010.

Conservation Site Plan also aligns with Parks Canada's corporate orientation emphasizing the engagement of multiple stakeholders in decision-making (Fargey 2005). As such, in addition to being the focal region of the CMLN, the FRBC Area has been embraced as a site of high conservation priority by Environment Canada, Parks Canada, Grasslands National Park, and their partners in Saskatchewan and across the 49th parallel in Montana (Fargey 2005; Smith Fargey 2004b). This is particularly evident in the context of Species at Risk recovery planning, which is recognized as requiring the integration of multiple partners across large spatial scales.⁷ As the FRBC Area is a borderland region in which historical tendencies support cross-border similarity and mobility, and in which transboundary co-operation for grasslands conservation and management has been strong, it is the ideal setting for an investigation of the potential of implementing ecosystem-based approaches to environmental management across the Canada-US border. This study is timely given the recent changes to the international border, and to the Canada-US relationship more broadly, since events such as the September 11, 2001 (9/11) terrorist attacks.

⁷ Fifteen species contained in Grasslands National Park are listed under Canada's federal Species at Risk Act. All of these are addressed in the FRBC Conservation Plan, which gives strong guidance for habitat securement, stewardship, species inventory, and habitat restoration priorities (Fargey 2005; Fargey *et al.* 2004).

1.2.2 Geographical Context

The FRBC Conservation Area encompasses all or part of eleven Rural Municipalities in southwestern Saskatchewan⁸ and the northern portions of Phillips and Valley Counties in Montana (Figure 1.2). It is composed of four areas identified in 1999 by The Nature Conservancy's North Great Plains Steppe Ecoregional Plan. These are the Frenchman River-Bitter Creek portion of Montana's Northwestern Glaciated Plains, the Frenchman River Valley in Canada and the United States, and both the East and West Blocks of Grasslands National Park in Saskatchewan (Fargey *et al.* 2004; TNC 1999).

1.2.3 Ecological Context

Grassland ecosystems cover up to 43% of the earth's surface (Gauthier *et al.* 2003); however, the World Resources Institute estimates that just 7.6% of the world's total grassland area is protected (White *et al.* 2000). In North America, less than 1.5% of the land area in the Great Plains ecoregion is managed primarily for biodiversity conservation (Forrest *et al.* 2004). In Saskatchewan, only 19% of the original mixed grass prairie ecosystem remains, much of which is fragmented into small land parcels (Parks Canada 2009, 2008). Grasslands National Park was established in southern Saskatchewan in 1988 to preserve a portion of the country's mixed grass prairie in the national system of protected, representative areas (Parks Canada 2009,

⁸ The eleven Rural Municipalities included in the FRBC Conservation Area are Val Marie No. 17, Lone Tree No. 18, Old Post No. 43, Waverley No. 44, Mankota No. 45, Glen McPherson No. 46, White Valley No. 49, Auvergne No. 76, Wise Creek No. 77, Grassy Creek No. 78, and Arlington No. 79.

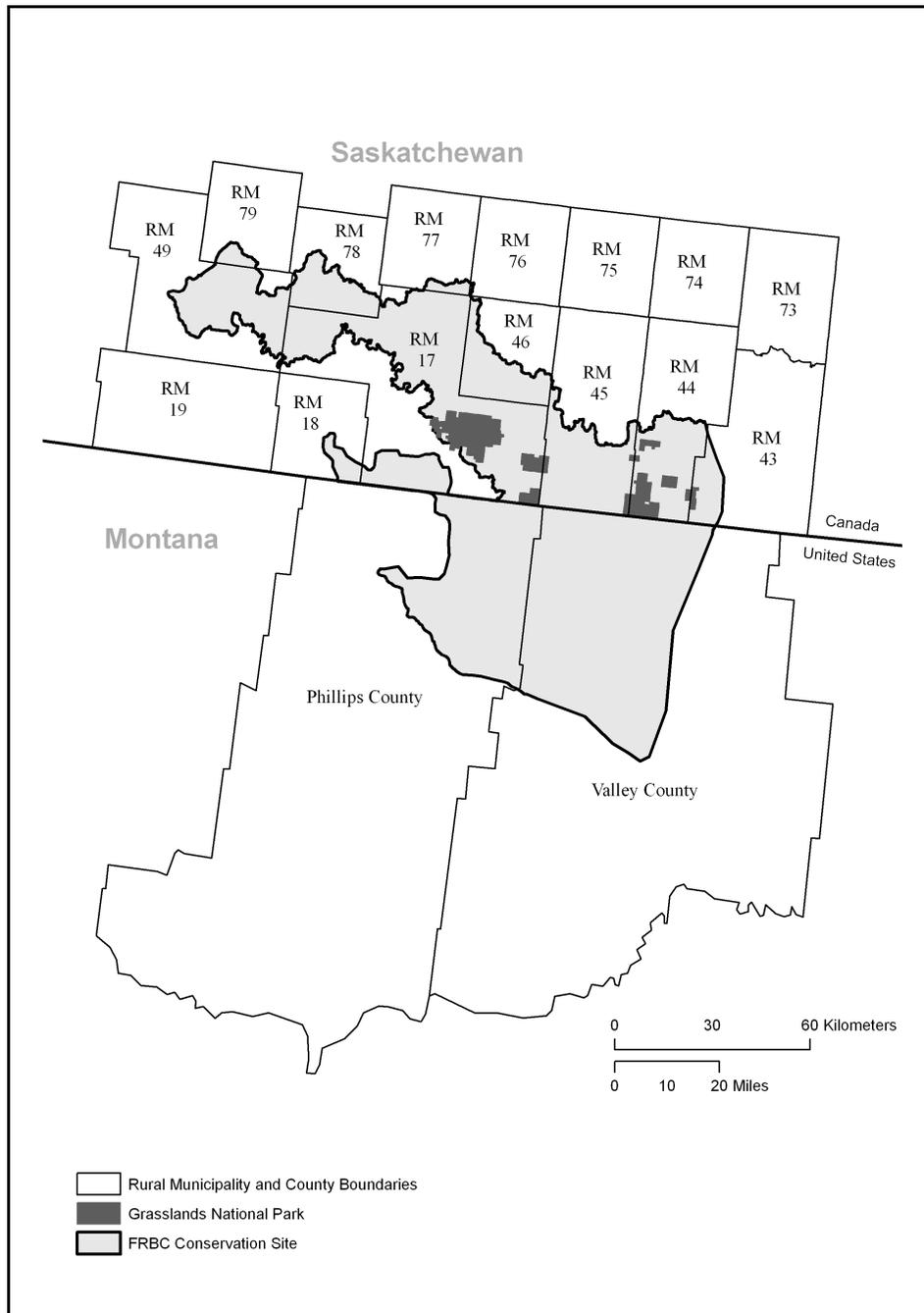


Figure 1.2: The Rural Municipalities and Counties of the FRBC Conservation Area

2008). It is the only Canadian National Park dedicated to grasslands (Parks Canada, 2009), and it has no formal American equivalent.⁹

The FRBC region is classified as sub-humid to semi-arid, with low annual precipitation (250-355mm) and severe drought conditions occurring on average in two out of every 10 years (Fargey *et al.* 2004). The grasslands of the FRBC Conservation Area are a mix of short and mixed grass prairie communities, intermixed with shrub steppe, badlands, cultivated lands, and riparian systems (Fargey *et al.* 2004). The grasslands of the FRBC Conservation Area are significant as they "...form the largest remaining intact grassland north of the Highline in Montana and stand out as one of the most extensive naturally functioning glaciated plains grasslands in North America. The persistence of extensive intact prairie grasslands in this site is a result of climate, land ownership and ranching as the predominant land use" (Fargey *et al.* 2004: 6).

1.2.4 Demographic and Socioeconomic Context

Interestingly, while human factors such as land ownership and ranching are cited as formative and perpetuating influences on the landscape, comparatively less research has been done on the regional social, economic and cultural landscape than on the regional biophysical

⁹ However, it must be noted that American grasslands may be protected in other ways, including as National Grasslands, as National Wildlife Refuges, or as other wildlife areas. In addition, grasslands on federal lands may be afforded protection under the management of the Department of Interior-Bureau of Land Management. The BLM manages land according to a multiple use management mandate (DOI-BLM MT 2009), including resource development and extraction, grazing, recreation, and conservation. Grasslands may also be afforded protection through programs such as the Conservation Reserve Program, is a voluntary land retirement program introduced by the United States Department of Agriculture, Farm Service Agency in 1985, under which producers are paid to take land out of agricultural production and seed it back to grass for a 10-15 year period (Cunfer 2005; Sullivan *et al.* 2004).

and geophysical landscape. Christie (2009) collected and analyzed historical and contemporary Population and Agricultural Census Data for Saskatchewan¹⁰ and Montana¹¹ portions of the FRBC region. In doing so, she created a comprehensive demographic and socioeconomic profile for the transboundary FRBC Area in the twentieth and twenty-first centuries. This research illustrated a host of regional trends that transcended the international border, although in certain case distinct national patterns emerged (see Table 1.1 for a summary of these data).

An analysis of census data over time for the RMs and Counties composing the FRBC Conservation Site confirms the regional population loss described in anecdotal evidence from residents (e.g. “Jerry”, Canadian agricultural producer, interview, December 13, 2007; “Joe”, Canadian public agency employee, interview, December 10, 2007; Widdis 2006). Specifically, there has been a relatively steady population decline in Phillips County, Montana since 1920; and the population of Valley County has declined since 1960. Population declines were reported for ten of the eleven Saskatchewan RMs composing the FRBC Conservation Site from 1996-2001. The relatively low population loss during this time period for the RM of Val Marie might be attributable to the location of Grasslands National Park’s Operations Compound and Visitor

¹⁰ In Canada, the Census of Population is conducted by Statistics Canada on a quinquennial (every 5 years) basis, and has been since 1956. The Census of Agriculture is conducted concurrently with the Census of Population, also by Statistics Canada, using a separate questionnaire. The Census of Population measures data at the level of the Census Subdivision, which equates to the Rural Municipality (RM) in Saskatchewan. The Census of Agriculture measures based on different units, called Census Agricultural Regions (CARs). One CAR comprises several RMs. The three CARs that include the RMs of the FRBC region are CAR 3AS, CAR 3BS, and CAR 4A (Christie 2009).

¹¹ The United States Census of Population is administered by the United States Census Bureau, which is part of the US Department of Commerce. The Census is conducted every ten years, and collects data about the people and the economy of the United States. The Census of Agriculture is now administered by the United States Department of Agriculture National Agricultural Statistics Service, but until 1996 was administered by the Department of Commerce, Bureau of the Census. The US Agricultural census is taken every five years, and was most recently completed in 2007. Both the US Census of Population and Census of Agriculture collect data at the county level (Christie 2009)

Centre in Val Marie, through the employment and retention of Parks staff. Interestingly, one of the study area's RMs (No. 79 Arlington) posted a population increase from 1996-2001. This is possibly due to heightened oil and gas development around the Shaunavon, Saskatchewan area (Johnstone 2008). In general, the census data also support the claims in the literature of fewer and larger farms, both regionally and nationally (e.g. Waiser 2005; Hanson 2001; Ottoson *et al.* 1966). While these data show that the average farm size in the Montana Counties of the FRBC region was much greater than that in the Saskatchewan CARs of the FRBC region, farm size has increased in both countries over time. While the number of farms has decreased overall in both countries, it is interesting to note that the number of farms in Montana's Phillips and Valley Counties actually increased from 1992-2007, while the number of farms in the Saskatchewan CARs has continued to decline recently.

The American and Canadian census collected, and due to differing population sizes, could disclose different information regarding the regional Aboriginal population.¹² There is only one small Reserve in the Canadian portion of the FRBC region (the Wood Mountain First Nation). Another Reserve, the Nekanee First Nation, lies to the West of the FRBC Region near Maple Creek, Saskatchewan. In Montana, the Fort Peck Reservation lies to the east of the study region and the Fort Belknap Reservation lies to the West. These are considerably larger than the Canadian Reserves.

¹² Privacy regulations in both countries prohibit the disclosure of information that may identify individuals, and therefore data describing small populations or areas are often masked. In the study region, the small RM/CAR sizes, small sizes of Aboriginal Reservations and populations, and small populations resulted in most specific information about the regional population being masked.

Population pyramids for each of the RMs (for 2001) and Counties (for 2000) of the FRBC Conservation Site constructed by Christie (2009), the narrowest part of each pyramid constructed was the 18-24 years age range. This suggests that young people in the region regularly move away to obtain higher education and/or employment in other areas. In the Saskatchewan RMs in 2001, the majority of the population was in the age range of 25-44 years; in Phillips and Valley Counties in 2000, the majority of the population was aged 30-34 and 55-59 years. This suggests that the FRBC region is composed primarily of middle-aged residents, many of whom likely move away after retirement, perhaps to have greater access to health care and other amenities. Interestingly, average family size in the Canadian portion of the FRBC Conservation Site equaled the national average. In the American portion of the study area, average family size was below the national average.

Another interesting aspect of the regional age distribution is an examination of the average age of farm operators. In both Phillips and Valley Counties, the average age of farm operators increased by approximately ten years between 1940 and 2007. In 2006, the average age of farm operators in the three Saskatchewan CARs composing the FRBC Conservation Site was lower than the Montana average, but still exceeded 50 years of age. This might suggest that agriculture is now an enterprise undertaken later in life; however, it also might suggest that the agricultural population is aging and not being replaced by younger workers.

With respect to education, employment, and income, several similarities were noted across the 49th parallel. In both the RMs (2001) and Counties (2000) of the FRBC Conservation Site, the highest level of education reported for the majority of the population was a high school

diploma or equivalency and/or some postsecondary education. Females reported slightly higher levels of education than did males. In both the Canadian and American portions of the study region, males were most likely to be employed in agriculture or other resource-based industries. While in both Saskatchewan and Montana, women were more likely than men to be employed in educational, health, and social service occupations, proportionately more Canadian than American women were employed in agriculture (although this varied by RM). With respect to income, the Saskatchewan RMs of the FRBC region had slightly higher median annual incomes in 2001 than did the Montana Counties in the region in 2000, even when considering currency exchange rates.

Table 1.1: Socioeconomic and Demographic Trends in the FRBC Region Over Time (From Christie 2009)

	Saskatchewan RMs/CARs of the FRBC Conservation Site	Montana Counties of the FRBC Conservation Site
Population Trends	<ul style="list-style-type: none"> - 1996-2001: - Population declines ranged from 8.4% (RM No. 17 Val Marie) to 34.9% (RM No. 46 Glen McPherson) - The population of RM No. 79 Arlington increased by 23.3% 	<ul style="list-style-type: none"> - Phillips County - Population of 9,311 (1920) - Population of 3,948 (estimated for 2007) - Valley County - Population of 17,080 (1960) - Population of 6,899 (estimated for 2007)
Number and Size of Farms	<ul style="list-style-type: none"> - 2001-2006: - Average farm size in the FRBC Region increased from a range of 1,636-3068 acres (2001) to 1,871-3469 acres (2006) - The number of farms decreased by 10.9-15.5% 	<ul style="list-style-type: none"> - Phillips County - Average farm size in 1920: 566.7 acres - Average farm size in 2007: 3,608 acres - 1,914 farms in 1920 - 556 farms in 2007 (up from 479 farms in 1992)

		<ul style="list-style-type: none"> - Valley County - Average farm size in 1920: 519.5 acres - Average farm size in 1920: 2,677 acres - 2,169 farms in 1920 - 770 farms in 2007 (up from 720 farms in 1992)
Average Family Size	<ul style="list-style-type: none"> - 3.0 persons in 2001 - Equal to the national average 	<ul style="list-style-type: none"> - Phillips County: 3.0 persons (2000) - Valley County: 2.9 persons (2000) - National average: 3.14 persons
Average Age of Farm Operators	<ul style="list-style-type: none"> - 52.0 years (2006) 	<ul style="list-style-type: none"> - Phillips County: <ul style="list-style-type: none"> - 48.4 years (1940) - 57.1 years (2007) - Valley County: <ul style="list-style-type: none"> - 48.8 years (1940) - 59.0 years (2007)
Median Annual Income	<ul style="list-style-type: none"> - Highest median annual incomes were in RM No. 49 White Valley (\$50, 436) and RM No. 77 Wise Creek (\$60, 287) in 2001 	<ul style="list-style-type: none"> - Median household income rates in Phillips and Valley Counties in 2000 was \$42,265 - \$48,937 Canadian dollars¹³
Aboriginal Population	<ul style="list-style-type: none"> - Wood Mountain Reserve <ul style="list-style-type: none"> - 24.45 km² - The 2006 population was 17, a 70% increase from the 2001 population (Statistics Canada 2006) - Nekaneet First Nation Reserve <ul style="list-style-type: none"> - 13 km² - The 2006 population was 160, an 18.8% decrease From the 2001 population. 	<ul style="list-style-type: none"> - In 2000, 7.6% of Phillips County's population and 9.4% of Valley County's population identified as American Indian/ Alaska Native. - The Fort Peck Reservation: <ul style="list-style-type: none"> - Approximately 8288 km² - About 6,000 of the 11,786 enrolled Tribal members live on near the Reservation (FPT 2009) - The Fort Belknap Reservation <ul style="list-style-type: none"> - Approximately 2732 km² - About 4,921 of the 5,426 enrolled Tribal members live on or near the Reservation (FBIC 2003)

¹³ Assuming a currency exchange rate of 1.483 on July 1, 2000 (XE No Date).

1.3 RESEARCH PURPOSE AND RESEARCH QUESTIONS

The purpose of this research is to ascertain the suitability of ecosystem-based approaches to environmental management for bringing public, private and civic actors together to address social and ecological concerns in a holistic way, that is cognizant of whole ecosystems and the linkages between ecological and socioeconomic systems, in a transboundary environmental management context.

To pursue this line of inquiry, a series of questions were posed to define manageable research tasks, and to guide the structure of this dissertation and its manuscripts (Table 1.2).

Table 1.2: Research Questions

Research Question	Associated Chapter(s)
1. How might the ‘borderland’ concept influence ecosystem-based approaches to grasslands conservation and management in place of politically- or administratively-defined approaches in the FRBC area? <ul style="list-style-type: none">▪ To what extent are residents in synch with the ‘borderland’ concept?	2, 3, 4
2. What are the implications of ecosystem-based approaches for environmental management, such as government agencies, other governance regimes, and informal institutions including public involvement?	3, 4, 5
3. What are the implications of ecosystem-based approaches for existing property regimes and the maintenance of traditional livelihoods in the region?	4, 5

To answer these questions, it was first necessary to establish a contextual understanding of the study area. This included developing an understanding of the multigenerational linkages among people, and their lands and livelihoods. It also involved examining the role that the international

border plays in the region, and how this role has changed over time. The remainder of the research questions were answered through investigations of the political, social, and ecological similarities and differences across the international border. This included the identification of common threats to, and divergent management regimes for, the grasslands environment across the border. This information permitted an analysis of the ability to conduct planning and management for the grasslands environment as an ecosystem, versus the barriers to ecosystem-based approaches to environmental management created by the international border and the fragmentation of the grasslands into different political, regulatory, and cultural jurisdictions. The answers uncovered by this research are contained in the set of four manuscripts that compose this dissertation (Chapters 2-5).

1.4 LITERATURE REVIEW: CONCEPTUAL, THEORETICAL, AND METHODOLOGICAL FRAMEWORKS

To begin to answer the research questions posed, a comprehensive literature review was conducted in the fields of environmental management, border studies, and political ecology. Each body of literature uniquely informed the conceptual, theoretical and methodological directions of this research.

1.4.1 Conceptual Framework

Conceptually, this research rests is situated within three bodies of literature: environmental management, political ecology, and border studies (Figure 1.3). Environmental

management is the outer ring shown in Figure 1.3, as it is the conceptual umbrella under which border studies and political ecology are considered in this research. Ecosystem-based approaches are considered as an approach to environmental management. As ecosystem-based approaches necessitate a remapping of landscapes to challenge anthropogenic political and administrative borders, an investigation of the border studies literature was required to understand how these borders were delimited and what they, and their adjacent borderlands, mean to residents and land managers. While political ecology may be considered to be an analytical approach for understanding environmental management (Barrow 1999), its unique philosophical and theoretical roots and its range of historical and contemporary applications merit a dedicated discussion, both in general terms and in the context of how it informs this research (see Neumann 2005; Peet and Watts 2004; Robbins 2004 and Paulson *et al.* 2003).

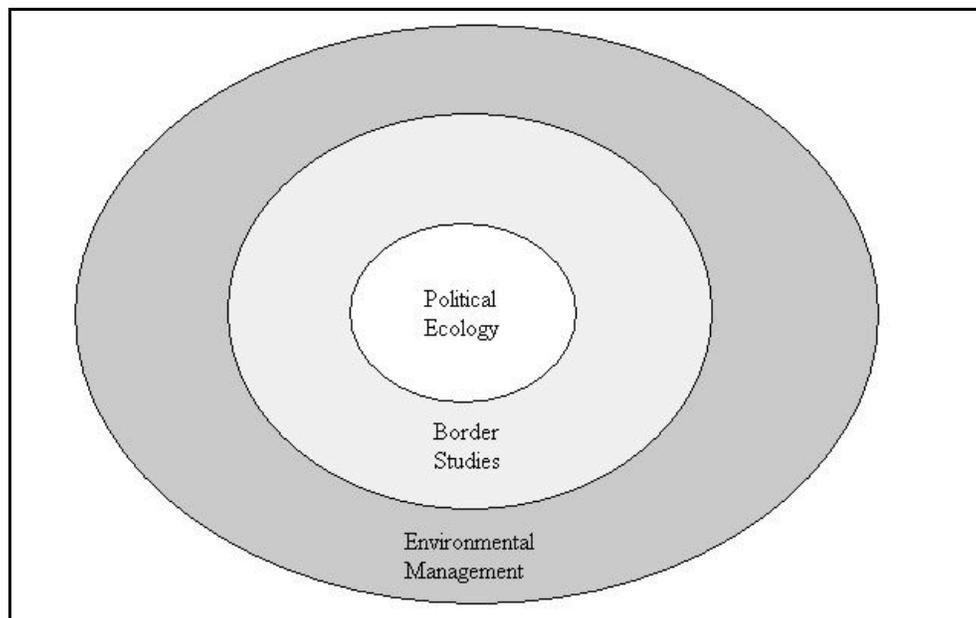


Figure 1.3: Conceptual Framework

1.4.2 Theoretical Framework

Just as none of the fields of environmental management, border studies or political ecology may be definitively associated with one disciplinary or theoretical approach, this research borrows from the traditions of multiple, complementary theoretical perspectives to interrogate the imbrications of these fields.

Environmental Management

While there is no universally accepted definition of ‘environmental management’ (Barrow 1999), its traditional conceptualizations hold that as “...one of the state’s key responsibilities is to act as a ‘steward’ of the environment, it follows that environmental management is an activity conducted by the state on behalf of the citizens that it claims to represent” (Bryant and Wilson 1998: 322). Viewed as a function of the state, environmental management has been criticized as being top-down; focused on commercial resources rather than taking an holistic approach to environmental and resource management; positivistic; not inclusive of local or traditional knowledge or the input of non-state actors; ignorant of the historical aspects of human-environment relationships; and merely reactive to environmental problems (Bryant and Wilson 1998; Harvey 1996). Yet, emerging and complex global environmental problems necessitate that environmental management be reconceptualized to incorporate a wider set of stakeholders, knowledge types, and scholarly disciplines – combining the physical and social sciences – in environmental decision-making (Bryant and Wilson 1998). This is consistent with research in regulatory theory, which argues for a mix of top-down and

decentralized control that combines a broader range of participants than just government-affiliated actors to implement various instruments in (environmental) policy making (Gunningham *et al.* 1998).

Such calls to increase emphasis on the social aspects of environmental management to achieve a more holistic perspective lie in the postmodern approach to environmental management (Barrow 1999). Such an approach holds that environmental management is consistent with sustainable development; that it supports environmental stewardship over exploitation; it is cognizant of time scales beyond the present and spatial scales beyond the local; and it incorporates multiple disciplines from the natural sciences to social sciences in environmental planning and policy making (Barrow 1999).

Adopting ecosystem-based approaches to environmental management is consistent with this reconceptualization. Inherent to the accepted definitions of an ecosystem approach is the incorporation of multiple stakeholders and disciplines in collaborative decision-making. In the context of such a participatory approach to environmental management, Barrow (1999: 245) emphasizes the importance of understanding local history and context, as “if the environmental manager does not understand society and history as well as ecology, then serious difficulties can arise”, for example, in misinterpreting the meaning of local environmental attributes. Further, he calls for the inclusion of multiple ways of knowing, noting that “...received wisdom is not enough...local knowledge and objective multidisciplinary or interdisciplinary studies are needed” (Barrow 1999: 245). Ecosystem-based management also “seeks to transcend arbitrary political and administrative boundaries, to achieve more effective, integrated management of

resources and ecosystems at regional and landscape scales” (Slocombe 1998a: 31) through collaborative, multistakeholder decision-making processes (Mitchell 2002; Cortner and Moote 1999; Yaffee 1999; Endter-Wada *et al.* 1998; Fitzsimmons 1998, 1996; Grumbine 1997, 1994). As this research examines the potential to harmonize grasslands conservation and management approaches across the Canada-US border, these characteristics of ecosystem-based management assume great significance.

Border Studies

The field of border studies has a long, atheoretical history in geography, as borders were traditionally viewed as static lines on maps separating states and defining the limits of national sovereignty (Newman 2006, 2003; Newman and Paasi 1998; McKinsey and Konrad 1989). The field of border studies has undergone a renaissance in recent decades (Newman 2006, 2003; Breitung 2002; Newman and Paasi 1998). The field of contemporary border studies has focused on interdisciplinary scholarship (Newman 2006). It has engaged with postcolonial thought in investigations of artificial borders and civil conflict, such as the legacy of Africa’s colonial borders (Newman 2006). It frames borders as social, political and discursive constructs (McManus 2005; Newman 2003; Newman and Paasi 1998), and as non-static entities that should be approached historically to obtain contextual understanding of their construction and meaning(s) to local, regional, and national actors (Newman and Paasi 1998). It also frames them as dynamic institutions that formalize processes of inclusion and exclusion (Newman 2006; 2003).

Case studies in contemporary, geographical border studies have focused primarily on Europe (Breitung 2002). This revival in interest, and empirical focus, in Europe is attributable to European borders' long history and their myriad changes, such as territorial change (the collapses of the USSR and Yugoslavia, and the creation of new states) and economic change (the creation of the EU) (Newman 2006; Newman 2003; Newman and Paasi 1998). Such events enriched the postmodern discourse of border studies, which holds that borders are now less permanent and less relevant than they were in the past; and that they are effectively dissolving in the wake of economic globalization (Newman 2006; Newman and Paasi 1998).

However, yet another paradigm for border studies has emerged from the new global security discourse resulting from 9/11 (Farson 2006; Newman 2006; Nicol 2006; McManus 2005; Newman 2003; Singh and Ganster 2003). New ways of conceptualizing 'borders', 'nationality', and 'security' since 9/11 have prompted the prevailing economic discourse of dissolving borders in the wake of globalization to be supplanted by the discourse of reinforcing borders for purposes of national security (Farson 2006; Newman 2006; Nicol 2006). This 'post' postmodern view of borders is adopted in this research, given the saliency of post-9/11 security regimes to the Canada-US border, and the incongruity between the notions of reinforcing a previously porous border with heightened security regulations on the one hand and working across political and administrative borders to achieve ecosystem-based approaches to environmental management on the other.

Political Ecology

Adopting large scale planning and management approaches, such as ecosystem-based management and ecoregional planning, is complicated across an international border, as institutional arrangements for environmental management may differ on either side. The ‘borderland’ concept and the notion of north-south ecological and social linkages in the Northern Great Plains seem to support the need to adopt ecosystem approaches and a regional governance model in which public, private, and civic actors work together to identify environmental problems, and to find and implement solutions. In doing so, however, there is a chance that ecosystem-based management and ecoregional planning efforts may superimpose new forms of top-down management on local communities, resulting in the dislodging of entrenched power structures, a reexamining of resource allocations, and threatening of traditional livelihood systems and existing institutional arrangements (Clapp 2004; Hurley and Walker 2004; Hayter 2003; Walker and Fortmann 2003). This concern is nested in political ecology, which, while not (yet) a coherent theory, is described as a ‘research agenda’, a ‘perspective’ or an ‘approach’ to investigations of human-environment interactions (Neumann 2005; Johnston *et al.* 2000).

The theoretical roots of political ecology are well documented (see Neumann 2005; Peet and Watts 2004; Robbins 2004 and Paulson *et al.* 2003). It has emerged from counter movements to environmental determinism (Neumann 2005; Robbins 2004). It combines the tools of cultural ecology and the hazards school of geography with theoretical concepts from political economy, cultural ecology, common property theory, green materialism, peasant studies and the moral economy, feminist development studies, discourse theory, critical environmental

history, Marxism, poststructuralism, and postcolonial theory and colonial critiques to form a contemporary, interdisciplinary political ecology (Neumann 2005; Robbins 2004; Paulson *et al.* 2003; McCay 2002). The importance of historical investigations, and specifically the importance of understanding the contexts of the systems under study, is emphasized in political ecology (Paulson *et al.* 2003; Walker and Fortmann 2003; McCarthy 2002; Mitchell 2002; Stott and Sullivan 2000; Barrow 1999; Low and Gleeson 1998; Bryant 1992; Blaikie and Brookfield 1987). Traditionally applied to ‘Third World’ settings, political ecology holds that the poor are not the cause of environmental problems; rather, prevailing political, economic, and social forces, including government policies, trade issues, and faulty land rights, are the causal factors (Robbins 2004; Stott and Sullivan 2000; Bryant 1992; Blaikie and Brookfield 1987). Political ecology has increasingly been applied to ‘First World’ settings, focusing on land tenure and resource access regimes (McCarthy 2002; Robbins 2002).

Political ecology analyzes power relationships, based on variables such as class, race, ethnicity or gender, in the way decisions are made and benefits are shared (Berkes 2004; Berkes *et al.* 2003). Furthermore, it draws attention to “...how local patterns of land use are related to broader social, political and economic conditions, and how the environment serves as a locus for the enactment and perpetuation of patterns of inequality” (Brosius and Russell 2003: 47). Therefore, political ecology seeks an “...integrated explanation of human-environmental interactions linked through different scales from the international/global to the local...[and it] centres on the relative power of various social actors (stakeholders) involving access to, and management of, natural resources; and links these actors within and among levels through

relations of power” (Reed and Mitchell 2003: 329; Stonich 1998: 29). In this research, political ecology is used as the lens through which to examine competing claims to resource and land use rights in the Northern Great Plains. These become particularly acute as the contests between grasslands conservation; traditional, agricultural land uses; and emerging land uses such as energy and recreation development are examined. The relative weights given to the various stakeholder voices in these debates are also investigated.

1.4.3 Methodological Framework

The research methodology adopted for this research is informed by the conceptual and theoretical foundations of the bodies of literature identified above. Each of the supporting literatures emphasizes the importance of taking an historical approach to research; and it follows that each stresses the value of investigating local conditions and engaging with multiple stakeholders to build understanding of contemporary issues situated in their historical political, economic, cultural and social contexts. The methods employed under the guidance of this framework are discussed in the following section.

1.5 RESEARCH METHODOLOGY

This research employs multiple methods, all of which are firmly rooted in the relevant academic literature. At the outset of this research, I identified the most appropriate data and information collection methods to be the literature review process; content analysis of regional planning and management documents and both contemporary and historical maps; field work

and participant observation; interviews with employees of government agencies (at the federal, state/provincial, and municipal/county levels) and ENGOS; interviews with local residents and agricultural producers; and attendance at public meetings. These methods are supported by the literature in the fields of environmental management (e.g. Pedynowski 2003; Barrow 1999), border studies (e.g. Newman and Paasi 1998), and political ecology (e.g. Hurley and Walker 2004; Robbins 2004).

This research began with a comprehensive academic literature review centred on the above three bodies of literature. As the Northern Great Plains segment of the Canada-US border is the “most often studied in comparative literature” (McKinsey and Konrad 1989: 20), this research examines creative literature, such as poetry, fiction and autobiographies written by those living in the Northern Plains border region, and/or reflecting upon the border region. McKinsey and Konrad (1989: 20) noted, “literature is probably the best avenue to address the question of regional borderlands cultures”, and LaDow (2001: 109) confirmed, “with their cameras and in their written words, borderland residents revealed the constant push and pull of nature on their lives.” Therefore, the inclusion of creative literature provided context and human meaning to the academic literature consulted.

As part of the literature review, and to ensure consistency with the historical approach to geographical research, I examined historical regional maps. I also examined contemporary maps, and ecoregional planning documents such as conservation strategies produced by ENGOS. This was consistent with the literature in the fields of political ecology and ecosystem-based management, which noted that content analysis of public/historical documents and records, and

management policies, is appropriate (Bergmann and Bliss 2004; Hurley and Walker 2004; Pedynowski 2003).

Map analysis has been championed by border studies scholars, as “states and other territorial entities, as well as their boundaries, are not static... the study of narratives and discourse is central to an understanding of all types of boundaries... these narratives range from foreign policy discourses, geographical texts and literature (including maps), to the many dimensions of formal and informal socialization which affect the creation of sociospatial identities” (Newman and Paasi 1998: 201). Just as books, essays, poems, and technical reports are texts, cultural creations such as paintings, landscapes and maps are also texts, albeit graphic, cultural, and political ones (Aitken 2005; Doel 2003; Crampton 2001; Barnes and Duncan 1992; Harley 1992, 1989; Pickles 1992). Traditional cartographic theory held that maps were the neutral, objective products of scientific attempts to represent the features of the earth’s surface as accurately as possible, but contemporary cartographic theories have challenged the assumption of scientific neutrality in maps (Kitchin and Dodge 2007; Pickles 2004, 1992; Harley 1989). Such arguments, focusing on the act of mapping rather than the map-product (Perkins 2003), assert that mapping is an interpretive, not a technical, act (Pickles, 1992). Therefore, maps are never neutral (Livingstone 2005; Pickles 2004; Harley 1989); they are constructed images, and indeed are social constructions (Kitchin and Dodge 2007; Crampton 2001; Pickles 1992; Harley 1989), that are ideological, not transparent, entities (Harley 1992). This occurs as maps reflect both the facts (for example, what appears on the earth’s surface) and also the author’s values and interpretations (Pickles 2004, 1992; Monmonier 1996). A map is influenced by the profession,

culture and time period of its author (Pickles 2004, 1992), so that “defining a map then is dependent on where and when the map was created, and where and when it was engaged with...” (Kitchin and Dodge 2007: 333; see also Livingstone 2005). Therefore, “cartographic facts are only facts within a specific cultural perspective” (Harley 1989:3), as maps selectively show attributes through deliberate symbology and generalization to highlight or de-emphasize certain features (Kitchin and Dodge 2007; Pickles 2004, 1992; Crampton 2001; Monmonier 1996; Harley 1989). For this research, I examined the historical maps used and produced by early explorers of the region, and their accompanying journals, including Alexander MacKenzie (1789-1793), the Lewis and Clark expedition (1803-1806), John Palliser (1857-1860), John Macoun (c.1872) and the Boundary Survey Party (1872-1876). Maps were subject to hermeneutic analyses (Doel 2003; Pickles 1992) with attention to their origins, their intended meanings at the time of creation, and their received meanings at the time of analysis (Kitchin and Dodge 2007; Aitken 2005; Pickles 2004, 1992). These historical maps and journals helped to establish understanding of the origins and evolution of the 49th parallel boundary over time, so that its past and present meanings could be better understood. Contemporary maps were consulted to ascertain how regions, such as the Great Plains (Rossum and Lavin 2000) and the Northern Great Plains (e.g. Forrest *et al.* 2004) are currently delimited.

Conservation strategies created by regional ENGOs were also analyzed, in order to provide an understanding of extant efforts for transboundary planning and co-operation for grasslands conservation and management. Such documents were selected for analysis based on three factors. First, they had to deal substantively with grasslands conservation and management

in Saskatchewan and/or Montana. Second, they had to address the issue of conservation planning and implementation across the international border. Finally, I limited my search and analysis to documents that had been published within the last ten years, to maintain policy and issue relevancy. The documents selected included the transboundary conservation strategies produced by the Nature Conservancy of Canada (Riley *et al.* 2007), the NMGTCI (Smith Fargey 2004a), the World Wildlife Fund (Forrest *et al.* 2004), and The Nature Conservancy (TNC 1999). These documents were read with particular attention to their authors, their delimitation of ecoregional boundaries, their goals, their plans for action towards these goals, and their achievements.

Field work and participant observation, including researcher involvement in community activities, were identified as being particularly important methods for political ecologists, who often adopt an ethnographic approach to research (Neumann 2005; Robbins 2004). To corroborate the regional atmosphere constructed by the literature, including previously published interviews and oral histories (Widdis 2006; Poirier *et al.* 2005), I conducted multiple site visits to the FRBC Area from Autumn 2005-Spring 2009. During this time period, I undertook ten site visits, each with an average duration of 2-3 days. Most of these site visits were conducted during the winter months (November-March). The remainder were conducted in the spring/summer (May and June). This timing allowed my visits to coincide with the ‘quiet’ periods in agricultural regions and particularly on active farms/ranches. Conducting interviews with government officials, community leaders, and residents was a common research method employed in the political ecology and applied ecosystem-based management literature

(Bergmann and Bliss 2004; Hurley and Walker 2004; Pedykowski 2003; Singleton 2002). These interviews were frequently semi-structured (Hurley and Walker 2004; Pedykowski 2003), and their coding was described as an open, systematic, thematic and iterative process (Reed 2007; Bergmann and Bliss 2004; Pedykowski 2003). I conducted a set of thirty (30) interviews from June 2007-May 2008 with key informants¹⁴ from public agencies (federal, state/provincial, and county/municipal government agencies and departments) and ENGOS, as well as with private landowners and agricultural producers,¹⁵ in the transboundary FRBC Area (Table 1.3).¹⁶ Initial interview candidates were selected from among the NMGTCI and CMLN partner organizations, and the remaining interview participants were recruited using snowball sampling techniques. The interviews conducted were semi-structured, lasted an average of one hour, and followed a consistent schedule of questions under the four main thematic areas of ‘conservation attitudes and values’, ‘environmental legislation and policies’, ‘ecosystem management’, and ‘transboundary attitudes and relations’ (Appendix A).¹⁷ Each interview was digitally recorded

¹⁴ Several of the organizations and/or individuals, representing various stakeholder groups, originally contacted did not respond to, or denied, the interview request. One consequence of this was that the final interview sample did not include the regional, on-Reserve/Reservation Aboriginal population. However, the interview sample does include public agency representatives tasked with land or resource management on Aboriginal lands, and with members of the off-Reserve/Reservation population.

¹⁵ In this region, it is important to distinguish between ‘farmers’ and ‘ranchers’ within the broader category of ‘agricultural producers’. ‘Rancher’ describes a producer whose primary focus is cattle and beef production, whereas ‘farmer’ denotes a producer focused on crop, primarily cereal, cultivation (see Jones 2002 and Breen 1983 for discussion). In this research, the term ‘agricultural producer’ is used to refer to the ranchers and ‘mixed farmers’, who produced both livestock and crops, who made up the interview sample for this stakeholder group.

¹⁶ Nineteen (19) interviews were conducted with Canadian participants and eleven (11) interviews were conducted with American participants. This does not, however, reflect the total number of interview participants, as five of the interviews completed were conducted with more than one participant. Group interviews were conducted on large, family-operated ranches and in public agencies and ENGOS when several people with similar mandates but different roles expressed interest in participating in this project.

¹⁷ While the categories of questions were consistent, specific questions often varied to remain relevant to the participant; therefore, public agency employees and ranchers were asked slightly different questions.

Table 1.3 Interview Participants by Primary Affiliation

Primary Affiliation¹⁸	Number of Interviews
Canada – Public Agency (Federal/Provincial/Municipal)	10
Canada – ENGO	2
Canada – Agricultural Producer	7
USA – Public Agency (Federal/State/County)	6
USA – ENGO	4
USA – Agricultural Producer ¹⁹	1

and transcribed verbatim. To ensure data quality and validity, each interview participant was given the opportunity to review and revise his or her transcript prior to its analysis. Verified transcripts were then analyzed through deductive and inductive coding using the qualitative data analysis program Atlas.ti (after Reed 2007). To ensure rigour and validity in the presentation of interview data, numerous detailed quotations from the interviews conducted are provided throughout the dissertation (see Baxter and Eyles 1997). Interview participants were assigned pseudonyms consistent with their gender identity to protect their confidentiality when citing these interviews.²⁰ To further protect the confidentiality of interview participants, exact interview locations and participants' institutional affiliations were not disclosed; however, participants were identified by country and stakeholder group to provide context to their

¹⁸ In many cases on both sides of the border, interview participants could be placed in more than one category, for example, a public agency employee who operated a small ranch, or worked exclusively with oil and gas development or the management of Aboriginal lands; or a rancher of Aboriginal descent; or an ENGO employee active in local politics. This categorization represents only participants' *primary* affiliation and not the range of stakeholder groups he or she could be perceived to represent.

¹⁹ In the case of agricultural producers, many of those interviewed lived very close to the Canada-U.S. border, and many had intermarried, attended school, or had close personal friends across the border. As such, the distinction between "Canadian" and "American" agricultural producers was often blurred in locations immediately adjacent to the border, and this is reflected in the number of interviews conducted in Canada versus the United States.

²⁰ In the case of interviews with multiple participants, the pseudonym assigned is consistent with the gender identity of the dominant participant.

comments. This protocol was approved by the Behavioural Research Ethics Board at the University of Saskatchewan.

Finally, in some of the antecedent political ecology literature, authors attended public meetings during which residents' attitudes and concerns regarding conservation were expressed (Hurley and Walker 2004; Brogden and Greenberg 2003). I attended one meeting in 2008 in Saskatchewan, during which approaches to combating a local and transboundary threat to the FRBC area's grassland were discussed. This experience provided additional in-depth understanding of local grassland management and conservation issues and of community dynamics.

1.6 DISSERTATION ORGANIZATION

This dissertation is anchored by four core chapters (Chapters 2-5). While each of these chapters is self-contained and able to stand alone as a piece of scholarly work, they are intended to build upon one another to form a comprehensive set of responses to the research questions posed (Table 1.2). Each provides a unique lens through which understanding of borderland regions and relationships, environmental management across borders, and borderland lives and livelihoods is advanced.

The first manuscript (Chapter 2) is contextual in nature, and adopts an historical approach. This approach is consistent with the calls issued in the environmental management, political ecology, and border studies literatures for researchers to more explicitly engage in historical research to understand the prevailing context of contemporary issues, problems, and

values. This paper uncovers two narratives that have been present in theorizing, describing, and perceiving the Northern Great Plains borderland through time. First, the border is simultaneously considered to be an artificial yet real entity. For example, while no natural features distinguish the ‘Canadian’ from the ‘American’ portions of the landscape, the border indeed divides two different countries with different political and regulatory systems, philosophical orientations, and cultures. Second, the borderland landscape concurrently inspires affinity and antagonism, or love and hate, on behalf those who live and work there. These feelings most frequently manifest as expressions of peace and tranquility, versus loneliness and desolation, respectively.

The second manuscript (Chapter 3) illustrates the role that the border plays in the contemporary lives and activities of those living and working in the borderland. This paper builds upon the first by interrogating recent events sparking changes in the Canada-US border and binational relationship. Specifically, this manuscript forces the reader to be cognizant of recent changes to the border due to two significant events: 9/11 and the 2003 BSE Crisis that resulted in the closure or partial closure of the American border to Canadian beef, beef products and cattle until 2007. Both of these events, and the changes to the broader Canada-US and the regional Saskatchewan-Montana borders and relationships they instigated, have become ensconced in the region’s history during the last decade. Increased border security since 9/11 has acted to make the Canada-US border less porous, so that the mobility of people, goods and ideas across it has been limited. In the case of BSE, relationships between agricultural producers on either side of the Saskatchewan-Montana border were strained at the regional and local levels.

Although this event did not lead to robust border changes, lingering tensions remain. As such, both 9/11 and the BSE Crisis have the potential to alter regional-cross border relationships to the detriment of transboundary environmental co-operation.

The third manuscript (Chapter 4) uses the comprehensive understanding of regional cross-border relationships developed in the first two manuscripts to examine the extent to which the transboundary Northern Great Plains is a 'shared landscape', and to what extent this landscape is subject to 'divergent visions' for planning, management, and conservation. Specifically, this paper examines attempts to plan, manage and conserve the Northern Great Plains grasslands based on ecosystem, rather than political or administrative, boundaries. However, it also highlights the philosophical, regulatory, and socioeconomic differences across the international border that act to complicate the implementation of ecosystem-based approaches to environmental management by federal and state/provincial government agencies; ENGOs; and local residents.

The fourth manuscript builds upon the findings of the third, which was centred on the insights obtained from interviews with employees of public agencies and ENGOs. The fourth and final manuscript (Chapter 5) incorporates the insights of regional agricultural producers to provide an alternative assessment of the feasibility of implementing ecosystem-based management approaches across the international border. This paper is structured as a response to Bryant and Wilson's (1998) critique of environmental management as a top-down, positivist approach that fails to meaningfully incorporate local knowledge in decision-making processes. This paper also elaborates upon some of the issues presented in the previous manuscript, as it

draws attention to the successes of informal, grassroots or 'bottom-up' environmental management efforts, and emphasizes the value of local knowledge and action in attempts to transcend the international border in environmental management. In Chapter 6, I summarize the findings of this research, address its potential limitations, and suggest multiple avenues for future research inspired by this dissertation.

1.7 REFERENCES

- Aitken, S.C. 2005. Textual analysis: reading culture and context. In Flowerdew, R. and D. Martin (eds.). 2005. *Methods in Human Geography: A Guide for Students Doing a Research Project*. 2nd ed. Harlow: Pearson Education Limited: 233-249.
- Alper, D.K. 2004. Emerging Collaborative Frameworks for Environmental Governance in the Georgia Basin-Puget Sound Ecosystem. *Journal of Borderlands Studies* 19(1): 79-98.
- Barnes, T.J. and J.S. Duncan. 1992. Introduction: Writing Worlds. In Barnes, T.J. and J.S. Duncan (eds.). 1992. *Writing Worlds: Discourse, text and metaphor in the representation of landscape*. London and New York: Routledge: 1-17.
- Barrow, C.J. 1999. *Environmental Management: Principles and Practice*. London: Routledge.
- Baxter, J. and J. Eyles. 1997. Evaluating Qualitative Research in Social Geography: Establishing 'Rigour' in Interview Analysis. *Transactions of the Institute of British Geographers*, New Series 22(4): 505-525.
- Bergmann, S.A. and J.C. Bliss. 2004. Foundations of Cross-Boundary Co-operation:

- Resource Management at the Public-Private Interface. *Society and Natural Resources* 17(5): 377-393.
- Berkes, F. 2004. Rethinking Community-Based Conservation. *Conservation Biology* 18(3): 621-630.
- Berkes, F.; Colding, J. and C. Folke. 2003. Introduction. In Berkes, F.; Colding, J. and C. Folke. (eds) *Navigating Social-Ecological Systems: Building Resilience for Complexity and Change*. Cambridge, UK: Cambridge University Press: 1-29.
- Blaikie, P.M. and H. Brookfield. 1987. *Land Degradation and Society*. London and New York: Methuen.
- Breen, D.H. 1983. *The Canadian Prairie West and Ranching Frontier, 1874-1924*. Toronto: University of Toronto Press.
- Breitung, W. 2002. Transformation of a boundary regime: The Hong Kong and Mainland China Case. *Environment and Planning A* 34: 1749-1762.
- Brogden, M.J. and J.B. Greenberg. 2003. The Fight for the West: A Political Ecology of Land Use Conflicts in Arizona. *Human Organization* 62(3): 289-298.
- Brosius, J.P. and D. Russell. 2003. Conservation from Above: An Anthropological Perspective on Transboundary Protected Areas and Ecoregional Planning. *Journal of Sustainable Forestry* 17(1-2): 39-65.
- Bryant, R.L. 1992. Political ecology: an emerging research agenda in Third World Studies. *Political Geography* 11(1): 12-36.
- Bryant, R.L. and G.A. Wilson. 1998. Rethinking Environmental Management. *Progress in*

- Human Geography* 22(3): 321-343.
- Carter, N. 2007. *The Politics of the Environment: Ideas, Activism, Policy*. 2nd ed. New York: Cambridge University Press.
- Castree, N. 2004. Environmental Issues: Signals in the Noise? *Progress in Human Geography* 28(1): 79-90.
- Christie, S. 2009. *A Socioeconomic Profile of the Frenchman River-Bitter Creek Conservation Area, Southwestern Saskatchewan and Northern Montana*. Unpublished Report for Parks Canada-Grasslands National Park, Crossing the Medicine Line Project. 185pp.
- Clapp, R.A. 2004. Wilderness ethics and political ecology: remapping the Great Bear Rainforest. *Political Geography* 23(7): 839-862.
- Cortner, H.J. and M.A. Moote. 1999. *The Politics of Ecosystem Management*. Washington, D.C.: Island Press.
- Crampton, J.W. 2001. Maps as social constructions: power, communication and visualization. *Progress in Human Geography* 25(2): 235-252.
- Crossing the Medicine Line Network (CMLN): The Northern Mixed Grass Transboundary Conservation Initiative. No Date. *About Us*. Available: www.crossingthemedicineline.net/about_us.htm. Accessed October 7, 2009.
- Cunfer, G. 2005. *On the Great Plains: Agriculture and Environment*. College Station, Texas: Texas A&M University Press.
- Doel, M.A. 2003. Analyzing Cultural Texts. In Clifford, N.J. and G. Valentine (eds.).

2003. *Key Methods in Geography*. London/Thousand Oaks/New Delhi: Sage
Publication: 501-514.
- Dolan, C.C. 1999. The national grassland and disappearing biodiversity: can the prairie dog save us from an ecological desert? *Environmental Law* 29(1): 213-234.
- Endter-Wada, J; Blahna, D.; Krannich, R. and M Brunson. 1998. A Framework for Understanding Social Science Contributions to Ecosystem Management. *Ecological Applications* 8(3): 891-904.
- Fargey, P. (Principal Investigator). 2005. *Crossing the Medicine Line: The Frenchman River-Bitter Creek Conservation Action Plan*. 2005-06/2007-08. Unpublished Proposal for Parks Canada, 16pp.
- Fargey, P.; Tuckwell, J.; Carlson, J.; Bristol, B.; Davis, S.; Scissons, R.; Piwowar, A; Wiltse, E.; Forrest, S. and K. Murphy. 2004. Frenchman River-Bitter Creek Conservation Site Plan. In Smith Fargey, K. ed. *Shared Prairie-Shared Vision: The Northern Mixed Grass Transboundary Initiative*. Conservation Site Planning Workshop Proceedings and Digital Atlas. Regina, SK: Canadian Wildlife Service, Environment Canada. CD-ROM.
- Farson, S. 2006. Rethinking the North American Frontier After 9/11. *Journal of Borderlands Studies* 21(1): 23-45.
- Fitzsimmons, A.K. 1998. Why a Policy of Federal Management of Ecosystems is a Bad Idea. *Landscape and Urban Planning* 40(1-3): 195-202.
- Fitzsimmons, A.K. 1996. Sound Policy or Smoke and Mirrors: Does Ecosystem Management

- Make Sense? *Water Resources Bulletin* 32(2): 217-227.
- Forrest, S.; Martin, B.; Bruyneel, S.; McAdam, S.; Fargey, P.; Carlson, J. and J. Nicholson. 2010. *Cross-Border Conservation Initiatives*. Crossing the Medicine Line Network. 2pp. (poster).
- Forrest, S.C.; Strand, H.; Haskins, W.H.; Freese, C.; Proctor, J. and E. Dinerstein. 2004. *Ocean of Grass: A Conservation Assessment for the Northern Great Plains*. Northern Plains Conservation Network and Northern Great Plains Ecoregion. Bozeman, MT: WWF-US.
- Fort Belknap Indian Community (FBIC). 2003. *Fort Belknap Indian Community Official Website*. Available: www.ftbelknap-nsn.gov. Accessed February 18, 2010.
- Fort Peck Tribes (FPT). 2009. *Fort Peck Tribes*. Available: www.fortpecktribes.org. Accessed February 18, 2010.
- Gauthier, D.A.; Lafon, A.; Toombs, T.; Hoth, J. and E. Wiken. 2003. *Grasslands: Toward a North American Conservation Strategy*. Canadian Plains Research Center, University of Regina, Regina, Saskatchewan, and Commission for Environmental Co-operation, Montreal, Quebec, Canada.
- Grumbine, R.E. 1997. Reflections on "What is Ecosystem Management?" *Conservation Biology* 11(1): 41-47.
- Grumbine, R.E. 1994. What is Ecosystem Management? *Conservation Biology* 8(1): 27-38.
- Gunderson, L.H. and C.S. Holling. (eds). 2002. *Panarchy: Understanding Transformations in Human and Natural Systems*. Washington, DC: Island Press.
- Gunningham, N.; Grabosky, P. and D. Sinclair. 1998. *Smart Regulation: Designing*

- Environmental Policy*. Oxford, UK: Clarendon Press; New York: Oxford University Press.
- Hanson, J. 2001. A Phenomenological Case for the Family Farmer as an Environmental Steward. *Great Plains Research* 11(2): 347-360.
- Harley, J.B. 1992. Rereading the Maps of the Columbian Encounter. *Annals of the Association of American Geographers*. The Americas before and after 1492: Current Geographical Research 82(3): 522-536.
- Harley, J.B. 1989. Deconstructing the map. *Cartographica* 26: 1-20.
- Harrington, C., Curtis, A. and R. Black. 2008. Locating communities in natural resource management. *Journal of Environmental Policy and Planning* 10(2) 199–215.
- Hartig, J.H.; Zarull, M.A.; Heidtke, T.M. and H. Shah. 1998. Implementing Ecosystem-Based Management: Lessons from the Great Lakes. *Journal of Environmental Planning and Management* 41(1): 45-75.
- Harvey, D. 1996. *Justice, Nature and the Geography of Difference*. Cambridge, MA: Blackwell Publishers.
- Hayter, R. 2003. “The War in the Woods”: Post-Fordist Restructuring, Globalization, and the Contested Remapping of British Columbia’s Forest Economy. *Annals of the Association of American Geographers* 93(3): 706-729.
- Hildebrand, L.P.; Pebbles, V. and D.A. Fraser. 2002. Cooperative Ecosystem Management

- Across the Canada-US Border: Approaches and Experiences of Transboundary Programs in the Gulf of Maine, Great Lakes, and Georgia Basin/Puget Sound. *Ocean and Coastal Management* 45(6-7): 421-457.
- Hurley, P.T. and P.A. Walker. 2004. Whose vision? Conspiracy theory and land-use planning in Nevada County, California. *Environment and Planning A* 36(9): 1529-1547.
- Jepson, P. and R.J. Whittaker. 2002. Ecoregions in Context: a Critique with Special Reference to Indonesia. *Conservation Biology* 16(1): 42-57.
- Johnstone, B. 2008. *Sale of Drilling Rights Breaks Sask. Record*. Regina Leader-Post, Thursday February 14, 2008. Available: www.canada.com. Accessed: 20 June 2008.
- Johnston, R.J.; Gregory, D.; Pratt, G.; Watts, M. (eds.) and D.M. Smith (consultant editor). 2000. *The Dictionary of Human Geography*. Malden, MA: Blackwell Publishers.
- Jones, D.C. 2002. *Empire of Dust: Settling and Abandoning the Prairie Dry Belt* Calgary: University of Calgary Press.
- Jones, M.L. and W.W. Taylor. 1999. Challenges to the implementation of the ecosystem approach in the Great Lakes basin. *Aquatic Ecosystem Health and Management* 2(3):249-254.
- Kitchin, R. and M. Dodge. 2007. Rethinking maps. *Progress in Human Geography* 31(3): 331-344.
- LaDow, B. 2001. *The Medicine Line: Life and Death on a North American Borderland*. New York and London: Routledge.
- Lamont, A. 2006. Policy Characterization of Ecosystem Management. *Environmental*

- Monitoring and Assessment* 113(1-3): 5-18.
- Lee, K.N. 1993. *Compass and Gyroscope: Integrating Science and Politics for the Environment*. Washington, DC and Covelo, CA: Island Press.
- Libecap, G.D. and Z.K. Hansen. 2002. "Rain Follows the Plow" and Dryfarming Doctrine: The Climate Information Problem and Homestead Failure in the Upper Great Plains, 1890-1925. *The Journal of Economic History* 62(1): 86-120.
- Livingstone, D.N. 2005. Science, text and space: thoughts on the geography of reading. *Transactions of the Institute of British Geographers* 30: 391-401.
- Loughlin, J. 2004. The 'Transformation' of Governance: New Directions in Policy and Politics. *Australian Journal of Politics and History* 50(1): 8-22.
- Low, N. and B. Gleeson. 1998. *Justice, Society, and Nature: An Exploration of Political Ecology*. London: Routledge.
- Lunstrum, E. 2008. Mozambique, Neoliberal Land Reform, and the Limpopo National Park. *Geographical Review* 98(3): 339-355.
- Malone, C.R. 2000. Ecosystem management policies in state government of the USA. *Landscape and Urban Planning* 48(1-2): 57-64.
- McCarthy, J. 2002. First World political ecology: lessons from the Wise Use movement. *Environment and Planning A* 34(7):1281-1302.
- McCay, B.J. 2002. Emergence of Institutions for the Commons: Contexts, Situations and Events. In Ostrom, E.; Dietz, T.; Dolšák, N.; Stern, P.C.; Stonich, S. and E.U. Weber (eds.) *The Drama of the Commons*. Washington, DC: National Academy Press: 361-402.

- McKinsey, L.S. and V. Konrad. 1989. *Borderlands Reflections: The United States and Canada*.
Orono, ME: Borderlands.
- McManus, S. 2005. *The Line Which Separates: Race, Gender, and the Making of the Alberta-Montana Borderlands*. Edmonton: University of Alberta Press.
- Mitchell, B. 2002. *Resource and Environmental Management*. 2nd ed. Toronto: Pearson Education Limited.
- Monmonier, M. 1996. *How to Lie with Maps*. 2nd ed. Chicago and London: University of Chicago Press.
- Moore, A. 2008. Rethinking scale as a geographical category: from analysis to practice. *Progress in Human Geography* 32(2):203-225.
- Morris, P.S. 1999. Regional Ideas and the Montana-Alberta Borderlands. *The Geographical Review* 89(4): 469-490.
- Neumann, R.P. 2005. *Making Political Ecology*. London: Hodder Arnold.
- Newman, D. 2006. The Lines that Continue to Separate Us: Borders in our 'Borderless' World. *Progress in Human Geography* 30(2): 143-161.
- Newman, D. 2003. On Borders and Power: A Theoretical Framework. *Journal of Borderlands Studies* 18(1): 13-26.
- Newman, D. and A. Paasi. 1998. Fences and neighbours in the postmodern world: boundary narratives in political geography. *Progress in Human Geography* 22(2): 186-207.
- Nicol, H. 2006. The Canada-US Border After September 11th: The Politics of Risk

- Constructed. *Journal of Borderlands Studies* 21(1): 47-68.
- Norman, E.S. and K. Bakker. 2009. Transgressing Scales: Water Governance Across the Canada-US Borderland. *Annals of the Association of American Geographers* 99(1): 99-117.
- Norman, E. and K. Bakker. 2004. *Transboundary Groundwater Governance: An Annotated Bibliography*. Department of Geography, University of British Columbia. Available: www.geog.ubc.ca/~bakker/transbiblio.pdf.
- Ottoson, H.W.; Birch, E.M; Henderson, P.A. and A.H. Anderson. 1966. *Land and People of the Northern Plains Transition Area*. Lincoln: University of Nebraska Press.
- Parks Canada. 2009. *Grasslands National Park of Canada Proposed Management Plan for Public Consultation*. Available: www.pc.gc.ca/~media/pn-np/sk/grasslands/plan2009-06-10_e.ashx. Accessed October 21, 2009.
- Parks Canada. 2008. *Grasslands National Park of Canada: State of the Park Report 2007*. Available: www.pc.gc.ca/~media/pn-np/sk/grasslands/REP_SPR_e.ashx. Accessed January 19, 2010.
- Paulson, S.; Gezon, L.L. and M. Watts. 2003. Locating the Political in Political Ecology: An Introduction. *Human Organization* 62(3): 205-217.
- Pedynowski, D. 2003. Prospects for Ecosystem Management in the Crown of the Continent Ecosystem, Canada-United States: Survey and Recommendations. *Conservation Biology* 17(5): 1261-1269.
- Peet, R. and M. Watts (eds.). 2004. *Liberation Ecologies: Environment, Development,*

- Social Movements*. 2nd ed. London: Routledge.
- Perkins, C. 2003. Cartography: mapping theory. *Progress in Human Geography* 27(3): 341-351.
- Pickles, J. 2004. *A History of Spaces: Cartographic reason, mapping and the geo-coded world*. London and New York: Routledge.
- Pickles, J. 1992. Texts, Hermeneutics and Propaganda Maps. In Barnes, T.J. and J.S. Duncan (eds.). 1992. *Writing Worlds: Discourse, text and metaphor in the representation of landscape*. London and New York: Routledge: 193-230.
- Poirier, T.; Bircham, D.; Jones-Hole, J.; Slade, A. and S.A. Vogelaar. (eds). 2005. *A Voice of Her Own*. Calgary: University of Calgary Press.
- Quinn, M.S. and J.C. Theberge. 2004. Ecosystem-Based Management in Canada: Trends From a National Survey and Relevance to Protected Areas”, in Munro, N.W.P.; P. Deardon; T.B. Herman; K. Beazley; and S. Bondrup-Neilson (eds). 2004. *Making Ecosystem-Based Management Work: Connecting Managers and Researchers*. Proceedings of the Fifth International Conference on Science and Management of Protected Areas, 11-16 May 2003, Wolfville, NS, Canada: SAMPAA. Available: www.sampaa.org/pdf/ch8/8.2.pdf. Accessed: 5 January 2010.
- Reed, M.G. and S. Bruyneel. 2010. Rescaling Environmental Governance, Rethinking the State: a Three-Dimensional Review. *Progress in Human Geography*. *Progress in Human Geography Online First*: January 26, 2010, DOI: 10.1177/0309132509354836.
- Reed, M.G. 2007. Uneven environmental management: a Canadian comparative political

- ecology. *Environment and Planning A* 39(2): 320-338.
- Reed, M.G. and B. Mitchell. 2003. Gendering Environmental Geography. *The Canadian Geographer* 47(3):318-337.
- Riley, J.L.; Green, S.E. and K.E. Brodribb. 2007. *A Conservation Blueprint Canada's Prairies and Parklands*. Toronto: Nature Conservancy of Canada. 226pp. + DVD-ROM.
- Robbins, P. 2004. *Political Ecology: A Critical Introduction*. Malden, Massachusetts: Blackwell Publishing.
- Robbins, P. 2002. Obstacles to a First World Political Ecology: Looking Near Without Looking Up. *Environment and Planning A* 34(8): 1509-1513.
- Rossum, S. and S. Lavin. 2000. Where Are the Great Plains? A Cartographic Analysis. *Professional Geography* 52(3): 543-552.
- Sadler, B. 1993. Shared Resources, Common Future: Sustainable Management of Canada-United States Border Waters. *Natural Resources Journal* 33(2): 375-396.
- Schwartz, A.M. 2000. The Canada-US Relationship at the Turn of the Century. *The American Review of Canadian Studies* 30(2): 207-226.
- Schwartz, M.A. 1997. Cross-Border Ties Among Protest Movements: The Great Plains Connection. *Great Plains Quarterly* 17(2): 119-130.
- Singh, J. and P. Ganster. 2003. Transboundary Environmental Co-operation: A Conversation on Issues in Research and Methodologies. *Journal of Borderlands Studies* 18(1): 51-60.
- Singleton, S. 2002. Collaborative Environmental Planning in the American West: The

- Good, the Bad and the Ugly. *Environmental Politics* 11(3): 54-75.
- Slocombe, D.S. 1998a. Lessons from experience with ecosystem-based management. *Landscape and Urban Planning* 40(1-3): 31-39.
- Slocombe, D.S. 1998b. Defining Goals and Criteria for Ecosystem-Based Management. *Environmental Management* 22(4):483-493.
- Slocombe, D.S. 1993. Implementing Ecosystem-Based Management. *Bioscience* 43(9): 612-622.
- Smith Fargey, K. (ed.). 2004a. *Shared Prairie-Shared Vision: The Northern Mixed Grass Transboundary Initiative*. Conservation Site Planning Workshop Proceedings and Digital Atlas. Regina, SK: Canadian Wildlife Service, Environment Canada. CD-ROM.
- Smith Fargey, K. 2004b. Introduction. In Smith Fargey, K. (ed.). *Shared Prairie-Shared Vision: The Northern Mixed Grass Transboundary Initiative*. Conservation Site Planning Workshop Proceedings and Digital Atlas. Regina, SK: Canadian Wildlife Service, Environment Canada. CD-ROM.
- Stanley, T.R. (Jr.). 1995. Ecosystem Management and the Arrogance of Humanism. *Conservation Biology* 9(2): 255-262.
- Statistics Canada. 2006. *Community Profiles from the 2006 Census*. Available: <http://www12.statcan.ca/census-recensement/2006/dp-pd/prof/92-591/index.cfm?Lang=E>. Accessed February 18, 2010.
- Stefanick, L. 2009. Transboundary Conservation: Security, Civil Society and Cross-Border Collaboration. *Journal of Borderlands Studies* 24(2): 15-37.

- Stegner, W.E. 1962. *Wolf Willow: A History, a Story and a Memory of the Last Plains Frontier*.
New York: Penguin Putnam Inc.
- Stonich, S.C. 1998. Political Ecology of Tourism. *Annals of Tourism Research* 25(1): 25-54.
- Sullivan, P.; Hellerstein, D.; Hansen, L.; Johansson, R.; Koenig, S.; Lubowski, R.; McBride, W.;
McGranahan, D.; Roberts, M.; Vogel, S. and S. Bucholtz. 2004. *The Conservation
Reserve Program: Economic Implications for Rural America*. United States
Department of Agriculture Economic Research Service. Agricultural Economic Report
Number 834. 112pp. Available: www.ers.usda.gov/publications/aer834.pdf.
- Stott, P. and S. Sullivan (Eds.). 2000. *Political ecology: Science, myth and power*.
London: Arnold.
- Szaro, R.C.; W.T. Sexton, and C.R. Malone. 1998. The emergence of ecosystem management
as a tool for meeting people's needs and sustaining ecosystems. *Landscape and Urban
Planning* 40(1-3): 1-7.
- The Nature Conservancy (TNC), Northern Great Plains Steppe Ecoregional Planning Team.
1999. *Ecoregional Planning in the Northern Great Plains Steppe*. The Nature
Conservancy.
- Thomas, J.W. 1996. Forest Service Perspective on Ecosystem Management. *Ecological
Applications* 6(3): 703-705.
- United States Department of the Interior: Bureau of Land Management, Montana/Dakotas (US
DOI-BLM MT) 2009. *What We Do*. Available: <http://www.blm.gov/mt/st/en.html>.
Accessed October 21, 2009.

- Waiser, B. 2005. *Saskatchewan: A New History*. Calgary: Fifth House Limited.
- Walker, P.A. and L. Fortmann. 2003. Whose landscape? A political ecology of the 'exurban' Sierra. *Cultural Geographies* 10: 469-491.
- White, R.P.; Murray, S. and M. Rohweder. 2000. *Pilot Analysis of Global Ecosystems: Grassland Ecosystems*. Washington, DC: World Resources Institute. Available: http://pdf.wri.org/page_grasslands.pdf. Accessed October 21, 2009.
- Widdis, R.W. 2006. *Voices from Next Year Country: An Oral History of Rural Saskatchewan*. Regina: Canadian Plains Research Centre.
- Widdis, R.W. 1997. Borderland and Interaction in the International Region of the Great Plains: An Historic-Geographic Perspective. *Great Plains Research* 7(1): 103-137.
- Wikramanayake, E.; Dinerstein, E.; Loucks, C.; Olson, D.; Morrison, J.; Lamoreux, J.; McKnight, M. and P. Hedao. 2002. Ecoregions in ascendance: Reply to Jepson and Whittaker. *Conservation Biology*, 16(1): 238-243.
- 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.
- XE: The World's Favourite Currency Site. No Date. *Universal Currency Converter*. Available: www.xe.com/ucc. Accessed March 15, 2009.
- Yaffee, S.L. 1999. Three Faces of Ecosystem Management. *Conservation Biology* 13(4): 713-725.

CHAPTER 2

“DISTURBING AS A HAIR IN BUTTER”: PERCEPTIONS OF THE 49TH PARALLEL AND THE NORTHERN GREAT PLAINS BORDERLAND OVER TIME

ABSTRACT

Historical and contemporary descriptions of the Saskatchewan-Montana border and its adjacent lands portray this area as a region of contradiction. This paper uncovers two persistent narratives that describe the dichotomy of this borderland. First, the 49th parallel is described as an ‘imaginary’ line, yet it creates a very real division between two distinct nations and their landscapes and people. Therefore, while many things are the ‘same’ across the border, others are very ‘different’. Second, the Northern Plains borderland simultaneously inspires sentiments of love or affinity, and feelings of antagonism. These are expressed, respectively, as paeans to the region’s beauty and tranquility, and accounts of the isolation, desolation, and loneliness that are inspired by its remoteness, extreme climate, and its history of agricultural failures.

This paper deconstructs historical and contemporary texts, including maps, journal entries, and academic and creative literatures. It compares these sources with insights obtained from interviews with people currently living and working in the region to document the persistence of the similarity-difference and affinity-antagonism narratives over time. I argue that the power of these borderland narratives lies in their deep roots in the region’s pre-European settlement history, residents’ multigenerational linkages to the land, and the spiritual elements of the landscape. They have become ensconced in the contemporary regional consciousness through sustained patterns of human-environment interactions, expressed through engagement in and exposure to agricultural work, rural residency, and local literature. Both narratives are useful tools for informing borderlands theory and research, and for advancing scholarly understanding of regional cross-border relationships in the Northern Great Plains.

2.1 INTRODUCTION

Historical and contemporary descriptions of the Canada-US border between the province of Saskatchewan and the state of Montana, and its adjacent lands, portray this area as a region of contradiction. The Northern Great Plains borderland dichotomy is twofold. First, the 49th parallel is described as an ‘imaginary’ and ‘artificial’ line; yet it creates a very real division of the landscape and its people. As such, the borderland is simultaneously an area of cross-border ecological, economic, and socio-cultural similarity; and it is a zone in which two distinct groups, Canadians and Americans, are separated by a political border and are subject to different political and regulatory systems. Second, the Northern Great Plains borderland inspires sentiments of love or affinity, in which people are close to nature, experience solace and peace, and witness true beauty. However, the regional landscape also provokes feelings of antagonism, which manifest as expressions of isolation, desolation, and loneliness, inspired by the region’s remoteness, the emptiness of the landscape, its extreme climate, and its history of agricultural failures.

This paper deconstructs historical and contemporary texts, such as maps, journal entries, and academic and creative literatures. It compares these sources with insights obtained from interviews with people currently living and working in the region to document the persistence of the similarity-difference and affinity-antagonism narratives associated with the Northern Great Plains borderland over time. I argue that the power of these borderland narratives lies in their deep roots in the region’s pre-European settlement history – specifically the time when the region’s Aboriginal inhabitants hunted on a borderless landscape; residents’ multigenerational

linkages to the land; and the spiritual elements of the landscape. These narratives have become enconced in the contemporary regional consciousness through sustained patterns of human-environment interactions, expressed through engagement in and exposure to agricultural work, rural residency, and local literature. Both narratives are useful tools for informing borderlands theory and research, and for advancing scholarly understanding of regional cross-border relationships in the Northern Great Plains.

2.2 APPROACH AND STUDY AREA

This paper draws conceptually and theoretically upon the borderlands thesis, which holds that a 'borderland' is "a region jointly shared by two nations with common social characteristics in spite of the political boundary between them", in which, "...shared characteristics within the region set it apart from the country that contains it: residents share properties of the region, and this gives them more in common with each other than with members of their respective dominant cultures" (McKinsey and Konrad 1989: 4). Therefore, in areas adjacent to an international border, residents might not see themselves as being "complete citizens" of their home state, as they may identify more with the international neighbours close to them than with the more geographically distant residents of their own country (McKinsey and Konrad 1989:3; see also Newman 2003). Natural conditions conducive to the development of such a borderland exist in the Northern Great Plains. This is a region where there are no distinguishable natural features demarcating the international border, and there is a shared

human past based on historical, environmental, and social phenomena, such as the Dust Bowl and the Aboriginal buffalo hunt (Morris 1999; McKinsey and Konrad 1989).

This study focuses on the border between Saskatchewan (Canada) and Montana (United States), and its adjacent lands. Specifically, this research is set in the Frenchman River-Bitter Creek (FRBC) Conservation Area (Figure 2.1),²¹ which includes the Frenchman River and Grasslands National Park areas of southwestern Saskatchewan, and the Bitter Creek-Frenchman portion of Montana's Northwestern Glaciated Plains (Smith Fargey 2004). While the boundaries of the study area are expanded and contracted by the scope of the academic and creative literatures consulted, attention is focused specifically on the study area through insights obtained from interviews with those living and working in the FRBC region.

In this paper, I reveal two recurrent and robust narratives informing borderlands thought in the Northern Great Plains. In the two substantive sections of this paper, the persistence of each of these narratives is traced over time. The first section follows the narrative of concurrent similarity and difference across the 49th parallel from the pre-European settlement period to the present time. This narrative encompasses both ecological (landscape and climatic) and human (political, cultural, social and linguistic) similarities and differences between Saskatchewan and Montana. The second section pursues the narrative of simultaneous

²¹ According to Smith Fargey (2004), the FRBC Site was defined in 2003-2004 through a transboundary, multi-jurisdictional and multi-partner Conservation Planning Process, the Northern Mixed Grass Transboundary Conservation Initiative (NMGTCI). The NMGTCI involved governmental, nongovernmental, and academic partners from the Canadian provinces of Alberta and Saskatchewan, and the American state of Montana. The FRBC area is the current area of transboundary conservation research and activity for Environment Canada, Parks Canada, and Grasslands National Park, and their partner institutions both provincially and across the border in Montana (Fargey 2005; Smith Fargey 2004). It is also an area of focus for informal transboundary research networks, such as the NMGTCI's successor, the Crossing the Medicine Line Network (CMLN) (Forrest *et al.* 2010; Parks Canada, 2009, 2008; Fargey 2005).



Figure 2.1: The FRBC Region

affinity and antagonism inspired by the Saskatchewan-Montana borderland. The narrative of affinity includes reflections upon the morality and honour associated with ranch work; the freedom associated with being outdoors; and the aesthetic, spiritual, and artistic values of the remote grassland environment. The antagonism narrative interrogates the flip-side of the affinity narrative. It examines the negative aspects of remoteness and hard work: loneliness; desolation; the inherent difficulties of making a living through agriculture; and living at the mercy of an unforgiving climate. The affinity-antagonism narrative I uncover is unique in two ways. First, it is especially apparent in local creative literature, both as a source of inspiration and as a subject of reflection and analysis. Second, it highlights the differential roles associated with gender, and how these have – or have not – changed over time. I conclude by assessing the resiliency of these narratives over time, and by commenting on how these narratives may inform scholarly theorization and understanding of the regional borderland culture of the Northern Great Plains.

2.3 METHODOLOGY

This study is the product of multiple qualitative methods. It combines both primary and secondary sources, including academic and creative literatures and unconventional ‘texts’ such as maps. The academic literature is divided into two streams: scholarly articles and books authored on the subjects of border studies and theory, the Canada-US border and relationship over time, and the borderlands of the Northern Great Plains; and antecedent research conducted in the Northern Great Plains borderland, including published oral histories and interviews with borderlands residents (e.g. Widdis 2006; Poirier *et al.* 2005).

The academic literature noted the importance of local creative literature as a subject of analysis in understanding lives and livelihoods in borderlands, as “with their cameras and in their written words, borderland residents revealed the constant push and pull of nature on their lives” (LaDow 2001: 109). For this reason, local creative literature was suggested to be “...probably the best avenue to address the question of regional borderlands cultures” (McKinsey and Konrad 1989: 20). The Plains-Prairies borderland in particular was noted to frequently be the subject of comparative literature (McKinsey and Konrad 1989). Selected creative literature, including poetry, fiction, autobiography, and autobiographical fiction, written by authors living in and/or reflecting upon, the Northern Great Plains, was examined. The analysis of creative literature began with the examination of texts cited in the academic literature (e.g. Stegner’s 1962 work of autobiographical fiction *Wolf Willow*) and contained in anthologies of Plains-Prairies writing (e.g. Bennett’s 2001 anthology of *Cowgirl Poetry*). It was expanded as the research progressed, through a form of snowball sampling, to include books found during site visits (e.g. Poirier’s 1998 self-reflexive travelogue of her walks along *Rock Creek*, found in the Friends of Grasslands National Park bookstore in Val Marie, Saskatchewan) and works recommended by other academics and local residents (e.g. Bircham’s 2006 poetry collection *Where Blue Grama Grows* and Butala’s autobiographical novel, *The Perfection of the Morning: An Apprenticeship in Nature*, reprinted in 2004).

Maps created by early regional explorers were examined as unconventional, graphic or cultural ‘texts’ (Aitken 2005; Doel 2003; Barnes and Duncan 1992; Pickles 1992; Harley 1989). Map analysis was supplemented by these explorers’ notes and journals, notes from the 1872-

1876 Boundary Survey Party, and the reflections and interpretations of these contained in conventional scholarly publications. The process of historical map selection began with the most famous regional expeditions (e.g. the Lewis and Clark and Palliser expeditions), and was expanded to include earlier (e.g. the Soulard, Arrowsmith and King maps, and maps from the expeditions of Alexander Mackenzie) and later (e.g. from the expeditions of botanist John Macoun) maps and journals as historical understanding of the region was advanced. Maps were subject to hermeneutic analyses (Doel 2003; Pickles 1992), with attention to their origins, their intended meanings at the time of creation, and their received meanings at the time of analysis (Kitchin and Dodge 2007; Aitken 2005; Pickles 2004, 1992).

To provide contemporary insights about the border and the borderlands, 30 in-depth, semi-structured interviews were conducted from June 2007-May 2008 with key informants living and working in the Saskatchewan-Montana borderland.²² These key informants include public agency (federal and provincial/state government) personnel, employees from environmental nongovernmental organizations (ENGOS), and agricultural producers²³ on both sides of the border in the FRBC region. Interviews were transcribed verbatim and analyzed through deductive and inductive coding methods using the qualitative data analysis program,

²² Of the 30 interviews completed, 19 were conducted in Saskatchewan and 11 in Montana. This does not, however, reflect the total number of interview participants, as several interviews were conducted with more than one person. Group interviews were conducted on large, family-operated ranches and in public agencies and ENGOS when several people with similar mandates but different roles expressed interest in participating in this project.

²³ In this region, it is important to distinguish between 'farmers' and 'ranchers' within the broader category of 'agricultural producers'. 'Rancher' describes a producer whose primary focus is cattle and beef production, whereas 'farmer' denotes a producer focused on crop, primarily cereal, cultivation (see Jones, 2002; Breen, 1983 for discussion). In this research, the term 'agricultural producer' is used to refer to the ranchers and 'mixed farmers', who produced both livestock and crops, who made up the interview sample for this stakeholder group.

Atlas.ti (after Reed 2007).²⁴ These findings were supplemented by the author's field notes from multiple site visits from 2005-2009.

2.4 THE NARRATIVE OF SIMILARITY AND DIFFERENCE ACROSS THE BORDER

2.4.1 Historical Roots of Similarity and Difference

It was not until after the American purchase of the Louisiana territory in 1803 that it was deemed necessary to define a boundary between the American and British (Canadian) territories west of the Mississippi River (Thomson 1968). Indeed, early maps of the region depict a borderless landscape, not distinguishing between American and British (Canadian) lands.²⁵ More significantly, prior to European settlement, the Northern Plains was home to several Aboriginal groups, many of whom were mobile nations that gathered food and pursued buffalo and other game freely across the 49th parallel (McManus 2005; LaDow, 2001; Manzione 1991).²⁶

The 49th parallel was proposed as the international boundary based on an unratified article in the Treaty of Utrecht claiming it as such; and based on the Hudson's Bay Company's erroneous belief of the time that it marked the division between the Hudson Bay and Great Lakes watersheds (LaDow 2001; Lass 1996). The 1818 London Convention finally codified the 49th

²⁴ To protect the confidentiality of interview participants, each was assigned a pseudonym consistent with his or her gender identity. In the case of group interviews, the pseudonym is assigned to correspond to the gender identity of the dominant participant. Insights and evidence from these interviews are cited by participant pseudonym. To further protect the confidentiality of interview respondents, neither exact interview locations or participant occupations are disclosed. However, respondents' country of origin and general affiliation (e.g. 'agricultural producer' or 'public agency employee') are provided for purposes of contextualizing the comments made.

²⁵ Some examples are the map of the Mackenzie expedition (1789-1793) (Mackenzie 1971), and Soulard's map (1795); King's map (1803); and the maps from the Lewis and Clark expedition (1803-1806) (all reproduced in Moulton 1983).

²⁶ The resident Aboriginal groups included the Blackfoot, Assiniboine, Gros Ventre, Cree, and Sioux, among others.

parallel as the Canada-United States border in international law (LaDow 2001; Thomson 1968). But, it was not until after the American Civil War (1862) and the Confederation of Canada (1867) that the two nations sought to formalize the limits of their national sovereignty (LaDow 2001; Lass 1996). American President Ulysses Grant asked Congress for funds to institute a boundary survey in 1870, and these monies were allocated in 1872 (Thomson 1968). From 1872-1876, British, Canadian and American survey teams traveled along the 49th parallel, marking it with cast iron monuments, stone cairns, or mounds of earth to create a tangible border (LaDow 2001; Thomson 1968).

At the conclusion of the border survey, the 49th parallel had become a concrete entity on the landscape; however, its physical and conceptual legitimacy continued to be questioned by all who encountered it. To the few European settlers in the new borderland, the resident Aboriginal groups, and even among many politicians in Washington and Ottawa, the 49th parallel remained an arbitrary construction that artificially divided a landscape and a people with no other distinguishing features. In particular, the region's Aboriginal peoples continued their historical patterns of migration, which had existed on a borderless landscape, in pursuit of the increasingly scarce buffalo. These groups "...crossed and recrossed the international boundary, often without giving it a thought. 'The Great Spirit makes no lines', an Oglala called the Hero once said. 'The meat of the buffalo tastes the same on both sides of the border'" (LaDow 2001: 42). Aboriginal mobility across the Northern Great Plains undermined the Canadian and American governments' respective claims to their western territories by demonstrating how little control each state had over their side of the 49th parallel. It also undermined the governments' efforts to 'civilize' and

assimilate Aboriginal peoples into Euro-North American society (McManus 2005; Manzione 1991). The shared desires of both nations to control their western lands led to the development of Indian Policies on both sides of the border that differed in execution, yet shared the goals of Aboriginal containment and assimilation.²⁷

While the Aboriginal occupants of the land often elected to ignore the international border in their repeated crossings, they were not ignorant of its existence. In fact, they often used the 49th parallel to their advantage. They recognized that, in dividing the USA and Canada, the border marked a change in legal regimes. The Sioux called the border *pejuta canku* ('medicine road'): in their language, 'medicine' referred to things with magical influences, such as the border they could cross to escape retribution for transgressions committed on the other side (LaDow 2001). The most famous asylum seeker, Sitting Bull, crossed the medicine line with his followers to escape the American military after the Battle of Little Bighorn in 1876.

²⁷ At the end of the Civil War in 1865, American attention shifted to nation building and Manifest Destiny, and the influx of White immigrants to the West informed American Indian Policy. This held that "...it was not 'in accordance with justice and natural right for a small number of persons to monopolize large areas of the earth's surface,' when the land could 'support a population of many thousands of times greater' if it was cultivated" (McManus 2005: 63). The relocation of Aboriginal groups to government-selected Reservations followed; later replaced by a policy that designated portions of a group's original land just large enough to farm as Reservations. Aboriginal resistance to this containment led to the American Indian Wars (see Prucha 1976 and Spence 1999 for an expanded discussion). The pace of European settlement of the Canadian West was slower, and the buffer of time and space between Aboriginal and White populations allowed the Canadian government the illusion of having a more organized and humanitarian approach to Aboriginal Policy. Indeed, the Canadian dealings with Aboriginal peoples on the Prairies were led by the Mounted Police, established and deployed to the borderlands prior to White settlement. By contrast, the Americans were forced to deal with existing or imminent problems through a military-led, crisis-response system (see McManus 2005; LaDow 2001; Manzione 1991 for explanation). The establishment of Reservations was not the only tool of Aboriginal containment and assimilation employed. Starvation became a powerful policy tool; governments on both side of the border viewed the scarcity of buffalo as catalyst for Aboriginal acceptance of sedentary life on Reservations (McManus 2005; Isenberg 2000; Spence 1999). For example, the Canadian Government adopted the policy of starvation to force the Sioux, who had crossed the border into Canada seeking sanctuary, to either return to the United States or to accept Reserves (Manzione 1991). Indeed, "Hunger soon complied, driving the Blackfoot, Cree, and other tribes to reservations as swiftly as bullets drove the Sioux and Nez Percé. If the Canadian order was maintained with less violence, it could be just as brutal" (LaDow 2001:59).

They settled in southern Saskatchewan's Wood Mountain area, located adjacent to the 49th parallel in the present-day FRBC Area, from 1877-1881 (LaDow 2001; Manzione 1991).²⁸

European settlers began to arrive in the Northern Great Plains in increased numbers in the 1890s, making it clear to both the Canadian and American governments that the visibility of the border needed to be improved (Lass 1996). In 1908, the governments concluded a treaty to re-survey and re-monument the border, an effort which reached the Saskatchewan-Montana border in 1911 (Lass 1996). While reinforcing the monuments demarcating the border, this project did not, and could not, create difference between the Canadian and American landscapes and people. The 49th parallel continued to persist as a simultaneously true and false entity in the minds of many politicians and residents. In 1929, Canadian diplomat Hugh Keenleyside agreed, "the boundary between Canada and the United States is a typically human creation: it is physically invisible, geographically illogical, militarily indefensible, and emotionally inescapable (qtd. in McKinsey and Konrad 1989: 30). American writer Wallace Stegner (1962: 83-85), who spent a portion of his childhood on his family's homestead in southwestern Saskatchewan,²⁹ summarized this dichotomy:

We ignored the international boundary in ways and to degrees that would have been impossible if it had not been a line almost completely artificial...Undistinguishable and ignored as it was, artificially as it split a country that was topographically and climatically one, the international boundary marked a divide in our affiliations, expectations, loyalties. Like the pond at the east end of the Cypress Hills, we could flow into either watershed, or into both simultaneously, but we never confused the

²⁸ Their descendants compose the contemporary on- and off-Reserve population at Wood Mountain, Saskatchewan ("Joe", Canadian public agency employee, interview, December 10, 2007; WMCAP No Date).

²⁹ The Stegner homestead was located in Eastend, Saskatchewan, in the RM of White Valley No.49, in the present-day FRBC region.

two...That was the way the 49th parallel, though outwardly ignored, divided us...While I lived on it, I accepted it as I accepted Orion in the winter sky...the boundary which Joseph Kinsey Howard has called artificial and ridiculous was more potent in the lives of people like us than the natural divide of the Cypress Hills had ever been upon the tribes it held apart. For the 49th parallel was an agreement, a rule, a limitation, a fiction, perhaps, but a legal one, acknowledged by both sides...

This narrative of simultaneous similarity across, and difference created by, the border has persisted over time. Corroborating historical evidence in the literature, half of those interviewed (fifteen of thirty interview respondents) referred to the border as an ‘imaginary’, ‘artificial’, ‘arbitrary’, or ‘dotted’ line; and many of those interviewed also spoke of the differences represented and created by the border. The sections that follow describe the contemporary experiences of similarity and difference across the Saskatchewan-Montana border. The narrative of similarity and difference across the border is explored in ecological terms, focusing on such elements as landscape and climate; and in human terms, considering political, economic, cultural and social attributes.

2.4.2 Ecological Similarity and Difference

Historian Beth LaDow (2001: 3) vividly described the medicine line as an unintuitive border that artificially divided a uniform landscape:

Natural boundaries are absent. There is no river here, no precipice, no mountain divide, no indentation or canyon. The prairie stretches seamlessly outward, as if the wind were blowing it toward the Rockies. Straddling the border, feet between cacti and clumps of gray-green sage, one conjures other borders with imposing names – iron curtains, great

walls, grand rivers, Pyrenees. Those are borders where history has physical shape, borders that define people and their enemies. Not so here.

Indeed, in ecological terms, the notion of ‘similarity’ across the Saskatchewan-Montana border is particularly strong. Only three of thirty interviewees explicitly referred to biophysical differences across the Saskatchewan -Montana border, focusing primarily on differing climates and divergences in soil characteristics (“Luke”, Canadian public agency employee, interview, February 7, 2008; “Lisa”, Canadian public agency employee, interview, December 5, 2007). The remaining interviewees emphasized ecological similarity and connectivity across the border. Cross-border ecological similarity was emphasized in three key ways: with respect to the appearance and attributes of the landscape; with respect to the movements of wildlife; and with respect to the existence of common or shared environmental issues. First, similarity in the appearance of the landscape was described by Stegner (1962: 82-83):

We could not be remarkably impressed with the physical differences between Canada and the United States, for our lives slopped over the international boundary every summer day. Our plowshares bit into Montana sod every time we made the turn at the south end of the field...the mountains whose peaks drew my wistful eyes on July days were the Bearpaws, down the Milk River. For all my eyes could tell me, no Line existed.

Several interview participants corroborated the artificiality of the border and the commonality of the landscape it divided; for example, claiming, “you can drive across the border here and not even know it” (“Preston”, Canadian agricultural producer, interview, March 19, 2008).

Interviewees emphasized the existence of common and migratory species, and shared or common habitat conditions across the border, for example, “it’s [the border] just a barbed-wire

fence, so...what wildlife we have they will have the same on the other side” (“Tim”, Canadian agricultural producer, interview, November 28, 2007). Finally it was evident that environmental issues, such as residents’ concerns about the spread of invasive weed species, oil and gas developments and their impacts, and climate change also transcended the 49th parallel. One Canadian explained:

as you drive across the border in Montana, or North Dakota, you don’t get to a point where there’s a line and you can say, ‘okay, Saskatchewan’s got this and that and Montana...does not have that’. I perceive them to be very, very similar...borders were drawn arbitrarily for political reasons, but the ecosystems have been there a lot longer” (“Daniel”, Canadian public agency employee, interview, December 20, 2007).

In this vein, one Canadian rancher noted that “...cows are the same on both sides...the diseases are the same” (“Neil”, Canadian agricultural producer, interview, March 18, 2008). This statement reflects both cross-border economic ties (e.g. the cross-border cattle trade), and shared vulnerability to issues and problems that transcend the border (e.g. the movement of cattle infected with bovine spongiform encephalopathy (BSE), and ailments such as chronic wasting disease (CWD) in migratory populations of elk and mule deer).

Therefore, in ecological terms, the narrative of similarity and difference across the Saskatchewan-Montana border is heavily weighted in favour of similarity. In the extant academic and creative literature, and in the interviews conducted, the borderland was noted to be a relatively homogenous area in terms of the appearance and characteristics of the landscape. This was emphasized in the interviews by participants’ references to common and migratory

wildlife species, common or shared wildlife habitats, and the uniformity of environmental issues across the border.

2.4.3 Human Similarity and Difference

The narrative of similarity and difference was more balanced when evaluating human similarity and difference, an assessment that involves examining political, economic, cultural, and social characteristics across the border. While most interview participants noted some political, economic, social and/or cultural differences between Canadians and Americans, these differences were often noted to be minor. For example, "...Canadian culture and American culture probably is (*sic*) less different between Alberta and Saskatchewan and Montana, North Dakota, than say, some of the eastern provinces, but still different" ("Mark", American ENGO employee, interview, May 8, 2008).

In the interviews conducted, the consideration of social and cultural similarity and difference focused on language and sport. Language was represented, first, as a common element between Saskatchewan and Montana. For example, a Canadian agricultural producer claimed "it [the border] don't exist...it's no different. My American neighbours are the same as my Canadian neighbours. Talk the same language. Drink the same beer" ("Neil", Canadian agricultural producer, interview, March 18, 2008). Similarly, an American agricultural producer recalled:

It's so funny. We were coming down the river with a guy who worked on the ranch here...he'd been here about a month. He was, 'what's a Canadian look like?', he asked, so Bob said, 'well, they're no different

than we are', you know, 'they don't speak a different language or anything'. He says, 'I was in the café down there yesterday, and I think I saw one!' ("William", American agricultural producer, interview, May 6, 2008).

However, linguistic differences across the border, in the form of different dialects, terminologies, and slang, were highlighted in the literature:

That was the way the 49th parallel, though outwardly ignored, divided us. It exerted uncomprehended pressures upon affiliation and belief, custom and costume. It offered us subtle choices even in language (we stooked our wheat; across the Line they shocked it), and it lay among our loyalties as disturbing as a hair in butter (Stegner 1962: 83).

Several interview participants concurred, noting differences in Canadian and American vernacular ("Kate", American ENGO employee, interview, December 11, 2007; "George", American public agency employee, interview, February 5, 2008). Specifically, American participants pointed to Canada's recognition of French as an official language as a point of linguistic divergence: "the way you knew you were in Canada, when you go out onto one of those roads, was the telephone signs were in French. You know, the writing markers were in French" ("William", American agricultural producer, interview, May 6, 2008).

Interviewees discussed sport as a point of divergence between residents of the two countries. One Canadian mused, "culturally, how different are we?...we're hockey players, and they're basketball players. But, other than that, there are an awful lot of similarities" ("Alexander", Canadian public agency employee, interview, November 27, 2007). Similarly, an American noted, "hockey is becoming a bigger sport that's in the US, but when I was growing

up, all you'd have to do is go across the border and there were hockey rinks in every town, and you'd have to drive a long ways in Montana to find a hockey rink" ("George", American public agency employee, interview, February 5, 2008).

While language and sport were recognized as being points of minor sociocultural divergence across the border, economic and social concerns were noted to transcend the international border. For example:

All the way from Val Marie, Saskatchewan to the Badlands Park in South Dakota, you know what? We all have the same problems. We are losing our young people out of the communities ...with all the government issues and whatnot, and the cheap food policies, we're all struggling financially. But we're all the same people. We sat down in the morning and had breakfast...with these ranchers in the Dakotas...I felt like I was sitting in a café in Val Marie...We are all identical people dealing with ...the weather, main topic: "man, it's been dry"...we've got similar concerns all the way down...It's a hateful thing, this border ("Jerry", Canadian agricultural producer, interview, December 13, 2007).

Political and philosophical differences across the border were superimposed on this human similarity. For example, one Canadian agricultural producer claimed, "people are the same, one side of the border or the other...we come from down there, originally, and it ain't no different. My cousins are no different than we are...but, I mean, the rules that we both live under are quite a bit different" ("Neil", Canadian agricultural producer, interview, March 18, 2008).

And, it was suggested that the differences that were perceived by people on either side of the Line were created and imposed by the border, rather than being inherent to the people themselves. This was evident in Thelma Poirier's 2001 interview with Tammy Burgess, an American woman who moved to Canada after marrying a Saskatchewan rancher:

When I finished school, I worked in Plentywood [Montana] and lived with my sister. That's when I met Michael [her husband]. I loved to dance and was out at one of the nightclubs with my brothers and friends, and Michael and I were introduced. We were very surprised to find out that we grew up so close to each other, just four miles apart. That was one of the biggest surprises because when I was growing up, the Canadian border was the Canadian border, it wasn't something that you took lightly...I was quite surprised to find out they lived so close. Our land is about a mile and a half apart. Our houses are about four miles apart. Any place else in the world, if you lived within four miles of somebody you would know them. You would probably have them for tea or coffee, but we didn't because this was along the Canadian border (qtd. in Poirier *et al.* 2005: 353-355).

The evidence presented here suggests that, socially, people are very similar across the Saskatchewan-Montana border. In cases where social differences were perceived across the border, such as in Poirier's interview with Mrs. Burgess, these differences were a function of the border, and were not inherent to the people themselves. More differences were evident in the examination of culture across the border. For example, there were differences in local vernacular, and in the sports played and watched. However, such social and cultural differences were generally considered to be minor. In contrast, divergences between the politics and regulations of the two countries were found to be more significant, particularly as these mean that similar problems would be dealt with differently across the border.

2.5 THE NARRATIVE OF AFFINITY AND ANTAGONISM IN THE GRASSLANDS

2.5.1 Historical Roots of Affinity and Antagonism

The second narrative present in both historical and contemporary reflections upon the Northern Great Plains borderland is that of the concurrent affinity and antagonism inspired by

the remote grasslands environment. This narrative appeared to be nested within the two dominant and competing discourses of Great Plains history and development. The first was that of the west as the Great American Desert, symbolizing harsh conditions, desolation and barrenness. The second is that of the west as a 'garden' or the Breadbasket of the World, a fertile region in which the yeoman farmer could work the land in an honest and pure living.

The idea of the Great American Desert was advanced by explorers' climatic and landscape observations. During their expedition of the American West, Lewis and Clark found the area north of the Missouri River to be so "desert and barren", and "astonishingly dry" that "while Jefferson had believed it would take a thousand generations to settle the West", William Clark stated of the lands north of the Missouri, "I do not think it can ever be settled" (LaDow 2001: 2). Across the 49th parallel, Captain John Palliser, the head of the British exploratory party of 1857-1860, became known for his influential observations of the Canadian Prairies. These were recorded on the 1865 map of his expedition, upon which he annotated the "Great Plains" region in present-day Saskatchewan with the words, "Soil poor; herbage scanty. No wood except on moist Northern exposures" (Palliser 1865). Significantly, Palliser observed that in large areas of the southwestern prairies, limited rainfall and scarce water and timber would complicate, if not prohibit, settlement. To this day, this region is known as 'Palliser's Triangle': an area where plentiful crops have been grown since Palliser's time, but that is best known for its extreme climate and potential for catastrophic agricultural failures (Potyondi 1995; Spry 1995; Owrarn 1980; Macoun 1979).

How did it happen, then, that land perceived to be an uninhabitable ‘desert’ during its early explorations came to become a haven for expanding settlement and agricultural interests? North of the 49th parallel, botanist John Macoun traveled to the Canadian Prairies on a series of expeditions in the 1870s and 1880s. He made detailed observations of climate and concluding that Saskatchewan held great promise as an agricultural centre (Potyondi 1995; Macoun 1979). Although in his journals he noted scarcities of water and wood, he continued to extol the region’s agricultural potential. He claimed, “I fearlessly announced that the so-called arid country was one of unsurpassed fertility and that it was literally the ‘garden’ of the whole country” (Macoun 1979: 153). He argued that sufficient rain during the growing season would negate the aridity of the remainder of the year (Potyondi 1995). While some denounced Macoun’s findings as heresy for so drastically diverging from Palliser’s, his views came to be endorsed by the Dominion government.³⁰

As the west on both sides of the 49th parallel was being emptied of Aboriginal inhabitants through treaties confining their populations to Reservations, smallpox and other epidemics, and the demise of the buffalo, it was being filled with European settlers (Manzione 1991; Prucha 1976). In both the United States and Canada, homesteading was a tool to establish national claims in the west by asserting a ‘civilized’, regulated, European presence while restricting Aboriginal mobility and territory (Allen 1991). Euro-North American settlement of the Western

³⁰ It was in the interest of the Dominion government to eradicate the idea of the southern prairies as ‘desert’ to encourage settlement of this region. Moreover, Macoun’s observations were used to support the re-routing of the Canadian Pacific Railway (CPR) along a more southerly course than originally planned, progressing westward from Winnipeg rather than traversing a more northerly route through Edmonton. This decision quelled the CPR Syndicate’s fears of competition with the American Northern Pacific Railroad (Waiser 1985; Owram 1980).

Interior occurred at different times and at different paces on either side of the border.

Homesteading began in the United States with the Homestead Act of 1862, continuing until 1934; in Canada, federal homesteading efforts officially lasted from the passage of the 1872 Dominion Lands Act until 1930, though emigration to the West remained slow until after the initiation of Prime Minister Laurier's settlement policies in 1896 (Potyondi 1995; Allen 1991; Norrie 1975).

On both sides of the border, this homesteading history was intertwined with the histories of the ranching and farming industries in the west. Although the lands of the American and Canadian Wests had sandy soils and an arid climate, and were long observed to be suitable for cattle grazing but not farming (Potyondi 1995; Jones 1985), expansionist thinking on both sides of the border came to be dominated by two erroneous climate theories. The first suggested a causal relationship between cultivation and increased rainfall ('rain follows the plow'); the second, the dryfarming doctrine, held that proper cultivation techniques permitted the soil to retain sufficient moisture to endure droughts (Libecap and Hansen 2002; Potyondi 1995; Jones 1985; Norrie 1975; Smith 1957). These theories contributed to the large-scale replacement of cattle ranching with cereal cultivation around the turn of the twentieth century.³¹

³¹ According to Breen (1983), in the United States, the cattle empire had stretched over the entire Great Plains area by 1876-1878, supported by decades of experience in stock raising and by the Western railroad's stock cars heading to the Chicago markets. The Canadian ranching industry, by contrast, has received relatively little attention in historical writings. Breen (1983) divided the history of the Canadian ranching industry into three time periods: 1874-1896, 1896-1911, and 1911-1922. The first period (1874-1896) was the period of the "open range", in which small cattlemen, followed by large cattle companies under the Macdonald government's gilded grazing lease policy that allowed leases of up to 100,000 acres for 21 years (see also Jones 2002), proved the suitability of the southwestern Canadian prairies for stockraising. During Breen's second period (1896-1911), ranchers faced certain demise. First the Laurier government focused its policies on settling the West; and second, the hard winter of 1906-1907 caused large-scale livestock starvation, with some cattlemen and cattle companies losing up to 80 per cent of

On both sides of the 49th parallel, the ideal of the ‘garden’, holding that the newly fertile West would be the Breadbasket of the World, came to be a symbol of national identity and values, linked with rural, agrarian ideology and theology (Jones 1985; Smith 1957). In the United States, the west existed as a ‘safety valve’ to relieve the poverty, overcrowding, and corruption of the industrializing East; and it served to articulate an idealized conceptualization of the promise of American life: prosperity and fecundity linked to honest and “blissful labor in the earth” (Smith 1957: 138). In Canada, the ideal of the West as a utopian settlement emerged shortly after Canada’s acquisition of Rupert’s Land in 1869 (Davis 1988; Macoun 1979). Advertisements directed at European farmers, extolling the greatness of the Canadian West, promised wealth, prosperity and independence in exchange for hard work, self discipline, and perseverance (see Francis 1989).

However, the ideal of the ‘garden’, for all its power during the settlement period, could not last. Years of drought and crop failure, culminating with the Dust Bowl and Depression of the 1930s, led to a mass exodus from homesteads on both sides of the border (Cunfer 2005; Libecap and Hansen 2002; Bennett and Kohl 2001; Jones 1985; Smith 1957). LaDow (2001: 210-211) reflected:

their herds. This led to the belief that dryland farming, not ranching, could bring guaranteed prosperity. In 1908, a new Dominion Land Act, focused on funding a western railway through the sale of crown lands on the south and central prairie between Moose Jaw, SK and Calgary, AB set aside odd-numbered sections of land for sale to homesteaders. As such, ranchers received notice that the odd-numbered sections of their leases were being withdrawn, and that large expanses of grazing land were being opened for settlement. Furthermore, the Canadian government’s 1911 reciprocity policy was opposed by ranchers, as it brought increasing competition with the American cattle industry. However, during the third period of Canadian ranching history (1911-1922), combined forces of drought, increased beef prices, a new lease system for ranch lands, and other government policy slowed the agrarian tide of the Canadian West, and allowed for recovery of the ranching industry.

In 1859 explorer John Palliser called this region a desert. In 1880 a Canadian botanist declared it a garden. A more obscure man named Angus McMillan, walking through the Milk River valley in 1886 on his way to the western Montana gold fields, allegedly described the treeless plain as ‘terrible country’, and now, after thirty-five years of promotion and optimism, there was an entire countryside emptying of people who finally agreed with him...From the people’s point of view, it mattered little which side of the border they were on. There remained no medicine line across which lay a new hope for the future.

In this passage, she equated the ‘desert’ with feelings of heartbreak and hopelessness and the image of barren land, in contrast to the optimism and opportunity of the ‘garden’. These competing but overlapping discourses remain entrenched in the regional consciousness as sentiments of affinity for the landscape, its beauty, and its opportunities; and as antagonism, in the recognition of the loneliness brought by living in a remote place, and the potential for agricultural failure despite grueling labour. One early account of the split narrative of affinity and antagonism inspired by the Northern Great Plains landscape came from British Captain Albany Featherstonhaugh’s 1873 reflections on his experience with the Boundary Survey Party. Even given the harsh conditions imposed by snowstorms, summer droughts, wild prairie fires, plagues of insects, and the lack of water and fire wood to sustain the parties and their horses (Potyondi 1995; Thomson 1968), Featherstonhaugh “waxed poetic” in his reflection that “despite the many disadvantages of the prairies and plains there is no doubt that persons who have spent much time upon them acquire a sort of attachment to them that more pleasing landscapes fail to inspire” (qtd. in Thomson 1968: 214).

The sections that follow explore the persistence of the affinity-antagonism narrative through time. I highlight, in particular, how this narrative has both inspired, and been maintained by, local literature; and how it may inform investigations of gender roles and relationships in the Saskatchewan-Montana borderland.

2.5.2 The Narrative of Affinity

Residents of the borderland overwhelmingly expressed affinity for the regional landscape by emphasizing the aesthetic and spiritual elements and values associated with the grassland. Nearly half of the interview participants (13 of 30 respondents), both Canadians and Americans, identified an emotional or spiritual connection to the grasslands, associated with their beauty and the peaceful feelings inspired by open, quiet landscapes. These statements were reminiscent of the following account of one ranch woman's connection to the land, which was presented at the 1976 hearings to establish Saskatchewan's Grasslands National Park:

I know what it's like to ride all day and never encounter another person...to sit on the high butte and look south over the prairie for miles and miles...to see buffalo horns on the prairie and wonder if the buffalo died from a winter storm or an Indian arrow, to have a horse get loose and leave me fifteen miles from home. I am as much a part of this land as the coyotes and the gophers (qtd. in Poirier *et al.* 2005: 333).

Even the harshness of the environment was often perceived as a source of affection for, and connection to, the land. For example, one American commented, "it's lonely country. You'll see nobody there. And it's dry, turns really brown...I like those landscapes" ("Carl", American public agency employee, interview, December 12, 2007). Others spoke of the social

characteristics of the region. One Canadian shared, “there’s part of it that’s great...because of...my personality, I like quiet. Peace and quiet...so we’re very secluded here, but that part is good” (“Jerry”, Canadian agricultural producer, interview, December 13, 2007).

However, the rationale behind these statements of affinity for the landscape serves, simultaneously, as support for statements of antagonism. Just as the harshness of the landscape was present in the regional discourse of the ‘garden’, in the form of requiring hard labour on the land and specialized farming techniques to retain soil moisture, it has also been a fundamental component of the ‘desert’ discourse, and the loneliness and desolation of the regional environment. With respect to the latter, feelings of antagonism for the landscape are primarily inspired by the region’s climatic extremes and geographical isolation.

2.5.3 The Narrative of Antagonism

The narrative of antagonism is exemplified in Randy Widdis’ (2006: 1) introduction to his oral history of rural Saskatchewan, *Voices from Next Year Country*, in which he stated “next year country is a popular and ironic idiom of rural Saskatchewan: ‘next year’s rains will come at the right time’; ‘next year, I won’t get hailed out’; ‘next year, winter won’t set in before I have my hay hauled in for feeding’; ‘next year, I’ll get a decent price for my wheat’”. Rooted in the discourse of the Great American Desert and the experiences of dryland farmers, the narrative of antagonism often focuses on extremes in the regional climate, especially harsh seasonality in dry summer heat and long, cold winters. It highlights the hard work required to make a living from the land, and the misguided promises that drew agricultural settlers to the region in the late 1800s

and early 1900s.³² Finally, it centres on the emptiness and remoteness of the landscape, variably inspiring feelings of peacefulness and self-reflection or of loneliness and isolation.

In their interviews, residents of the borderland discussed the ‘toughness’ of their daily existence, echoing the sentiments raised in the historical discourse of the Great American Desert and the difficulties associated with practicing agriculture in the region. For example, one Canadian noted:

this place has been depopulating since...the late 1920s...and people were encouraged to settle here...probably wasn't the best policy in the world...it's a tough place to make a living...they were encouraged through the Homestead Act, some were trying to make a living on farm land that's just not having it (“Joe”, Canadian public agency employee, interview, December 10, 2007).

Many of the agricultural producers interviewed discussed the social aspects of living in a rural borderland, and specifically the processes of community life and community exodus. It was suggested that social cohesion across the border was very strong at one time, when international neighbours could communicate “across the fence” and cross-border travel was frequent and informal (“Jerry”, Canadian agricultural producer, interview, December 13, 2007). However, since the 2001 terrorist attacks on the United States and concomitant changes to the border security regime, such as new regulations requiring a passport for travel into the United States, it has become more difficult to cross the border. This has limited residents’ abilities to engage in spontaneous social events, such as going to parties or spending an afternoon playing cards with a

³² An examination of the chapter headings in Jones (2002) effectively communicates the depth of this antagonism; for example, “The Untold Sorrow”, “The Wiles of the Desert”, “The Rush of Fools”, “The Nightmare of Western Canada”, “The Worst of Life and Death”, and “The Ruins of the Empire”.

neighbour (“William”, American agricultural producer, interview, May 6, 2008; “Jerry”, Canadian agricultural producer, interview, December 13, 2007).

A theme that was consistent in primary and previously published interviews conducted in the Saskatchewan-Montana borderland was the propagation of the narrative of antagonism through generations. This could perpetuate processes of rural depopulation and decline, as was explained by one Canadian agricultural producer:

It’s like in your profession...if your mom and dad...kept saying...“don’t go near [that career], it doesn’t pay”...and what happens is we catch ourselves doing that...“there’s no money in cows”, “there’s no money in farming”, “get out of this place, it’s not good for you”, that’s not healthy for young people to hear that...and we catch ourselves doing it (“Jerry”, Canadian agricultural producer, interview, December 13, 2007).

This was echoed by other agricultural producers in Widdis’ oral history collection, in which one rancher commented on elders’ communications with rural youth, “We didn’t encourage them to stay, either, because it’s a tough row to hoe” (qtd. in Widdis 2006: 46). Underlying this antagonism, however, was often a persistent affinity for the landscape and the ranching lifestyle. This was evident in agricultural producers’ recognition of their kinship to the land and the love they have for what they do. For example, one Canadian rancher claimed, “I have absolutely no regrets...I’ve got no regrets about where we live, but...it’s a tough existence. And it always has been tough” (“Jerry”, Canadian agricultural producer, interview, December 13, 2007).

2.5.4 Affinity-Antagonism in Local Literature

The split narrative of affinity and antagonism for the landscape and the ranching lifestyle both inspired, and was reflected in, local literature. Historian Beth LaDow (2001: 116) observed that both Canadian and American writers showed:

...a split personality of hostility and affection. For different reasons, many people were attracted to the place despite its difficulties. Though there was little hope for respite, many even grew to love it. Local literature is full of paeans to the area, lyrical nostalgia about the 'home place'. Those who stayed liked it for its remoteness, its stark beauty, its challenge, the high standards it imposed.

This observation was echoed by at least one Canadian respondent, who reflected upon the magnetism of southwestern Saskatchewan:

[visitors are] always impressed with...the quiet, the solitude, the feeling of being small in a big place...these are all experiences, I think, that are [unique] to this landscape. I don't think it's an accident there's so many writers in the prairies. Artists in general" ("Joe", Canadian public agency employee, interview, December 10, 2007).

Indeed, creative writing from and about the Saskatchewan-Montana borderland portrayed this area as both beautiful and unforgiving. It could be depicted as a place of tranquility, where one could be close to nature (Butala 2004; Brander Gilman No Date a). Noteworthy in this context were Sharon Butala's writings about the prairie, as they epitomized the notion of the landscape – in both its isolation and its beauty – as a spiritual and transformative entity rife with inspiration (e.g. Butala 2004; see also Isle 1999). However, the literature also frequently portrayed the region as a lonely and desolate place (Butala 2004; Strand 1989; Stegner 1962;

Haste 1930), especially in the harsh winters that were described vividly in regional writing (Butala 2004; Peterson 1995; Stegner 1962; Haste 1930). The hot summers and their violent storms were also frequently depicted, adding to the forbidding character of the landscape, and illustrating the hardships encountered by those relying on agriculture for their livelihoods (Butala 2004; Poirier 1998; Peterson 1995; Stegner 1962; Haste 1930; Brander Gilman No Date a; No Date b).

Similar to the region's residents themselves, local literature often considered the narratives of affinity and antagonism simultaneously. For example, in her poem *Lilac Time* (1995), Montana poet Gwen Peterson began by describing affinity for, and the prosperity of, ranch life, culminating with the birth of a baby. However, when the baby fell ill in the winter, the harshness of the season, and of ranch life in general, were highlighted. The baby's birth, illness, and then death reflected the cyclical nature of agricultural life from prosperity to failure. The feelings of desperation and helplessness evoked by the poem carried to its end, in which the ideal of the prosperous West was supplanted by the reality of loss:

The homestead's gone, nothing remains
Except the lilac brave,
And a few gray boards of a picket fence
Built round a tiny grave.
Out here in the West, where settlers dwelt
On plains as vast as sea,
Lie the bones of children buried in sod,
In graves you'll never see (Peterson 1995, in Bennett 2001: 36).

While this research has examined perceptions of the landscape in creative literature, the landscape has also inspired other forms of art, such as paintings and photography (Poirier *et al.*

2005). Regardless of the medium through which it is channeled, the borderland landscape, in both its beauty and its isolation, has been a source of creative inspiration for many. In the context of creative literature, local artistic pursuits could exalt the beauty and tranquility of the landscape, express scorn for its isolation and hardships, or do both simultaneously.

2.5.5 Affinity-Antagonism and Gender

Finally, the affinity-antagonism narrative may be used to frame the differential gender roles and expectations in the borderland. In both academic and creative literature, ranch women were variably described as weak or strong, and equal or unequal to men. Women themselves expressed varying levels of affinity and antagonism for their work; for example, the joy of being outdoors was often juxtaposed against their distaste for indoor domestic work. Early literature, such as the poem *The Ranch in the Coulee* (written in 1930 by Montana poet Gwendolyn Haste, and reproduced in Bennett 2001), depicted ranch women as weak (in both physical and emotional terms), and dependent upon men. This poem reflected a time when ranch women were bound to traditionally ‘female’ indoor roles and tasks.³³ Historically, while rural women were engaged in food production activities on family farms, and were likely to help men with field work such as planting crops, women were exclusively responsible for activities such as food preparation, household chores, textile and clothing manufacture, and childcare (Faragher 1981). But, “despite the essential work done by Euro-American rural women there is little evidence to suggest that their husbands and sons granted equal power to equal work” (Faragher

³³ Martz (2006) provided a similar account of the progression of gender roles on family farms over time.

1981: 541). Therefore, women were viewed as the managers of the family household while men were considered the managers of the agricultural enterprise (Martz 2006) and also the chief decision-maker of the family (Faragher 1981).

In both Canada and the United States, this division of labour along the lines of gender meant that “from the public world outside the family, rural women were, before the late nineteenth century, usually forbidden entry” (Faragher 1981: 548). At that time, the public world, including the world of law, was the world of men, and wives had no civil, political or property rights apart from those of their husbands (Faragher 1981). While American law changed to recognize the property rights of heads of households, including widows and married women, beginning around the 1840s (Chused 1982-1983), in Canada, before women were considered to be legal ‘persons’, men would often register their brands in their wives’ names to avoid death taxes and to ensure that their widows would be left with something after the death of their husband and provider (Poirier 1998).³⁴

However, with agricultural modernization in the mid-twentieth century came a drastic shift in the conceptualization of gender roles within agricultural operations (Martz 2006). As part of this shift, womens’ roles changed from being solely domestic to being active participants in a range of farm/ranch activities, including outdoor work and management of the operation. This transition was described in Poirier’s 2002 interview with Saskatchewan rancher Marjorie Linthicum, who claimed: “there have been changes [in my lifetime] but I wouldn’t say big

³⁴ However, by the time the province of Saskatchewan was established in 1905, the law recognized that married or single women could own, manage, inherit or dispose of property (Bilson No Date).

changes. The bigger change was from the generation before me to mine. Like when ranch women started doing more ranch work and it was accepted that they could do so” (qtd. in Poirier *et al.* 2005: 337).

As time progressed and gender inequalities on the ranch became less common, ranch women in the borderland appeared to become less insistent upon asserting themselves in terms of having their ‘own’ components of the ranch. For example, a Canadian ranch woman recalled:

I know Mom used to tell me what it was like to be a woman back when she started farming, and as we grew up she always had her own cattle and her own brand and her own farmland. But I never grew up in the part of the century when women couldn’t have that stuff. So I didn’t have the same feeling toward those things as she did because I swore when I got married there was not going to be two branding irons in the fire, and everything was going to be ours and not mine and his, just to make life easier (Thelma Poirier’s 2003 interview with Saskatchewan rancher Louise Popescul, qtd. in Poirier *et al.* 2005: 340).

From a gendered perspective, the overlapping narratives of affinity and antagonism have been expressed as a function of traditional and more contemporary ‘female’ roles in agricultural work. In her poem *Cowgirls of the ‘30s*, Montana poet June Brander Gilman described the joy felt by women when working outdoors, compared to the disdain associated with being limited to domestic, indoor work:

Your day had begun afore ever the sun
... With the cattle strung out on a mile-long route
... Many hours you’d spend before reaching the end
... And, boy, how hard you did ride
Returning the calves that kept breaking back
... But step by step and inch by inch
You would slowly gain the top,
... When your patience grew thin in a situation of no-win,

And you so badly wanted to grouse,
You'd quickly recall the alternative to it all
Was cooking and cleaning the house,
...And there'd be no praise for the time you'd slave
Preparing bushels of potatoes and meat (Brander Gilman No Date a, in Bennett 2001:93).

This was sharply contrasted by one contemporary, young Canadian woman's reflection upon the roles she held on her family's ranch. While it was clear that this young woman preferred outdoor work, she also expressed a sort of affinity for her more 'traditional' tasks:

I actually love cooking. I love it when I mix up a meal and put it on the table and everyone enjoys it. That's it, but the dishes aren't very high on the list. I don't mind vacuuming, but there are other things I like to do. I don't like being in the house when everyone else is outside. I don't like that at all. Being outside, that's just where I like to be, that's where I'm most at peace (Thelma Poirier's 2001 interview with Saskatchewan rancher Jill Mastad, qtd. in Poirier *et al.* 2005: 388-389).

An examination of the affinity-antagonism narrative through the lens of gender thus provides a shifting perspective of this narrative. First, in the early literature, women were often portrayed as being weak and dependent individuals. In the early to mid-twentieth century, women themselves expressed affinity for outdoor ranch work, while domestic, indoor tasks were considered with antagonism. However, while these early women "were powerfully aware of the inequities of their lot and in private and woman-to-woman communication expressed their views on the subject deeply and often bitterly", their energy was expended in shaping the family order, not in resisting accepted gender roles (Faragher 1981: 551). The female role as an active partner in all aspects of ranch work became more widely accepted over the course of the twentieth century. As such, the ranch women of today did not experience a time in which women were

unaccustomed to, or excluded from, such roles on the ranch. As such, it appears that the antagonism with which indoor, domestic work was historically framed has become diluted, though the overarching affinity for the freedom of outdoor work continues to figure prominently in womens' discussions of their tasks.

2.6 CONCLUSION

The split narratives of simultaneous similarity and difference across the 49th parallel, and of concurrent affinity and antagonism inspired by the borderland landscape and the ranching lifestyle have deep roots in regional history, originating prior to European settlement. The narrative of similarity and difference describes how the international border is both something real and imaginary, artificially dividing a uniform landscape and its people; and at the same time encapsulates how the border creates and represents difference. The roots of this narrative appear to be nested first in regional Aboriginal history, beginning with the mobile, hunter-gatherer groups whose boundaries shifted in response to seasonality and territorial changes precipitated by intertribal war and conflict (LaDow 2001). Then, following the establishment of the 49th parallel as the international border by and for political interests, the regional Aboriginal population used the border as a 'medicine line' across which political and legal difference translated to sanctuary from wrongs committed in the other jurisdiction. This narrative is nested in regional ecological uniformity, observed even after physical boundary was constructed. Evidence of social, cultural, and economic ties across the border, shared by residents in the borderlands of both countries, confirms the notion of cross-border similarity emphasized in the

literature. However, residents' reflections upon the divergent political and legal regimes constructed on either side of the border encapsulate the notion of difference created, and represented, by the border.

The second narrative, in which affinity for the landscape is superimposed upon antagonism inspired by the same place, also has its roots in regional history. This narrative appears to have germinated during explorations of western North America to assess this region's suitability for fulfilling the nationalistic objectives of expansion and settlement. Regional explorers communicated tales of climatic harshness, sparse vegetation, and the inability to locate drinking water alongside rarer, but still convincing, tomes describing attraction to the landscape and the potential for agricultural success. The promise of fertile lands and prosperity was sufficient to temporarily supplant the notion of the Great American Desert with hope for the West as the 'garden' or Breadbasket of the World; and it served to justify the establishment of transcontinental rail linkages. These linkages, coupled with the popularity of the dryland farming doctrine, inspired and supported settlement policies that allowed both Canada and the United States to assert their sovereignty over their Western lands. This helped to give the 49th parallel tangible meaning as an international border. While the affinity narrative is rooted in the lingering hope for prosperity, the narrative of antagonism resurfaced when crops and homesteads failed, and many settlers left the West as quickly as they had arrived there.

Local literature provides a resilient record of the regional human-land interface, providing accounts of how the border is both artificial and real, and how the landscape is concurrently one of beauty and prosperity and isolation and loss. The narratives of similarity and difference and

affinity and antagonism are ensconced in the contemporary regional consciousness through the resiliency of this literature, through residents' daily contact with the landscape, and through their multigenerational linkages to the land and ranching lifestyle. The first narrative is reflected in the existence of cross-border ties of family and friendship, and in the understanding that regional residents and agricultural producers face similar issues regardless of their identity as 'Canadian' or 'American'. And, superimposed upon these similarities is the reality of increased border security reinforcing national differences, the associated reductions in cross-border travel and communication, and the fact that different political and regulatory systems on either side of the border mean that while issues and problems may be shared, they are addressed differently in each country. The second narrative is evident in the fact that while residents' spiritual and emotional connections to the peace and beauty of the landscape have remained unchanged over time, equally robust are the economic and social hardships, and the physical and emotional isolation experienced by borderland residents and agricultural producers. Multigenerational ties to the landscape, and the resiliency of these regional narratives, provide current residents with the invaluable reassurance that their ancestors experienced similar attachments to, and hardships from, the land.

Past and present borderland experiences filtered through the lens of gender present a particularly interesting case in which resident perceptions of livelihoods and landscapes have changed over time. Evidence from academic and creative literature shows a shifting pattern in how gender may inform perceptions of the borderland. This evidence suggests that, in the late nineteenth and early twentieth centuries, women were generally excluded from ranch roles

outside of the home. In the mid-twentieth century, womens' roles on the ranch began to expand beyond the domestic sphere to include participation in outdoor ranch activities such as calving, branding, and even riding with the men to move herds. In addition, womens' roles in ranch management, such as their assumption of responsibility for financial bookkeeping, grew at this time. During this period, linked to larger societal movements in gender equality, domestic roles and indoor work were regarded in academic and creative literature with considerable dismay by many ranch women, who wished to prove their abilities as ranch workers and partners.

Previously published interviews with ranch women suggest that womens' status as partners in ranch operations was secured during this period; and ranch women today regularly participate the gamut of ranch activities. Women are frequently the financial managers of the ranch, and they are often engaged as partners in ranch decision-making (see Martz 2006; Poirier *et al.* 2005). Unlike the generations of women preceding them, who had to prove their worth on the ranch, contemporary ranch women live in a time where property and marriage laws no longer constrain their abilities to own land, and they are accustomed to having meaningful roles in ranch operations (Martz 2006). As such, they appear to be more likely than their mothers and grandmothers to accept domestic work, such as child-rearing, cooking, and cleaning, alongside their duties on the ranch. It follows that contemporary ranch women also appear to place less value on personal ownership of elements of the ranch, favouring simplicity and implicit recognition of their status as equals on the ranch to the explicit assertions of ranch ownership and responsibility sought by women of preceding generations.³⁵

³⁵ Many contemporary ranch women, for example, elect to use their husbands' brands rather than to have their own,

As the rural borderland population diminishes, and the landscape and its resources are increasingly subject to competing uses, such as conservation, oil and gas development, increased cultivation,³⁶ and recreation- or amenity-based tourism, the prospect for the perpetuation of regional human-nature connections may be called into question. However, the resilience of the narratives of similarity-difference and affinity-antagonism describing the border, the borderland landscape, and residents' connections to these, is not questioned. While boundary disputes have fallen to history, proponents of ecosystem-based approaches to grassland management and conservation continue to question the legitimacy of an international border possessing no natural features dividing the landscape (Chapters 3 and 4). While the image of sanctuary across the medicine line has faded for humans, incongruencies in grasslands management and conservation regimes across the border have created instances in which landscapes and species may be protected in one country but not the other, posing clear challenges for shared and migratory species (Chapter 4). While residents recognize the shared problems among themselves and their neighbours, and express the desire to maintain close ties with family and friends across the border, the increasing securitization of the Canada-US border in recent years has acted to codify and solidify the differences between Canada and the United States, limiting cross-border travel and communication in the process (Chapter 3). While the threat of sodbusting for large-scale cultivation may have passed, the recent surge in energy development across the Northern Great Plains region has created land use contests, fragmenting the landscape not only in terms of

as was previously noted in Thelma Poirier's 2003 interview with Saskatchewan rancher Louise Popescul (in Poirier *et al.* 2005).

³⁶ Cited by many interview participants in the context of crop production for conversion to biofuels.

wildlife habitat, but creating economic, social and cultural cleavages. Policy orientation towards the development of biofuels on both sides of the border provides some with hope for regional economic diversity and prosperity; yet for others resurrects historical concerns of land conversion for cropland and the sustainability of cultivation (Chapters 4 and 5). And, the escalating interest in the Northern Great Plains landscape by state agencies and ENGOs due to factors such as energy development, climate change and conservation needs, can act to threaten traditional property regimes, land uses, and livelihoods by privileging external management and decision-making over local, traditional environmental knowledge (Chapter 5). Therefore, although the milieu in which these narratives operate has changed and evolved over time, the narratives of similarity and difference and affinity and antagonism have persisted to the present time. Moreover, they hold promise to persist in perpetuity to frame and explain regional perceptions of the border and borderland, and regional cross-border dynamics.

2.7 REFERENCES

- Aitken, S.C. 2005. Textual analysis: reading culture and context. In Flowerdew, R. and D. Martin (eds.). 2005. *Methods in Human Geography: A Guide for Students Doing a Research Project*. 2nd ed. Harlow: Pearson Education Limited: 233-249.
- Allen, D.W. 1991. Homesteading and Property Rights: Or, 'How the West Was Really Won'. *Journal of Law and Economics* 34(1): 1-23.
- Barnes, T.J. and J.S. Duncan. 1992. Introduction: Writing Worlds. In Barnes, T.J. and J.S. Duncan (eds.). 1992. *Writing Worlds: Discourse, text and metaphor in the*

- representation of landscape*. London and New York: Routledge: 1-17.
- Bennett, J.W. and S.B. Kohl. 2001. *Settling the Canadian-American West, 1890-1915: Pioneer Adaptation and Community Building, An Anthropological History*. Lincoln and London: University of Nebraska Press.
- Bennett, V. (ed.). 2001. *Cowgirl Poetry: One Hundred Years of Ridin' & Rhymin'*. Layton, UT: Gibbs Smith.
- Bilson, B. No Date. Legal Rights of Women. *The Encyclopedia of Saskatchewan: A Living Legacy*. Available: http://esask.uregina.ca/entry/legal_rights_of_women.html. Accessed July 13, 2010.
- Bircham, D. 2006. *Where Blue Grama Grows*. Regina: Hagios Press.
- Brander Gilman, J. No Date a. "Cowgirls of the '30s". In Bennett, V. (ed.). 2001. *Cowgirl Poetry: One Hundred Years of Ridin' & Rhymin'*. Layton, UT: Gibbs Smith: 92-94.
- Brander Gilman, J. No Date b. "July Thunderstorms". In Bennett, V. (ed.). 2001. *Cowgirl Poetry: One Hundred Years of Ridin' & Rhymin'*. Layton, UT: Gibbs Smith: 185-186.
- Breen, D.H. 1983. *The Canadian Prairie West and Ranching Frontier, 1874-1924*. Toronto: University of Toronto Press.
- Butala, S. 2004. *The Perfection of the Morning: An Apprenticeship in Nature*. 10th Anniversary Edition. Toronto: Harper Perennial Canada, Harper Collins Publishers Ltd.
- Chused, R.H. 1982-1983. Married Women's Property Law: 1800-1850. *Georgetown Law Journal* 71(5): 1359-1425.
- Cunfer, G. 2005. *On the Great Plains: Agriculture and Environment*. College Station, Texas:

- Texas A&M University Press.
- Davis, R.C. 1988. *Rupert's Land: A Cultural Tapestry*. Waterloo, ON: Wilfrid Laurier University Press.
- Doel, M.A. 2003. Analyzing Cultural Texts. In Clifford, N.J. and G. Valentine (eds.). 2003. *Key Methods in Geography*. London/Thousand Oaks/New Delhi: Sage Publication: 501-514.
- Faragher, J.M. 1981. History from the Inside-Out: Writing the History of Women in Rural America. *American Quarterly* 33(5): 537-557.
- Fargey, P. (Principal Investigator). 2005. *Crossing the Medicine Line: The Frenchman River-Bitter Creek Conservation Action Plan*. 2005-06/2007-08. Unpublished Proposal for Parks Canada, 16pp.
- Forrest, S.; Martin, B.; Bruyneel, S.; McAdam, S.; Fargey, P.; Carlson, J. and J. Nicholson. 2010. *Cross-Border Conservation Initiatives*. Crossing the Medicine Line Network. 2pp. (poster).
- Francis, R.D. 1989. *Images of the West: Responses to the Canadian Prairies*. Saskatoon, SK: Western Producer Prairie Books.
- Harley, J.B. 1989. Deconstructing the map. *Cartographica* 26: 1-20.
- Haste, G. 1930. "The Ranch in the Coulee". In V. Bennett (ed.). 2001. *Cowgirl Poetry: One Hundred Years of Ridin' & Rhymin'*. Layton, UT: Gibbs Smith: 16.
- Isenberg, A.C. 2000. *The Destruction of the Bison: An Environmental History, 1750-1920*. Cambridge, UK: Cambridge University Press.

- Isle, W. 1999. History and Nature: Representations of the Great Plains in the Work of Sharon Butala and Wallace Stegner. *Great Plains Quarterly* 19(2): 89-95.
- Jones, D.C. 2002. *Empire of Dust: Settling and Abandoning the Prairie Dry Belt* Calgary: University of Calgary Press.
- Jones, D.C. 1985. The Canadian Prairie Dryland Disaster and the Reshaping of 'Expert' Farm Wisdom. *Journal of Rural Studies* 1(2): 125-146;
- Kitchin, R. and M. Dodge. 2007. Rethinking maps. *Progress in Human Geography* 31(3): 331-344.
- LaDow, B. 2001. *The Medicine Line: Life and Death on a North American Borderland*. New York and London: Routledge.
- Lass, W.E. 1996. The North Dakota-Canada Boundary. *North Dakota History: A Journal of the Northern Plains* 63(4): 2-23.
- Libecap, G.D. and Z.K. Hansen. 2002. "Rain Follows the Plow" and Dryfarming Doctrine: The Climate Information Problem and Homestead Failure in the Upper Great Plains, 1890-1925. *The Journal of Economic History* 62(1): 86-120.
- Macoun, J. 1979. *Autobiography of John Macoun, M.A. Canadian Explorer and Naturalist. Assistant Director and Naturalist to the Geological Survey of Canada 1831-1920*, 2nd edition: Memorial Volume. Ottawa: Ottawa Field Naturalists Club.
- Mackenzie, Sir A. 1971 (Reprint). *Voyages from Montreal on the River St. Laurence through*

- the continent of North America to the frozen and Pacific Oceans, in the years 1789 and 1793: with preliminary account of the rise, progress and present state of the fur trade of that country.* Edmonton: Hurtig, Canadiana Reprint Series.
- Manzione, J. 1991. *I am Looking to the North for My Life”: Sitting Bull, 1876-1881.* Salt Lake City: University of Utah Press. Cunfer, G. 2005. *On the Great Plains: Agriculture and Environment.* College Station, Texas: Texas A&M University Press.
- Martz, D.J.F. 2006. *Canadian Farm Women and Their Families: Restructuring, Work and Decision Making.* Unpublished Ph.D. Dissertation. Department of Geography, University of Saskatchewan, Saskatoon, SK.
- McKinsey, L.S. and V. Konrad. 1989. *Borderlands Reflections: The United States and Canada.* Orono, ME: Borderlands.
- McManus, S. 2005. *The Line Which Separates: Race, Gender, and the Making of the Alberta-Montana Borderlands.* Edmonton: University of Alberta Press.
- Morris, P.S. 1999. Regional Ideas and the Montana-Alberta Borderlands. *The Geographical Review* 89(4): 469-490.
- G.E. Moulton. (ed.). 1983. *The Journals of the Lewis and Clark Expedition, Volume 1, Atlas of the Lewis and Clark Expedition. A Project of the Center for Great Plains Studies, University of Nebraska.* Lincoln and London: University of Nebraska Press.
- Newman, D. 2003. On Borders and Power: A Theoretical Framework. *Journal of Borderlands Studies* 18(1): 13-26.
- Norrie, K.H. 1975. The Rate of Settlement of the Canadian Prairies, 1870-1911. *The Journal of*

- Economic History* 35(2): 410-427.
- Owram, D. 1980. *Promise of Eden: The Canadian Expansionist Movement and the Idea of the West 1856-1900*. Toronto: University of Toronto Press.
- Palliser, J. 1865. *A General Map of the Routes in British North America Explored by the Expedition under Captain Palliser, During the Years 1857, 1858, 1859, 1860. Compiled from the Observations and Reports of Captain Palliser and his Officers, including the Maps constructed by Dr. Hector, and other authentic documents. To accompany "The Journals, Detailed Reports, & Observations" presented to both Houses of Parliament, by Command of her Majesty, 19th May, 1863. Stanford's Geographical Establishment London, 1865.*
- Parks Canada. 2009. *Grasslands National Park of Canada Proposed Management Plan for Public Consultation*. Available: www.pc.gc.ca/~media/pn-np/sk/grasslands/plan2009-06-10_e.ashx. Accessed October 21, 2009.
- Parks Canada. 2008. *Grasslands National Park of Canada: State of the Park Report 2007*. Available: www.pc.gc.ca/~media/pn-np/sk/grasslands/REP_SPR_e.ashx. Accessed January 19, 2010.
- Peterson, G. 1995. "Lilac Time". In Bennett, V. (ed.). 2001. *Cowgirl Poetry: One Hundred Years of Ridin' & Rhymin'*. Layton, UT: Gibbs Smith: 33-36.
- Pickles, J. 2004. *A History of Spaces: Cartographic reason, mapping and the geo-coded world*. London and New York: Routledge.
- Pickles, J. 1992. Texts, Hermeneutics and Propaganda Maps. In Barnes, T.J. and J.S. Duncan

- (eds.). 1992. *Writing Worlds: Discourse, text and metaphor in the representation of landscape*. London and New York: Routledge: 193-230.
- Poirier, T.; Bircham, D.; Jones-Hole, J.; Slade, A. and S.A. Vogelaar. (eds). 2005. *A Voice of Her Own*. Calgary: University of Calgary Press.
- Poirier, T. 1998. *Rock Creek*. Regina: Coteau Books.
- Potyondi, B. 1995. *In Palliser's Triangle: living the grasslands, 1850-1930*. Saskatoon, SK: Purich Publishing.
- Prucha, F.P. 1976. *American Indian Policy in Crisis: Christian Reformers and the Indian, 1865-1900*. Norman: University of Oklahoma Press.
- Reed, M.G. 2007. Uneven environmental management: a Canadian comparative political ecology. *Environment and Planning A* 39(2): 320-338.
- Smith Fargey, K. 2004. Introduction. In Smith Fargey, K. (ed.). *Shared Prairie-Shared Vision: The Northern Mixed Grass Transboundary Initiative*. Conservation Site Planning Workshop Proceedings and Digital Atlas. Regina, SK: Canadian Wildlife Service, Environment Canada. CD-ROM.
- Smith, H.N. 1957. *Virgin Land: The American West as Symbol and Myth*. New York: Vintage.
- Spence, M.D. 1999. *Dispossessing the Wilderness: Indian Removal and the Making of National Parks*. New York and Oxford: Oxford University Press.
- Spry, I.M. 1995. *The Palliser Expedition: The Dramatic Story of Western Canadian Exploration 1857-1860*, 2nd edition. Saskatoon, SK: Fifth House Ltd.
- Stegner, W.E. 1962. *Wolf Willow: A History, a Story and a Memory of the Last Plains Frontier*.

New York: Penguin Putnam Inc.

Strand, J. 1989. "The Hired Main's Wife". In Bennett, V. (ed.). 2001. *Cowgirl Poetry: One Hundred Years of Ridin' & Rhymin'*. Layton, UT: Gibbs Smith: 142-143

Thomson, D.W. 1968. The 49th Parallel. *The Geographical Journal* 134(2): 209-215.

Waiser, W.A. 1985. A Willing Scapegoat: John Macoun and the Route of the CPR. *Prairie Forum* 10(1): 65-80.

Widdis, R.W. 2006. *Voices from Next Year Country: An Oral History of Rural Saskatchewan*.

Regina: Canadian Plains Research Centre.

Wood Mountain Community Access Program (WMCAP). No Date. *Wood Mountain, SK: Our History*. Available: <http://www.woodmountain.ca/history/index.html>. Accessed July 15, 2009.

CHAPTER 3

9/11, THE BSE CRISIS, AND ENVIRONMENTAL MANAGEMENT IN THE TRANSBOUNDARY PLAINS-PRAIRIES REGION

ABSTRACT

As the Canada-US environmental relationship is driven by subnational, regional cross-border relationships, it has been argued that it is only indirectly affected by national differences in other policy domains. Although the Canada-US relationship has long been characterized by the absence of conflict, there are several policy domains in which the stances of the two nations diverge. This paper examines if Canada-US environmental relations in the subnational Saskatchewan-Montana borderland region remain indirectly affected after existing international tensions in other policy domains were inflamed by the September 11, 2001 (9/11) terrorist attacks on the United States and the 2003 BSE Crisis.

9/11 triggered a cascade of changes in the way that borders have been conceptualized and managed around the world; and it led to the implementation of stringent new border security regulations. Although 9/11 was a national/ international level event, it has served to 'thicken' the border at the national, regional, and local levels. By contrast, the BSE Crisis did not lead to such robust changes to the border and cross-border relationships; however, lingering tensions remain among some individuals and communities on the Canadian side of the border. This paper illustrates how restricted cross-border communication, mobility and co-operation, and eroded trust between international neighbours induced by 9/11 and the BSE Crisis have been detrimental to formal transboundary grasslands conservation and management efforts across the Saskatchewan-Montana border.

3.1 INTRODUCTION

The September 11, 2001 (9/11) terrorist attacks on the United States triggered major changes in the global discourse of borders. Specifically, 9/11 prompted the prevailing discourse of dissolving borders in the wake of globalization to be supplanted by the discourse of reinforcing borders for purposes of national security (Farson 2006; Newman 2006; Nicol 2006). While the effects of 9/11 are global, they have been most pronounced for countries that share physical borders, and have active trade relationships, with the United States (Farson 2006). Canada, and the Canada-US relationship, have been particularly vulnerable to changes in American national security policies since 9/11. This is due to Canada's geographical proximity to the United States; its small relative size in terms of population, economics, and global influence; its economic dependence on its southern neighbour; and the historical importance of the US border to Canadians (Stefanick 2009; Farson 2006; Nicol 2006; Schwartz 2000; Munton 1980-1981).

The narrative of policy convergence and divergence between the two countries (see Adams 2003) adds to the discourse of uneven Canada-US relations. Tensions emanating from national differences in domestic and foreign policy had escalated before the terror attacks (Nicol 2006; Vannijnatten 2004). For example, the countries' differing stances on a range of issues from ballistic missile defense to same-sex marriage represent cases of binational divergence independent of 9/11 (Farson 2006; Nicol 2006; Vannijnatten 2004). Such pre-existing tensions were deepened by the post-9/11 labeling of Canada as a portal for terrorists entering the United States (Nicol 2006). Also since 9/11, differences in foreign policy, including polarized stances

on the role of the UN Security Council, the Iraq War, and the Geneva Convention, have sharpened this narrative of divergence (Farson 2006; Vannijnatten 2004).

However, it has been claimed that the Canada-US environmental relationship has been only indirectly affected by escalating tensions in other policy domains (Vannijnatten 2004). Vannijnatten (2004) argued that this is due, in part, to the strength of the subnational, regional cross-border relationships that characterize Canada-US environmental relations. While the literature discusses Canada-US economic relations in the post-9/11 era (e.g. Nicol 2006), and addresses transboundary environmental co-operation along the US-Mexico (e.g. Singh and Ganster 2003) and Canada-US (e.g. Stefanick 2009; Pedynowski 2003) borders, the potential implications of 9/11 for the Canada-US environmental relationship are discussed less frequently (e.g. Stefanick 2009). Even less understood are the range of implications of international/national-level events such as 9/11 on the subnational (regional/local) cross-border relationships that drive communication and action in the Canada-US environmental relationship. Concomitantly, there is a dearth of literature exploring the effects of regional/local events, such as the 2003 bovine spongiform encephalopathy (BSE, or 'Mad Cow Disease') Crisis in the Plains-Prairies borderland region, and the potential for such an event to affect the regional, cross-border environmental relationship.

This paper examines the scalar aspects of the Canada-US border and environmental relationship by investigating the effects of 9/11, an international/national-level event, and the BSE Crisis, a regional/local-level event, on transboundary environmental management efforts in the Plains-Prairies borderland. It interrogates whether the Canada-US environmental

relationship remains indirectly affected by divergences in other policy domains, or if events such as 9/11 and the BSE Crisis have triggered a spillover of issues and conflicts into the environmental sphere. I argue that both events exacerbated existing tensions, rather than creating new ones, at the international/national and regional/local levels, respectively. However, while changes to the border and the relationships across it instigated by 9/11 were widespread and robust, the tensions inflamed by the BSE Crisis were comparatively localized and short-lived. Still, I contend that the impacts of both events have the potential to transcend policy domains and have direct effects on the Canada-US environmental relationship in the Plains-Prairies borderland. These direct effects are the result of altering regional, subnational cross-border relationships. Specifically, I argue that these events have acted to limit cross-border mobility, and to erode trust between communities and individuals, to complicate transboundary communication, co-operation and understanding to the detriment of transboundary grasslands conservation and management in the Plains-Prairies borderland.

3.2 STUDY AREA

The Plains-Prairies borderland is the ideal setting for investigations of post-9/11 border policy changes, and their implications for transboundary environmental management, for several reasons. First, the 49th parallel dividing the Plains-Prairies region has historically been referred to as an ‘arbitrary’ line dividing an area of relative ecological, economic, socio-cultural homogeneity (LaDow 2001; Morris 1999; Widdis 1997; McKinsey and Konrad 1989). Second, as this borderland is sparsely populated, rural, and agrarian (Widdis 1997; McKinsey and Konrad

1989), it is spatially and psychologically distanced from the risk narratives of terrorism and illegal immigration more prevalent in populated, urbanized ports.³⁷ As such, local opinions of post-9/11 border security measures have been particularly critical. Third, there are strong kinship ties among agricultural producers across the Plains-Prairies border. Studying the impacts of 9/11 and the BSE Crisis upon these historically cohesive cross-border agricultural communities provides an interesting account of change in subnational relationships across the Canada-US border.

Fourth, the historical threats to the region's grassland environment, such as sodbusting and prairie fires³⁸ have been compounded by such contemporary and emerging threats as climate change, energy development,³⁹ and the spread of exotic invasive weeds. Each of these threats may be classified as shared (existing on both sides of the border) or transboundary (actively spanning the border). Furthermore, the region is depopulating on either side of the border, leading to the erosion of rural communities and their historical ranching cultures. Therefore, new decision-making and land use contests among governments, industrialists, conservationists, and agricultural producers have emerged across the border, in which reconciling regional economic growth, conservation needs, and traditional livelihoods is paramount. Environmental non-

³⁷The Saskatchewan-Montana border accounts for just 0.2% of cross-border car traffic, in contrast to the British Columbia-Washington border across which 16.3% of cross-border car traffic flows; the Ontario-Michigan ports of entry (accounting for 27.7% of cross-border car traffic) and the Ontario-New York ports of entry (accounting for 26.6% of cross-border car traffic) (Davidson *et al.* 2010).

³⁸ From an ecological perspective, fire is a beneficial factor in maintaining the productivity of the short- and mixed-grass prairie ecosystem. As such, fire suppression may be viewed as an ecological threat. However, from a human perspective, prairie fires have long been considered as threats to regional agriculture, settlements, and other infrastructure.

³⁹ Energy development activities in southern Saskatchewan and northern Montana include oil, gas, coal, and coalbed methane extraction; the construction of wind power facilities; and the conversion of grasslands to cropland for biofuel production.

governmental organizations (ENGOS) have recently become more interested in the conservation and management of the region's grasslands, and local producer and environmental groups are increasingly joining the effort to address grasslands issues based on ecosystem, not anthropogenic, borders (Bruyneel 2009). Frequently, actors from ENGOS and local communities join with actors from public agencies (at the federal and state/provincial levels) in informal, transboundary research and communication networks. Such networks demonstrate a shift from state-led, top-down government in environmental management to providing the conditions for environmental *governance*, in which "power and authority are horizontally decentralized and devolved to broader members of society" (Harrington *et al.* 2008: 200). Examples of these networks will be provided as the paper progresses. Finally, Stefanick (2009:16) observed that "post [9-11] security legislation is incompatible with both ecosystems thinking and North American transborder conservation initiatives". As these networks operate according to the boundaries of the grasslands ecosystem and not political boundaries, the international border is positioned to complicate their efforts.

This paper is the product of empirical research conducted along the Saskatchewan-Montana segment of the 49th parallel dividing the Plains-Prairies region. This subregion has been included within several ecoregional, and often transboundary, conservation planning documents and strategies produced by ENGOS working in the Plains-Prairies grasslands (e.g. Riley *et al.* 2007; Forrest *et al.* 2004; Smith Fargey 2004a; TNC 1999). Significantly, this region has been the setting of several informal transboundary conservation initiatives, such as the Northern Mixed Grass Transboundary Conservation Initiative (NMGTCI) (Parks Canada 2009;

Smith Fargey 2004a). The NMGTCI was an informal transboundary working group composed of more than 35 participants from over 17 partners from federal (Canada and the US) and state/provincial (Montana, Saskatchewan and Alberta) government agencies, ENGOs, and academia (Smith Fargey 2004b). During a series of planning workshops held in 2003-2004, the NMGTCI developed conservation site plans for six large transboundary landscapes in the Plains-Prairies borderland region.⁴⁰ One of these, the Frenchman River Bitter Creek (FRBC) Conservation Area, has become the focal area of the NMGTCI's successor in transboundary conservation work, the Crossing the Medicine Line Network (CMLN) (Forrest *et al.* 2010).⁴¹

The FRBC area is composed of the Bitter Creek-Frenchman portion of Montana's Northwestern Glaciated Plains, the Frenchman River Valley in Canada and the USA, and the East and West Blocks of Grasslands National Park in Saskatchewan, Canada (Fargey *et al.* 2004). It includes all or part of eleven Rural Municipalities (RMs) in southwestern Saskatchewan⁴² and the northern portions of Montana's Phillips and Valley Counties (Figure 3.1).

⁴⁰ Conservation Site Plans were developed for the Alberta Milk River (Alberta), Sage Creek-Southwest Pasture Complex (Alberta/Saskatchewan/Montana), Old Man on His Back (Saskatchewan), Climax Region (Saskatchewan), Whitewater Wetlands (Saskatchewan/Montana) and Frenchman River Bitter Creek (Saskatchewan/Montana) areas (Smith Fargey 2004b).

⁴¹ The CMLN is composed of representatives from government agencies, ENGOs, and academia on both sides of the border. It strives to "build broader awareness and forge a deeper commitment to conserve the region's native biodiversity through the engagement of stakeholders, clarification of conservation priorities and stakeholder interests, development of transboundary partnerships, and co-ordinated program delivery" while developing "a collaborative work environment that effectively balances conservation with the needs of human communities" (CMLN No Date). The CMLN is active in promoting interagency and cross-border communication, identifying areas of conservation and research priority, and fostering cross-border research projects (Fargey 2005; CMLN No Date).

⁴² The eleven Rural Municipalities included in the FRBC Conservation Area are Val Marie No. 17, Lone Tree No. 18, Old Post No. 43, Waverley No. 44, Mankota No. 45, Glen McPherson No. 46, White Valley No. 49, Auvergne No. 76, Wise Creek No. 77, Grassy Creek No. 78, and Arlington No. 79.

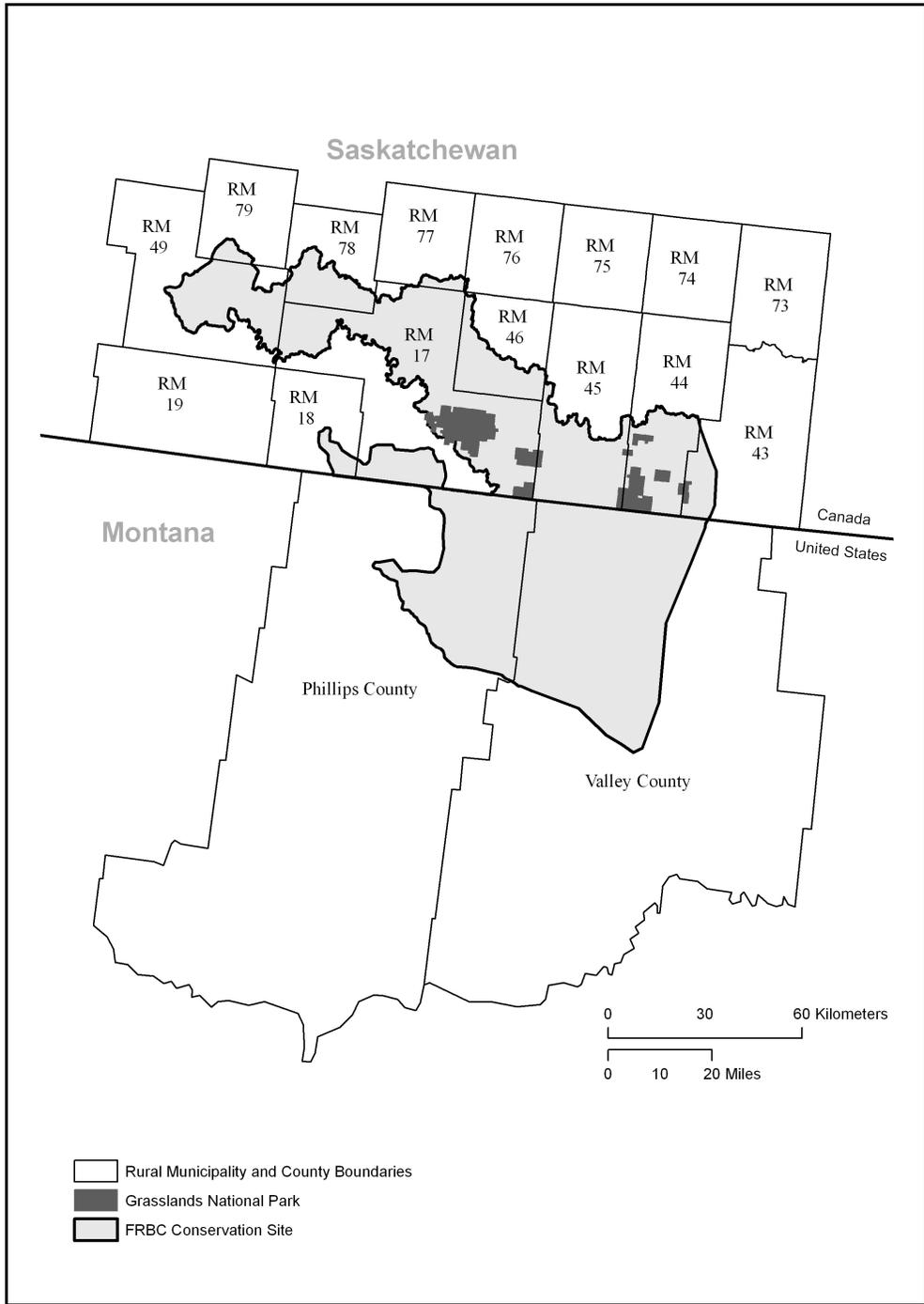


Figure 3.1: The FRBC Conservation Area

The NMGTCI's conservation targets for the FRBC site closely correspond to the objectives delineated in recent Management Plans for Grasslands National Park (Parks Canada 2009, 2008; Fargey 2005). As such, the FRBC area has been embraced as an area of high conservation priority by Environment Canada, Parks Canada, Grasslands National Park, and their partners provincially and across the 49th parallel (Fargey 2005; Smith Fargey 2004b). Therefore, as the FRBC area is a borderland region in which historical tendencies support cross-border similarity and mobility, and in which transboundary co-operation for grasslands conservation and management has been strong, it is the ideal subnational setting for an investigation of the impacts of border change on the Canada-US environmental relationship.

3.3 METHODOLOGY

I conducted a series of semi-structured interviews from June 2007-May 2008 with key informants living and/or working in the FRBC region. The interview sample included employees of federal, state/provincial, and municipal/County public agencies, ENGO employees, and local agricultural producers.⁴³ Initial interview candidates were identified from among the 2003-2004 NMGTCI partners, and the final interview sample was defined using snowball sampling techniques. I completed 30 interviews, 19 in Canada and 11 in the USA.⁴⁴ Interviews were conducted to the point of repetition in facts and insights provided by the participants. The

⁴³ Including ranchers, focused on livestock production, and "mixed farmers", focused on both livestock and crop production.

⁴⁴ This does not, however, reflect the final number of interview participants, as five of the interviews were conducted with groups consisting of 2-3 participants. Group interviews were conducted on large, family-operated ranches and in public agencies and ENGOs when several people with similar mandates but different roles expressed interest in participating in this project.

notion of an arbitrary border dividing an ecologically and socially homogenous region was confirmed by the strong convergence of Canadian and American responses to many of the interview questions.

All interviews followed a consistent interview schedule under four main topical areas: ‘conservation’, ‘environmental legislation’, ‘ecosystem management’ and, of primary relevance to this paper, ‘transboundary attitudes and relations’.⁴⁵ This paper is based on participants’ responses to inquiries such as *i*) describe the relationship between Canada and the USA in this region; *ii*) describe the changes you have seen in the Canada-US border and relationship over time (e.g. after NAFTA, 9/11, and/or the BSE Crisis); and *iii*) do you think that this relationship is more open or closed now than it was in the past? Participants were also asked to describe the nature and frequency of their travel and interaction with personal contacts across the border, and were asked to describe any business they conducted across the border.

Interviews were digitally recorded and transcribed verbatim for analysis. To ensure data quality and rigour, each participant was given the opportunity to review and revise the transcript of his/her interview prior to its use. I undertook thematic analysis by both deductive (from the interview questionnaire) and inductive (from the responses themselves) coding, using the qualitative data analysis software program Atlas.ti (after Reed 2007). Interview data was supplemented by field notes from multiple site visits from 2005-2009, and notes from the author’s attendance at meetings of local conservation groups.

⁴⁵ There were minor deviations in the questions posed to participants affiliated with different stakeholder groups. For example, some of the questions posed to public agency employees were different than the questions posed to agricultural producers, and vice-versa.

3.4 9/11 AS A CATALYST OF BORDER AND BORDERLAND CHANGE

The literature is rich with evidence describing changes in the binational relationship, and heightened security along the Canada-US border, since 9/11 (e.g. Brunet-Jailly 2006; Farson 2006; Newman 2006; Nicol 2006; Roy 2006; McManus 2005; Newman 2003; Singh and Ganster 2003). This research confirms these findings and provides new insights about the effects of border change on the binational relationship in the FRBC subregion of the Plains-Prairies borderland. Approximately 67 percent of respondents (in 20/30 interviews, split relatively evenly among American and Canadian respondents) explicitly identified 9/11 as a major catalyst of change in the border. When changes in border security were considered more broadly to include participants' reflections on new passport regulations and their associated constraints to cross-border mobility, approximately 93 percent of respondents (in 28/30 interviews) reported significant changes in the Saskatchewan-Montana border since September 2001.

Brunet-Jailly (2006) documented the increase in the number of border patrol agents deployed along the Canada-US border following 9/11. This phenomenon was also observed by both Canadians and Americans living and working near the border. For example:

I don't know if you know or not – there's sensors all along there [the Canada-US border]. If you trip one, and I've done it, it'd be within 15 minutes, border patrol is there...the States have definitely taken that issue very seriously, as a function of 9-1-1 ("Matthew",⁴⁶ American public agency employee, interview, February 5, 2008).

⁴⁶ To protect confidentiality, each interview participant was assigned a pseudonym consistent with his/her gender identity. In the case of interviews with multiple participants, the pseudonym corresponds to the gender of the dominant participant. To further protect confidentiality, interview participants are identified by stakeholder group and interview date, but their specific affiliations and the exact interview locations are not disclosed.

Concomitantly, border crossing experiences have undergone drastic changes since 9/11. Bennett and Kohl (2001) observed that pre-9/11 border crossings in the Plains-Prairies region were informal excursions, with more time devoted to informal chatter with customs officials than with proving one's nationality. Several interview participants corroborated this past informality, and contrasted it with the current border crossing experience. One Canadian remarked:

You need a passport now. I don't have a current passport...a couple of decades ago when I drove across you didn't even need to show any i.d. ...you'd just drive across: 'hi', you know, 'we're stopping'. 'Okay, thanks, have a good day' ("Christine", Canadian public agency employee, interview, November 15, 2007).

American citizens appeared to be especially critical of their own country's national security policies and practices. This was evident in the following statement:

Homeland Security has brought this enormous amount of money waste on our side of the border, of border patrols...just a, you know, incredible money dump for no good purpose. That's my own personal view...I mean, it must be mighty lonely sitting up by Turner⁴⁷ waiting for Osama to cross the border ("Carl", American public agency employee, interview, December 12, 2007).

This passage suggested that while National Security measures must be adopted uniformly across the border without accommodating regional variability in the binational relationship, stringent border security measures were seemingly out of place in a rural, geographically remote

⁴⁷ The Turner, Montana – Climax, Saskatchewan port of entry.

borderland. Americans' dismay for their own country's policies were especially pronounced when discussing the new passport requirements for cross-border travel. For example:

On the US side, probably within the next 18 months,⁴⁸ I'm going to have to hold a passport...in order to get – which strikes me dumber than hell – I'm going to have to hold a US passport so if I run up to Regina [Saskatchewan]...I can get my sorry self back into my country...you know, I don't quite get that, but I guess that's how it is (“Ron”, American public agency employee, interview, May 7, 2008).

The new border security policies and regulations implemented following 9/11 caused tangible changes in the border, altering the way it was perceived and experienced by both Canadians and Americans. Therefore, although the changes observed were a function of new American national security policies, the changes were felt by residents of both countries almost equally. However, the Americans interviewed were more vocal than the Canadians in voicing their objections to, and frustrations with, the new policies. 9/11 triggered national-level policy changes, but the following sections examine the regional and local implications of these changes, with respect to their effects on local communities and on public agencies operating in the region.

3.4.1 The Regional and Local Effects of 9/11: Rural Depopulation and Community Cohesion

Rural depopulation in the Plains-Prairies borderland began in the Dust Bowl years, and has continued to the present time (“Joe”, Canadian public agency employee, interview, December 10, 2007; see also Christie 2009; Widdis 2006). At present, the FRBC region is

⁴⁸ In June 2009, the phase of the Western Hemisphere Travel Initiative (WHTI) requiring passports or approved citizenship documents for travelers entering the United States by land or sea officially entered into force. Such documents were only required for air travel under the earlier phases of the WHTI.

losing population on both sides of the border, and particularly noteworthy are the loss of young people and the trend toward aging populations (Christie 2009; Widdis 2006). Although population loss has taken place for approximately 60 years, one Canadian attributed recent rural depopulation and community decline to the border and its role in restricting access to certain amenities and services:

...I've watched both communities [on either side of the border] die, and I think part of it is associated to the border...I had a neighbour that lived across the border...he couldn't come to my school. He moved off this ranch to get his kids closer to school...My health care - I got to drive all the way to Swift Current [Saskatchewan], and as the crow flies, I'm 60 miles from Malta [Montana]...good facility there...can't use it. I have to drive 100 miles, whereas my neighbour has the closer hospital, I have the closer school. We couldn't share it ("Jerry", Canadian agricultural producer, interview, December 13, 2007).

It is possible that post-9/11 border security policies have contributed to processes of rural depopulation, as these policies have reduced mobility and opportunities for social interaction. For example, while many residents noted that their closest neighbour lived across the border, they also attested to the fact that their ability to interact across the border had been restricted since 9/11. One American explained:

There were two families, McLeods and Hunters, lived right there, about from here to the top of the hill across the border from one another and they used to go back and forth playing cards...Now if you go, it's easy to get into Canada, it's just hard to come back home again...If you're going to play cards with the neighbors, you have to take a passport! ("William", American agricultural producer, interview, May 6, 2008).

And, since 9/11, changes in the policing of the border have altered the historically-perceived inclusion of the border as a part of the local community. For example:

At one time, your border official lived here for...30 or 20 years...he was part of the community, more or less. Now we're dealing with people that come and go...that's the biggest thing now, after the 9/11, is...we've lost our comfortable community feeling that we used to have here ("Jerry", Canadian agricultural producer, interview, December 13, 2007).

It was evident from these statements that rural borderland life had changed since 9/11 for both Canadian and American residents of the FRBC region. Changes in the border, and border security, since 9/11 may be accelerating, or at least maintaining, processes of regional rural depopulation and decline. Significantly, restricted cross-border mobility has reduced cohesion in the transboundary ranching community, by changing the dynamics of 'neighbourly' relationships across the border. And, new security regulations have transformed the border from an entity that was once perceived to be a part of the borderland community to an entity controlled by external officials. This has contributed to a loss of regional community identity, and to a disconnect of residents from the border and its functions.

3.4.2 The Institutional Effects of 9/11: Interagency Communication and Co-operation Across the Border

Interview participants representing public agencies at all jurisdictional levels spoke of the need for, and the value of, cross-border collaboration for regional environmental management. However, they also noted that such collaboration had always been complicated. The guiding philosophies within the agencies themselves framed borders – both between agencies and countries – as solid, impassable lines (Bruyneel 2009). One Canadian went as far as to say,

“ideas really do stop at borders often” (“Joe” Canadian public agency employee, interview, December 10, 2007).

One American noted that the lack of communication among agencies across the border that existed prior to 9/11 has been exacerbated since:

I never really thought about what Canada did on their side of the border, you know? And now it's getting so hard to go back and forth, you think about it even less (“Carl”, American public agency employee, interview, December 12, 2007).

One way in which 9/11 exacerbated extant barriers to cross-border communication and understanding was through the implementation of stringent border security policies that restricted travel beyond one's own jurisdiction. For example, one Canadian observed, “Going to meetings is a little more difficult. They don't want you working across the border so much” (“Christine”, Canadian public agency employee, interview, November 15, 2007). This has acted to complicate transboundary communication; and in doing so, it has further limited understanding within public agencies about what is happening across the border. One Canadian explained:

You can't understand people's interests unless you meet the people and hear them, right? And if you can't travel outside of your own political jurisdiction, and that's very real for many different levels of government...if you can't talk to your colleague across...an hour away in Malta [Montana], then, you know? (“Joe”, Canadian public agency employee, interview, December 10, 2007).

Therefore, interagency and international communication and co-operation were complicated by the international border prior to 9/11. Just as 9/11 exacerbated pre-existing

tensions in the Canada-US relationship, it intensified the reluctance of public agencies to work across jurisdictional borders. In the context of grasslands conservation and management, this has reduced the ability of federal and state/provincial public agencies to formally communicate and work cooperatively across the border. As a result, few within these public agencies have sound knowledge of the range of grassland issues and problems, and/or the agencies tasked with dealing with these, across the border.

3.5 THE BSE CRISIS AS A CATALYST OF BORDER AND BORDERLAND CHANGE

The BSE Crisis began in May 2003, when Canadian authorities confirmed that a cow in the western province of Alberta was infected with the disease.⁴⁹ There was a near immediate closure of foreign borders to Canadian beef and cattle exports following this announcement (Charlebois and Labrecque 2007; Le Roy and Klein 2005; O'Neill 2005). The United States, Canada's largest market for beef and cattle, was among the 34 countries to ban Canadian exports (Le Roy and Klein, 2005). The American border remained closed, or partially closed, to Canadian cattle and beef products from 2003 to 2007,⁵⁰ causing economic chaos throughout the Canadian cattle industry (Charlebois and Labrecque 2007; Le Roy and Klein 2005; O'Neill 2005). The lengthy closure of the cattle border generated friction between the United States and

⁴⁹ A BSE-positive dairy cow was then found in Washington State in December 2003, but DNA testing traced this cow's origin, and infection, back to Canada (Charlebois and Labrecque 2007; Le Roy and Klein 2005; O'Neill 2005).

⁵⁰ The United States removed the ban on boneless meat imports from young Canadian cattle (under 30 months of age) in August 2003 (O'Neill 2005). The ban on live cattle exports was to be lifted in March 2005; however, this was delayed by legal battles raised by many US lobby groups to keep the border closed following the discovery of two new Canadian BSE cases in January 2005 (Le Roy and Klein 2005; O'Neill 2005). In July 2005, the ban was lifted for the import of live Canadian cattle under 30 months of age (Le Roy and Klein 2005). The border finally reopened to Canadian exports of live, older cattle (over 30 months of age) in November 2007 (CBC 2007).

Canada at the highest levels of government. This friction was inflamed by binational conflicts emerging in other policy domains, leading some Canadians to label the American stance on BSE as retribution for Canada's lack of support for the Iraq War (O'Neill 2005; "Lisa", Canadian public agency employee, interview, December 5, 2007).

Similar to 9/11, it was suggested that the BSE Crisis exacerbated, rather than created, tensions between Canadian and American ranchers. For example:

I would say, because I was in the States before BSE, the animosity was there. BSE just provided an extremely convenient excuse, in my opinion, so I don't know if it...changed [or] accentuated the animosity...("Preston", Canadian agricultural producer, interview, March 19, 2008).

But, in contrast to opinions about the impacts of 9/11, interview participants' reactions to the BSE Crisis were mixed. Canadian and American responses differed drastically. Unsurprisingly, many Canadian respondents communicated hurt and anger over the American policy response to BSE. For example, one Canadian considered the BSE Crisis to be just as damaging to the Canada-US relationship as was 9/11, particularly as both influenced Canadians' perceptions of America and Americans:

I found it really disturbing that in both those instances [9/11 and the BSE Crisis] there was a lot of finger pointing by Americans at Canada for us being lax or slack in how...we either handled security or food and livestock and, I gotta say, it was hurtful to me personally, but I also thought it was disrespectful, because I think in a lot of cases when things happen in the States that hurts them, they tend to go very...they close ranks...and I think that tends to exclude their partners. And it didn't take very many just off the cuff remarks by George Bush to really turn a lot of Canadians, I think against him personally...like I say it bothered me on a personal level, but I know that, talking to other people and my friends in

Canada, that you don't look at Americans the same ("Russell", Canadian public agency employee, interview, February 18, 2008).

However, other Canadians argued that the American policy response to the BSE Crisis was logical, and that it should not have been perceived as an attack on Canadians. Neither, they claimed, should the American governments' response have been considered reflective of the sentiments of individual American ranchers. For example:

There is a fair amount of resentment right now, but I'd struggle to believe that if the tables were turned that we wouldn't, in Canada, be operating the same way that they are in the States, as being protectionist ("Scott", Canadian ENGO employee, interview, February 20, 2008).

'Lot of animosity, but what happened there, it wasn't my local neighbours' fault that the Americans took their approach on the BSE crisis like they did. It was government policy. So the wrong people got branded over it ("Jerry", Canadian rancher, interview, December 13, 2007).

I think the situation with R-CALF⁵¹ has strained some of [the Canada-US relationship]. There's been a lot of anti-Canadian-American sentiment kicked around on both sides of the border, and I don't think it really should've been a concern for local people. It shouldn't have bothered friendships here, but I think it probably strained some relationships a bit. I know talking to Americans, they didn't want to see the border close. They lost half of their trading area basically too, to the border and in the cattle trade ("Nick", Canadian rancher, interview, March 19, 2008).

American interview participants did not place the same emphasis on the BSE Crisis as did Canadians. While differential animal health regulations across the border were noted as obstacles to transboundary policy co-ordination in approximately 45 per cent of the interviews

⁵¹ R-CALF, the Ranchers-Cattlemen Action Legal Foundation is a powerful lobby group that has been vocal in opposing the re-opening of the American border to Canadian beef and live cattle (Furtan and van Melle 2004).

with American participants (5/11 interviews), they did not perceive the BSE Crisis to be a major catalyst of change in the regional cross-border relationship. In fact, when asked about the Crisis' role in changing border dynamics, one American stated, "Oh yeah, the BSE, I forgot about that" ("George", American public agency employee, interview, February 5, 2008).

The brunt of the BSE Crisis was borne almost exclusively by Canadians; however, this section suggested that some American cattle producers also suffered from lost trade opportunities as a result of the prolonged border closures. This section also illustrated that while Canadian agricultural producers may have not agreed with the strict policy stance of the American *government*, they did not necessarily blame American *ranchers* for the border closures. However, it also showed that some Canadians have continued to harbour residual resentment over the American policy response to the BSE Crisis. In this context, the fact that "you don't look at Americans the same" was reminiscent of the increased American wariness of Canada and Canadians following 9/11 (Nicol 2006). The balance of evidence shows that while the BSE Crisis had significant economic, social, and cultural impacts at the regional and local level, the time elapsed since the Crisis has diluted much of the resentment between Canadians and Americans that it created. The residual tensions on the Canadian side are very localized. They remain at the level of communities or individuals, and have not caused significant or robust changes in the cross-border relationship in the Saskatchewan-Montana borderland or the FRBC subregion. However, these lingering tensions and eroded trust among communities and individuals across the border may have the potential to reduce the willingness of local actors to co-operate in a transboundary way. More research in this regard is needed.

3.6 TIGHTENING OF THE CANADA-US BORDER IN ENVIRONMENTAL MANAGEMENT

While government agencies may be reluctant to work across jurisdictional lines, ENGOs tend to operate more readily on ecosystem, rather than political, boundaries. Therefore, cross-border environmental management initiatives have frequently been created, led, and sustained by ENGOs and informal civic networks, such as the NMGTCI and its successor, the CMLN. Government agency personnel might be engaged in such informal cross-border networks as concerned citizens with specialized knowledge, but they do not often act within these networks as formal representatives of their country, province/state, or agency. For example:

There's no integration, like state or federal agencies with provincial or federal agencies in Canada, in terms of trying to co-ordinate anything, that I'm aware of...the interaction is at the working level...I know a number of folks in the US, and I would phone up a guy in North Dakota and say "I hear you're having a...workshop for agency staff. Can I come down and see how your system works and what problems you're having?", and they'll say, "Oh yeah, that'd be good because...we're interested in seeing what you guys are working on up there". But there's no integration at a higher level...and a lot of these relationships were built through professional societies...you go to meetings and you get to know these people a lot. That's how the professional network is built up. It's not because there's any co-operation at...higher levels in the agencies... ("Luke", Canadian public agency employee, interview, February 7, 2008).

In addition, when speaking of public agencies, one American public agency employee noted an "upper level management distrust" of, and a hesitation to formally work with, ENGOs. In comparing the stance of public agencies with the informal and ENGO ability to work across borders, it appears that his assertion that "once you get higher up in that governmental hierarchy,

that border becomes more and more real” (“George”, American public agency employee, interview, February 5, 2008) defines the structure of, and processes inherent to, government agencies on both sides of the border (see Bruyneel 2009).

The section that follows describes two examples of transboundary grasslands conservation and management efforts across the Saskatchewan-Montana border in the FRBC region. These cases show that formal, state-led environmental management across the border has been increasingly complicated since 9/11, specifically with respect to communication, mobility, and the co-ordination of management efforts across the border. By contrast, informal environmental management efforts led by non-state actors (ENGOS and civil society) have been relatively stronger in the post 9/11 era. In these cases, while 9/11 was found to be a catalyst of significant changes to the border and the cross-border environmental relationship, the BSE Crisis was not found to have any direct effects.

3.7 CASES IN TRANSBOUNDARY ENVIRONMENTAL CO-OPERATION

3.7.1 Transboundary Fire Control

As fires burn indiscriminately across anthropogenic limits, their control necessitates interagency and transboundary co-operation. Interview participants on both sides of the border spoke of this need, and of the challenges to cross-border fire-fighting that have emerged since 9/11. According to one agricultural producer, the new discourse of security has pervaded traditional fire-fighting efforts in borderland communities. He recalled:

I remember there was a little family who bought an acre up there east of Killdeer [Saskatchewan], said there was a fire, and it isn't really far from the border, so they...everybody went down to the fire. Burned through the Canadian...the Saskatchewan side into Montana. They got that fire all out and they were having a can of beer after it was over – and they said they just cut a hole in the fence and went and put the fire out. Here come the Border Patrol guy, and he just kind of drove up there and looked around and waved and left...I suppose he was looking to see if there was anybody that had a turban on (“William”, American agricultural producer, interview, May 6, 2008).

Public agency employees on both sides of the border cited their fears that transboundary fire control would be limited by the post-9/11 border security regulations. However, for the most part, cross-border fire-fighting relationships have not been altered, as explained one American:

I've had some worry about fires that...would cross the border and whether or not there'd be impediments to managing fires, but there hasn't [been]...as much as I had been paranoid about that (“Carl”, American public agency employee, interview, December 12, 2007).

In fact, prairie fires were labeled as cohesive events, with the potential to bind communities across the border. And, while fire-fighting in the rural borderland was noted to be an enterprise led by volunteer forces, it was observed that entire communities would contribute in emergency domestic and cross-border events:

We have informal arrangements with them [Montana], where we fight fires together, so if there's a prairie fire on the border, now in the new environment, we call Canada Customs and they call the US side and let them know that we could be crossing the border...and after the fact, we'll actually report who went...because quite often we don't know. There's so many people will fight a fire that it'll be a lot more than people on our fire department. In that respect, we've always worked very well together. We have that common interest, and people really rally around a prairie

fire (“Alexander”, Canadian public agency employee, interview, November 27, 2007).

But, the new security regulations have, at times, impeded transboundary communication and co-ordination for fire control. For example, one American reported the following case:

The international boundary is an arbitrary boundary that really ceases communication...*[points at a map]* we had a fire that was up in this area that was coming across here. You guys [Canadians] called us, we sent our resources up there, but before long our federal government come along, prohibited both sides from crossing or communicating. And, I mean, I think communication’s the key. There’s some huge obstacles there (“Matthew”, American public agency employee, interview, February 5, 2008).

The case of prairie fires exemplifies one instance in which transboundary communication and co-ordination are required for effective management and control. For the most part, the fears of Canadian and American public agency land managers that the ability to fight fires would be restricted in the post-9/11 security environment have not been realized. However, at least one instance was cited in which cross-border communication and co-ordination between fire crews were halted at the border. This fire-fighting effort was hampered by broad security policies at the institutional level. By contrast, volunteer and community assistance in fighting fires has remained strong despite any changes to the border or the cross-border relationship after 9/11 or the BSE Crisis. This case made it clear that emergency response procedures for prairie fires must be defined and codified so that security measures do not impede necessary cross-border collaboration for the mitigation and control of such events.

3.7.2 Transboundary Invasive Weed Management

Exotic invasive weeds are defined as “plants of foreign origin that can directly or indirectly injure agriculture, navigation, fish or wildlife, or public health” (MWCA 2009).⁵² Invasive weeds in the transboundary FRBC region⁵³ threaten regional water quality and quantity for communities, recreation, and other watersheds; impair forage pastures; and displace native plants important for birds and wildlife (Briere 2010; MWCA 2009). Seventy percent of those interviewed (in 21/30 interviews) identified exotic invasive weeds as a significant threat to the FRBC region’s grassland environment.

Interviews also uncovered that invasive weeds represented the domain in which “...the most ground could be gained...on co-operative efforts” among stakeholder groups across the border (“Nick”, Canadian agricultural producer, interview, March 19, 2008). The State of Montana has a long history of invasive weed management, as the Montana Weed Control Association (MWCA) has been in existence for over 50 years (MWCA 2009). Now in its third year of operation, the Frenchman River-Wood River Weed Management Area (WMA) is the only WMA in Saskatchewan (Briere 2010). It operates along the border in the FRBC region,⁵⁴ and is thus “the first line of defense for weeds coming [into Saskatchewan] from the US” (Briere 2010). It is also ideally positioned to co-ordinate its activities with weed management efforts in

⁵² As defined in the Montana County Weed Control Act.

⁵³ Examples of regional invasive weeds cited by interview participants and by the Montana Weed Control Association (MWCA 2009) are Crested Wheatgrass, Cheat Grass, Leafy Spurge, Saltcedar, Spotted Knapweed, Purple Loosestrife, and Hound’s Tongue, although this is not a comprehensive list of the species of concern.

⁵⁴ The Frenchman River-Wood River WMA originally included 7 RMs: Val Marie, Old Post, Waverley, Mankota, Glen McPherson, Wood River, and Pinto Creek. Mankota and Glen McPherson no longer participate in the WMA, but the CMLN is now a member (Briere, 2010).

Montana, and the two jurisdictions have a strong working and learning relationship. However, in Canada, federal and provincial government involvement in the control of invasive weeds has been limited to WMA funding. Several interview participants noted that both levels of government need to do more to (pro)actively address the spread of invasive weeds. For example, one Canadian reiterated the problem of scant upper-level institutional support for transboundary conservation work, which has left transboundary action to the domain of informal networks and interpersonal relationships:

As far as I know there isn't a whole lot of co-operation between the two jurisdictions, Canada and the United States. I know they've been communicating with us about the Saltcedar that's currently in Montana, and could potentially expand its range...but I don't think there's a real process for communication...there might be a particular person within an agency that's proactive and...wants to get this done ("Lisa", Canadian public agency employee, interview, December 5, 2007).

The reported lack of formal transboundary communication and co-operation to control invasive weeds was troubling, given the repeated claims of the necessity for transboundary coordination in this regard. For example, it was suggested that "there's a lot of...bad ones [weeds] coming up from the south that we won't be able to stop if we don't partner with the Americans ("Lois", Canadian agricultural producer, interview, June 29, 2007).

The case of transboundary invasive weed management also exemplified that the border created a barrier across which information had difficulty flowing. For example, while American ENGO employee "Kate" asserted, "...at least on our side of the border...we're 99.9% weed-free" (interview, December 11, 2007), some Canadian respondents contended that the invasive

weed problem was worse in Montana than Saskatchewan. Although it was unclear which jurisdiction had worse invasive weed problems, it was clear that more formal weed control work was being done in Montana than in Saskatchewan. Through its relative inaction in controlling invasive weeds, Canada was implicated as being the source of many invasive weeds spreading into the United States (“Lisa”, Canadian public agency employee, interview, December 5, 2007). However, issues originating south of the border, such as restrictions on the cross-border movement of biological products for integrated pest management (IPM), were also noted to complicate the control of invasive weeds:

We have a plant down here called Hound’s Tongue, which is a noxious weed. And in Canada, they have a bug that eats Hound’s Tongue effectively...and down here, we won’t let the bug into the United States...and then we have this bureaucratic process of approval that we have to go through...it would be really nice to get the Canadian bug...’cause I’ve got lots of Hound’s Tongue problems. So there’s things that would be nice to see done better (“Carl”, American public agency employee, interview, December 12, 2007).

Invasive weed management was therefore found to be a case in which cross-border, multistakeholder co-operation both occurred and needed to be strengthened. The learning relationship described between weed control efforts in Saskatchewan and Montana was a promising sign with respect to informal transboundary environmental management. However, a low level of understanding regarding the severity of the weed problem was evident in both Saskatchewan and Montana. In Saskatchewan, the need for increased formal, governmental support for invasive weed management was identified. In Montana, stringent security regulations were found to inhibit the cross-border transfer of beneficial insects for IPM. Such

barriers to co-operation in invasive weed management efforts may be exacerbated by increasingly limited interagency communication across the border following 9/11.

3.8 CONCLUSION

This paper examined the effects of two twenty-first century events on the Canada-US border and the relationships across it: 9/11 at the international/national level, and the BSE Crisis at the regional/local level. Cognizant of the claim that the Canada-US environmental relationship is driven by regional, subnational relations, this paper tested the claim that Canada-US environmental relations are only indirectly affected by divergences in other policy domains (Vannijnatten 2004). It did so by examining the effects of 9/11 and the BSE Crisis on the Saskatchewan-Montana border, and on the cross-border relationships among actors with a stake in grasslands conservation and management in the Frenchman River-Bitter Creek subregion of this borderland.

This paper confirmed that both 9/11 and the BSE Crisis inflamed existing tensions in the Canada-US relationship, rather than creating new ones. This paper demonstrated that post-9/11 border security policies and regulations had equal impacts on both American and Canadian residents of the FRBC borderland region. But, Americans demonstrated higher levels of frustration with border security policies than did Canadians. The security policies and regulations implemented since 9/11 were found to have significant impacts on the Saskatchewan-Montana border and the relationships across it. First, the physical appearance of the border was altered by the increased security presence along it. Second, it had become more difficult to cross

the border, due, for example, to the WHTI requirement for all entrants to the United States to hold a passport. The border was implicated in contributing to rural depopulation by restricting residents' access to services and amenities; and post-9/11 border security changes have had clear implications for social cohesion in rural borderland communities by limiting cross-border travel and socialization. With respect to the work of public agencies across the border, although interjurisdictional work was complicated prior to 9/11, further reductions in agencies' cross-border mobility since 9/11 have significantly reduced interagency communication, co-operation, and understanding across the border. As a result, formal, transboundary environmental co-operation by public agencies has been increasingly difficult since 9/11. In the domain of grasslands conservation and management in the FRBC region, much transboundary action has been led by informal networks of state- and non-state (ENGO and civil society) actors. In contrast to the shared impacts of 9/11, the negative impacts of the BSE Crisis were borne almost exclusively by Canadians. In fact, American participants largely dismissed the BSE Crisis as a significant event in the region. However, while some Canadians claimed that the tensions inflamed by the BSE Crisis have faded, others expressed lingering bitterness over American policy decisions related to BSE. The potential implications of these residual tensions on subnational, cross-border relationships merit further study.

The cases of transboundary fire control and invasive weed management illustrated how regional, cross-border environmental management has been affected by changes in the border since 9/11. In both cases, the strength of informal networks of actors was highlighted. In the case of transboundary fire control, it was found that although the new border security policies

have occasionally impeded cross-border fire-fighting efforts, for the most part, informal fire-fighting relationships between jurisdictions have continued to be successful. In the case of invasive weed management, informal transboundary cooperative and learning relationships led by non-state actors have generally been strong. However, the border represents a communication, understanding, and sometimes a physical, barrier to full and formal collaboration for weed control and management.

This paper suggests that in the FRBC region, Canadians and Americans share a willingness to co-operate across the border in environmental management at the level of informal professional and civic networks. They also share a reluctance to communicate and co-operate beyond jurisdictional boundaries at the highest levels of decision- and policy-making authority in government agencies. The American national security policies implemented after 9/11 have reduced abilities to travel, interact, and communicate across the Saskatchewan-Montana border, complicating transboundary environmental co-operation for grasslands conservation and management in the FRBC region. While the regional and local impacts of the BSE Crisis are less understood, the erosion of trust among some local communities and individuals might also have long-term effects on cross-border relationships at the regional and local levels. This paper thus suggests that international- and national-level events, unrelated to the environment, can indeed have significant and direct effects on the subnational relationships driving the Canada-US environmental relationship. In the case of the Plains-Prairies borderland, the international/national event (9/11) exhibited greater power to change the subnational environmental relationship than did the regional/local event (the BSE Crisis). While more research involving

other Canada-US borderlands, and other catalysts of change in the border and relationships across it, are required to confirm and corroborate these results, this research advances understanding of how policy externalities can impact international relations. Furthermore, it contributes to our understanding of the interplay among the domains of foreign policy, security policy, and environmental policy.

3.9 REFERENCES

- Adams, M. 2003. *Fire and Ice: The United States, Canada and the Myth of Converging Values*. Toronto: Penguin.
- Bennett, J.W. and S.B. Kohl. 2001. *Settling the Canadian-American West, 1890-1915: Pioneer Adaptation and Community Building, An Anthropological History*. Lincoln and London: University of Nebraska Press.
- Briere, K. 2010. Producers, RMs take aim against invasive weed. *The Western Producer*, January 7, 2010. <http://www.producer.com/Print.aspx?aid=16061> (accessed March 9, 2010).
- Brunet-Jailly, E. 2006. Security and Border Security Policies: Perimeter or Smart Border? A Comparison of the European Union and Canadian-American Border Security Regimes. *Journal of Borderlands Studies* 21(1): 3-21.
- Bruyneel, S. 2009. Thinking Down or Acting Up? Governmental and Grassroots Environmental Thought and Action in the Transboundary Northern Plains. *Environments* 36(3): 55-72.

- Canadian Broadcasting Corporation (CBC). 2007. Exports of older cattle begin again, but doubts remain among farmers. *CBC News*, November 19, 2007. Available: <http://www.cbc.ca/canada/saskatchewan/story/2007/11/19/exports-cattle.html>. Accessed November 19, 2007.
- Charlebois, S. and J. Labrecque. 2007. Processual Learning, Environmental Pluralism, and Inherent Challenges of Managing Socioeconomic Crisis: The Case of the Canadian Mad Cow Crisis. *Journal of Macromarketing* 27(2): 115-125.
- Christie, S. 2009. *A Socioeconomic Profile of the Frenchman River-Bitter Creek Conservation Area, Southwestern Saskatchewan and Northern Montana*. Unpublished Report for Parks Canada-Grasslands National Park, Crossing the Medicine Line Project. 185pp.
- Crossing the Medicine Line Network (CMLN): The Northern Mixed Grass Transboundary Conservation Initiative. No Date. *About Us*. Available: www.crossingthemedicineline.net/about_us.htm. Accessed October 7, 2009.
- Davidson, D.; Hammond, B. and K. Mintz. 2010. Atlas of the Land Entry Ports on the Canada-US Border. *Border Policy Brief* 5(1): 6pp. Bellingham, Washington: Border Policy Research Institute, Western Washington University. Available: <http://www.western.edu/bpri>. Accessed February 17, 2010.
- Fargey, P. (Principal Investigator). 2005. *Crossing the Medicine Line: The Frenchman River-Bitter Creek Conservation Action Plan*. 2005-06/2007-08. Unpublished Proposal for Parks Canada, 16pp.
- Fargey, P.; Tuckwell, J.; Carlson, J.; Bristol, B.; Davis, S.; Scissons, R.; Piwowar, A.;

- Wiltse, E.; Forrest, S. and K. Murphy. 2004. Frenchman River-Bitter Creek Conservation Site Plan. In Smith Fargey, K. (ed.). *Shared Prairie-Shared Vision: The Northern Mixed Grass Transboundary Initiative*. Conservation Site Planning Workshop Proceedings and Digital Atlas. Regina, SK: Canadian Wildlife Service, Environment Canada. CD-ROM.
- Farson, S. 2006. Rethinking the North American Frontier After 9/11. *Journal of Borderlands Studies* 21(1): 23-45.
- Forrest, S.; Martin, B.; Bruyneel, S.; McAdam, S.; Fargey, P.; Carlson, J. and J. Nicholson. 2010. *Cross-Border Conservation Initiatives*. Crossing the Medicine Line Network. 2pp. (poster).
- Forrest, S.C.; Strand, H.; Haskins, W.H.; Freese, C.; Proctor, J. and E. Dinerstein. 2004. *Ocean of Grass: A Conservation Assessment for the Northern Great Plains*. Northern Plains Conservation Network and Northern Great Plains Ecoregion. Bozeman, MT: WWF-US.
- Furtan, W.H. and B.M. van Melle. 2004. Canada's Agricultural Trade in North America: Do National Borders Matter? *Review of Agricultural Economics* 26(3): 317-331.
- Harrington, C., Curtis, A. and R. Black. 2008. Locating communities in natural resource management. *Journal of Environmental Policy and Planning* 10(2) 199-215.
- LaDow, B. 2001. *The Medicine Line: Life and Death on a North American Borderland*. New York and London: Routledge.
- Le Roy, D.G. and K.K. Klein. 2005. Mad Cow Chaos in Canada: Was It Just Bad Luck or Did

- Government Policies Play a Role? *Canadian Public Policy/Analyse de Politiques* 31(4): 381-399.
- McKinsey, L.S. and V. Konrad. 1989. *Borderlands Reflections: The United States and Canada*. Orono, ME: Borderlands.
- McManus, S. 2005. *The Line Which Separates: Race, Gender, and the Making of the Alberta-Montana Borderlands*. Edmonton: University of Alberta Press.
- Montana Weed Control Association (MWCA). 2009. Available: <http://www.mtweed.org>. Accessed March 9, 2010.
- Morris, P.S. 1999. Regional Ideas and the Montana-Alberta Borderlands. *The Geographical Review* 89(4): 469-490.
- Munton, D. 1980-1981. Dependence and Interdependence in Transboundary Environmental Relations. *International Journal (Canada)* 36(1): 139-184.
- Newman, D. 2006. The Lines that Continue to Separate Us: Borders in our 'Borderless' World. *Progress in Human Geography* 30(2): 143-161.
- Newman, D. 2003. On Borders and Power: A Theoretical Framework. *Journal of Borderlands Studies* 18(1): 13-26.
- Nicol, H. 2006. The Canada-US Border After September 11th: The Politics of Risk Constructed. *Journal of Borderlands Studies* 21(1): 47-68.
- O'Neill, K. 2005. How Two Cows Make a Crisis: US-Canada Trade Relations and Mad Cow Disease. *The American Review of Canadian Studies* 35(2): 295-319.
- Parks Canada. 2009. *Grasslands National Park of Canada Proposed Management Plan for*

- Public Consultation*. Available: www.pc.gc.ca/~media/pn-np/sk/grasslands/plan2009-06-10_e.ashx. Accessed October 21, 2009.
- Parks Canada. 2008. *Grasslands National Park of Canada: State of the Park Report 2007*. Available: www.pc.gc.ca/~media/pn-np/sk/grasslands/REP_SPR_e.ashx. Accessed January 19, 2010.
- Pedynowski, D. 2003. Prospects for Ecosystem Management in the Crown of the Continent Ecosystem, Canada-United States: Survey and Recommendations. *Conservation Biology* 17(5): 1261-1269.
- Reed, M.G. 2007. Uneven environmental management: a Canadian comparative political ecology. *Environment and Planning A* 39(2): 320-338.
- Riley, J.L.; Green, S.E. and K.E. Brodribb. 2007. A Conservation Blueprint for Canada's Prairies and Parklands. Toronto: Nature Conservancy of Canada.
- Roy, J. 2006. Security and Borders in a Digital Age: Implications for Canadian Government and North American Governance. *Journal of Borderlands Studies* 21(1): 87-107.
- Schwartz, A.M. 2000. The Canada-US Relationship at the Turn of the Century. *The American Review of Canadian Studies* 30(2): 207-226.
- Singh, J. and P. Ganster. 2003. Transboundary Environmental Co-operation: A Conversation on Issues in Research and Methodologies. *Journal of Borderlands Studies* 18(1): 51-60.
- Smith Fargey, K. (ed.). 2004a. *Shared Prairie-Shared Vision: The Northern Mixed Grass*

- Transboundary Initiative*. Conservation Site Planning Workshop Proceedings and Digital Atlas. Regina, SK: Canadian Wildlife Service, Environment Canada. CD-ROM.
- Smith Fargey, K. 2004b. Introduction. In Smith Fargey, K. (ed.). *Shared Prairie-Shared Vision: The Northern Mixed Grass Transboundary Initiative*. Conservation Site Planning Workshop Proceedings and Digital Atlas. Regina, SK: Canadian Wildlife Service, Environment Canada. CD-ROM.
- Stefanick, L. 2009. Transboundary Conservation: Security, Civil Society and Cross-Border Collaboration. *Journal of Borderlands Studies* 24(2): 15-37.
- The Nature Conservancy (TNC), Northern Great Plains Steppe Ecoregional Planning Team. 1999. *Ecoregional Planning in the Northern Great Plains Steppe*. The Nature Conservancy.
- Vannijnatten, D. 2004. Canadian-American Environmental Relations: Interoperability and Politics. *The American Review of Canadian Studies* 34(4): 649-664.
- Widdis, R.W. 2006. *Voices from Next Year Country: An Oral History of Rural Saskatchewan*. Regina: Canadian Plains Research Center.
- Widdis, R.W. 1997. Borderland and Interaction in the International Region of the Great Plains: An Historic-Geographic Perspective. *Great Plains Research* 7(1): 103-137.

CHAPTER 4

SHARED LANDSCAPE, DIVERGENT VISIONS? THE PROSPECTS FOR TRANSBOUNDARY ENVIRONMENTAL MANAGEMENT IN THE NORTHERN GREAT PLAINS

ABSTRACT

Ecosystem-based management (EBM) is one approach to environmental management that may be appropriate for dealing with emerging, complex environmental problems that transcend jurisdictional boundaries. However, while there is academic consensus on what EBM means, conceptual murkiness continues to hamper the implementation of EBM approaches in real-world environmental management contexts.

This paper evaluates the prospects for implementing EBM across the Saskatchewan-Montana border in grasslands conservation and management efforts. This region demonstrates many characteristics of an ecosystem or 'shared landscape'. However, it also exemplifies that anthropogenic borders represent very real divides in political, philosophical, legal, and sociocultural regimes. As such, 'divergent visions' for landscape and resource planning, management and conservation emerge across these borders. This paper suggests that, while true cross-border EBM might not be practical in the Northern Great Plains region, Saskatchewan and Montana should collaborate in planning and goal-setting so that the tenets of EBM can be met within the limits of sovereign national policies, laws and programs.

4.1 INTRODUCTION

Contemporary environmental problems transcend the borders between nations and resource sectors, and involve multiple disciplines and actors in their study and management (Moore 2008; Carter 2007; Castree 2004; Barrow 1999). Therefore, the solutions to these problems require forms of environmental management that can work across borders. One approach to environmental management that might be adopted to deal with increasingly complex environmental problems is ecosystem-based management (EBM).⁵⁵ EBM embraces systems thinking and the recognition of the complexity and dynamism of social and ecological systems; it requires the consideration of spatial and temporal scales in environmental management; it seeks to manage for ecological integrity, including conserving species, population diversity, dynamic processes and representative systems; it is based on ecologically- and not politically-defined boundaries; it uses adaptive management to deal with uncertainty; and it incorporates a range of stakeholders in collaborative decision making processes by embracing both scientific and traditional/local knowledge (Cortner and Moote 1999; Slocombe 1998a; Grumbine 1997,1994). This emphasizes the need to adopt governance approaches that meaningfully incorporate multiple stakeholders in environmental decision-making at different scales (Reed and Bruyneel 2010; Norman and Bakker 2009).

EBM represents a radical shift from the enterprise of natural resource management (NRM), which served as the state's dominant approach to environmental management until the

⁵⁵ Slocombe (1998a) differentiates "ecosystem management" from "ecosystem-based management" as the former is the domain of ecological science, operating at relatively small spatial scales; and the latter emphasizes that *activities* within an ecosystem can be managed, taken from an ecosystem, or integrative and transdisciplinary, perspective. This paper adopts the latter terminology, though both are interchangeable (Slocombe, 1998b).

final decade of the twentieth century (Malone 2000; Szaro *et al.* 1998; Thomas 1996; Grumbine 1994). This approach “...divide(d) ecosystems into spatially and conceptually fractured jurisdictions” (Brogden and Greenberg 2003: 290); and focused on the manipulation, harvesting, and commodification of resources (Mitchell 2002; Cortner and Moote 1999). While a push to embrace EBM as a management paradigm in many North American government agencies and departments was evident in the 1990s and early 2000s (Malone 2000; Cortner and Moote 1999; Fitzsimmons 1998, 1996; Szaro *et al.* 1998; Grumbine 1997; Thomas 1996), the lack of uniform understanding of what the term really means and how it may be ‘done’, has complicated its adoption and implementation (e.g. Cortner and Moote 1999; Fitzsimmons 1998, 1996; Slocombe 1993).

Transboundary situations offer particular challenges for EBM, particularly in international settings, as a single ecosystem is subject to multiple, and often divergent, institutional systems. In North America, much of the academic literature on the subject of EBM across international borders focuses on the Great Lakes ecosystem (e.g. Hildebrand *et al.* 2002; Jones and Taylor 1999; Hartig *et al.* 1998; Slocombe 1998b). The literature that examines terrestrial EBM across international borders emphasizes transboundary conservation, in which the landscape in question is protected on both sides of the border(s) dividing it (such as the Great Limpopo Transfrontier Park in South Africa, Mozambique, and Zimbabwe (e.g. Lunstrum 2008; Wolmer 2000) and the Waterton-Glacier International Peace Park between Alberta, Canada and Montana, USA (e.g. Stefanick 2009; Pedynowski 2003; Slocombe 1998b, 1993)). Finally, questions of environmental governance across borders appear to be centred around transboundary water governance

(Norman and Bakker 2009; Alper 2004; see also Reed and Bruyneel 2010). Each of these studies documents some level of success in EBM across political borders, but also highlights the potential challenges to transboundary co-operation for environmental management. For example, Stefanick (2009) and Alper (2004) emphasized the importance of informal networks, including ENGOs and civil society, in fostering Canada-US environmental co-operation. With respect to formal, government-led transboundary conservation, Pedynowski (2003) found Canadians to be less likely than Americans to support transboundary conservation. Interestingly, Quinn and Theberge (2004) concurred that Canada generally had fewer grassroots initiatives and less formal institutional support for EBM activities than the USA. Pedynowski (2003) identified cultural and legal differences, differences in political timing and the tenure of Administrations, and difference in federal and state/provincial power relations as factors complicating transboundary, Canada-US co-operation. And, she suggested that increased time and resources, clear public support, stronger political will, common needs and values across the border, the development of interagency relationships, and fostering mutual understanding and trust could increase the prospects for Canada-US transboundary co-operation. Norman and Bakker's (2009) study of transboundary water governance elaborated upon and distilled many of these findings by explicitly identifying a set of drivers of, and barriers to, transboundary co-operation (Table 4.2). However, there remains a dearth of literature addressing the prospects for transboundary environmental management and environmental governance in terrestrial landscapes that either lack formal designation for protection, or that have such designation on only one side of the border(s) dividing them. This research attempts to address this gap.

This paper examines areas of convergence and divergence in grasslands conservation and management regimes across the Canada-US border in the Northern Great Plains region. It interrogates the feasibility of managing the grasslands of this region as an ecosystem, rather than as distinct ‘Canadian’ and ‘American’ parcels of land. In doing so, it is cognizant of the philosophical, political, regulatory, and socioeconomic differences created and represented by the border. The Northern Great Plains is an ideal site in which to study EBM. In this region, the international border has been referred to since its delimitation as an ‘artificial’ or ‘arbitrary’ line dividing an ecologically and socially similar area devoid of naturally distinguishing features (Erickson *et al.* 2004; LaDow 2001; Morris 1999; Widdis 1997; McKinsey and Konrad 1989). Confirming the arbitrary nature of the border are the host of transboundary (actively spanning the border) and common (existing on both sides of the border) threats to the grassland environment identified in the literature and by those living and working in the region. However, the international border still represents the division between two nations and their different political systems, philosophical orientations, legal and regulatory regimes, economies, and sociocultural systems. And, divergent landscape planning and management regimes thus exist across the border.

In the paper’s first section, I interrogate the extent to which issue and policy convergence across the border might create a ‘shared landscape’ supporting transboundary EBM. I then explore the differences in Canadian and American political, regulatory and managerial regimes for the grasslands, and how these contribute to ‘divergent visions’ for environmental management across the border. I compare these findings to the drivers of, and barriers to,

transboundary co-operation identified in the literature and explicitly defined by Norman and Bakker (2009). Next, I examine the balance between these areas of convergence and divergence to evaluate the feasibility of greater harmonization of grasslands planning, management and conservation efforts across the international border to achieve EBM both in theory *and* in practice. Specifically, I confirm that EBM is difficult to implement, as has been found in the literature. While many citizens might support the *notion* of dissolving political borders to more effectively manage the environment, support for *real* political integration in North America is low (Kanji 1996). Furthermore, while many agencies might adopt EBM approaches in principle, definitional and conceptual murkiness have complicated the practical implementation of EBM (Cortner and Moote 1999; Fitzsimmons 1998, 1996; Slocombe 1993).

4.2 STUDY AREA

This research is set in the Frenchman River-Bitter Creek (FRBC) Conservation Area, a transboundary subregion along the Saskatchewan-Montana border. The FRBC Area encompasses the Bitter Creek-Frenchman portion of Montana's Northwestern Glaciated Plains, the Frenchman River Valley in Saskatchewan and Montana, and the East and West Blocks of Grasslands National Park in southwestern Saskatchewan (Fargey *et al.* 2004). It includes all or part of eleven Rural Municipalities (RMs) in Saskatchewan and the northern reaches of Montana's Phillips and Valley Counties (Figure 4.1). The FRBC Conservation Area was one of the six large landscapes in the transboundary Northern Great Plains for which a conservation site

plan was developed through a series of multi-partner and multijurisdictional⁵⁶ conservation planning workshops held by the Northern Mixed Grass Transboundary Conservation Initiative (NMGTCI) in 2003-2004 (Smith Fargey 2004b).⁵⁷ The FRBC Area is the current area of focus for the NMGTCI's successor, the Crossing the Medicine Line Network (CMLN)⁵⁸ (Forrest *et al.* 2010); as well as for Environment Canada, Parks Canada-Grasslands National Park, and their partners both provincially and across the border in Montana (Fargey 2005; Smith Fargey 2004b).

4.3 METHODOLOGY

This research is the product of multiple qualitative methods. I conducted a set of 30 interviews in 2007-2008 with key informants from public agencies (federal, state/provincial, and county/municipal government agencies and departments) and environmental nongovernmental

⁵⁶ Including representatives from the Canadian and American federal governments, representatives from the provincial governments of Saskatchewan and Alberta, representatives from the Montana State government, and representatives of environmental nongovernmental organizations centred in both Canada and the United States (Smith Fargey 2004b).

⁵⁷ Conservation Site Plans were also developed for the Alberta Milk River (AB), Sage Creek/Southwest Pasture Complex (AB/SK/MT), Old Man on His Back (SK), Climax Region (SK), and Whitewater Wetlands Areas (SK/MT) (Smith Fargey 2004b).

⁵⁸ In 2006, several members of the NMGTCI formed the CMLN, which strives to “build broader awareness and forge a deeper commitment to conserve the region’s native biodiversity through the engagement of stakeholders, clarification of conservation priorities and stakeholder interests, development of trans-boundary partnerships, and co-ordinated program delivery” (CMLN ND). The CMLN is active in promoting interagency and cross-border communication, identifying areas of conservation and research priority, and fostering cross-border research projects.

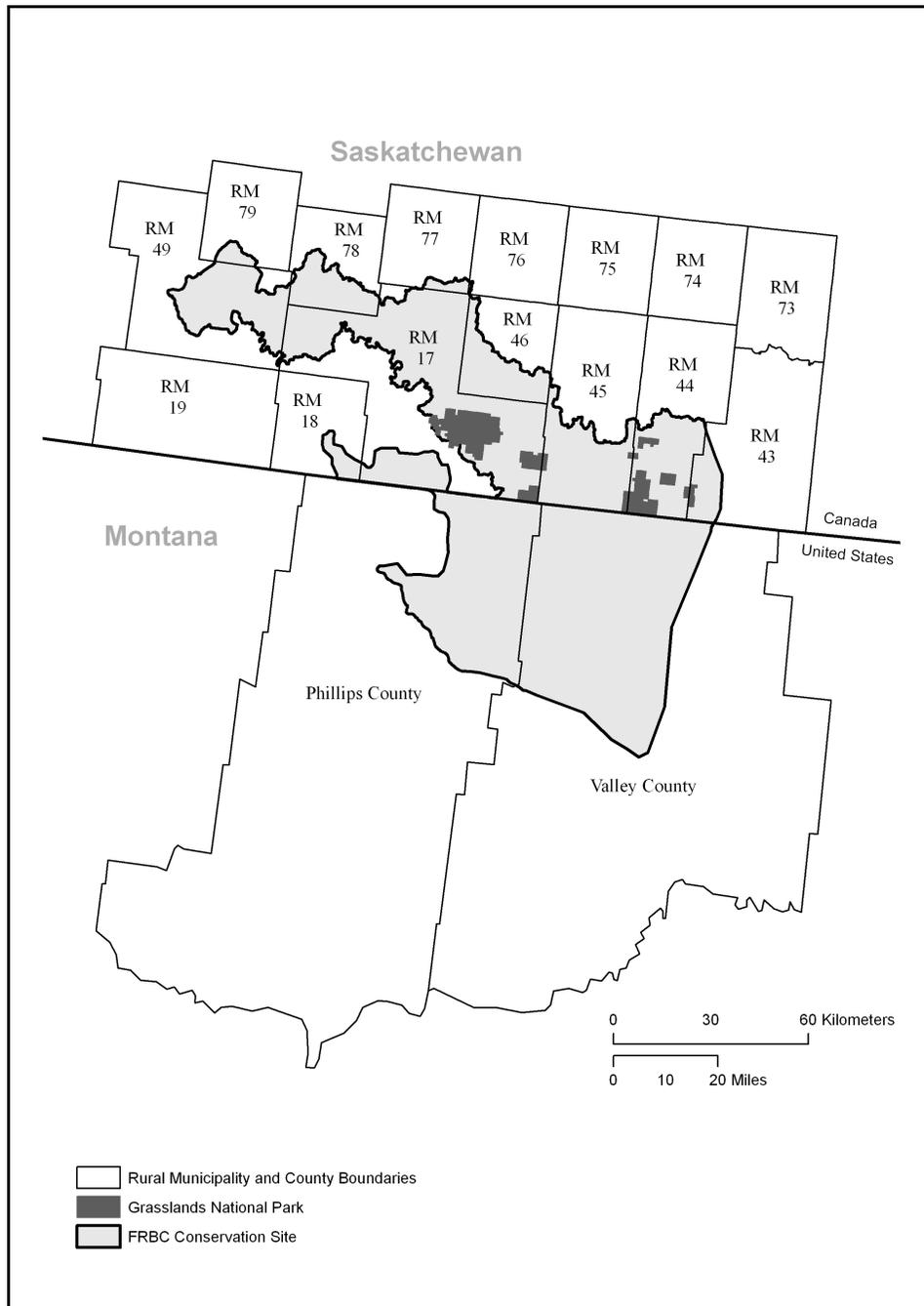


Figure 4.1: The FRBC Area

organizations (ENGOs), as well as with agricultural producers, in the FRBC Area.⁵⁹ These interviews were semi-structured, lasted an average of one hour, and followed a consistent schedule of questions under the themes of ‘conservation attitudes and values’, ‘environmental legislation and policies’, ‘ecosystem management’, and ‘transboundary attitudes and relations’. Each interview was transcribed verbatim. To ensure data quality and validity, each participant was given the opportunity to review and revise his or her interview transcript prior to its analysis. I analyzed the revised transcripts using deductive and inductive coding methods. Field notes from multiple visits to the FRBC region from 2005-2009 supplemented the data attained from the interviews.

In addition to this primary data, I reviewed selected ecoregional conservation planning documents published by regional ENGOs, with attention to their objectives and achievements. To be selected, the documents had to deal substantively with grasslands planning and conservation in Saskatchewan and/or Montana; they had to span the international border; and they had have been published within the last ten years to maintain policy and issue relevancy.

4.4 SHARED LANDSCAPE?

The literature has described the international border in the Northern Great Plains region as ‘artificial’ and ‘arbitrary’. These descriptions were confirmed by the interviews conducted.

⁵⁹ 19 interviews were conducted with Canadian participants and 11 interviews with American participants. This does not, however, reflect the total number of interview participants, as 5 interviews were conducted with groups of 2-3 participants. Group interviews were conducted on large, family-operated ranches and in public agencies and ENGOs when several people with similar mandates but different roles expressed interest in participating in this project.

More than half of those interviewed (16/30 interviews) explicitly referred to the border as artificial with respect to wildlife. Strong cross-border social ties between humans were also identified. While public agency employees on both sides of the border cited interpersonal relationships and informal professional networks as the primary vehicles for transboundary communication and conservation work, both Canadian and American agricultural producers highlighted the importance of family and community ties across the border in their daily lives. Regardless of the fact that the border demarcates different citizenships to residents, agricultural producers overwhelmingly referred to producers on the other side of the Line as their neighbours. However, cross-border interaction at all levels has been greatly reduced since the September 11, 2001 (9/11) terrorist attacks on the United States, and the resulting implementation of stringent border security measures.

Interviews with those living and/or working in the FRBC Area corroborated the existence of several common or transboundary threats to the region's grassland environment identified in the literature (e.g. Erickson *et al.* 2004; Forrest *et al.* 2004). Table 4.1 presents the range of threats cited in the interviews. Canadian participants, including those from public agencies, identified the spread of exotic invasive weeds as their primary national and transboundary concern. They lamented the lack of action by their federal and provincial governments to proactively address the spread of invasive weeds. The conversion of grasslands to cultivated land was the next most pervasive threat identified. Several interviewees in both countries worried that, if sustained over time, surges in grain prices (related to the demand to grow crops for conversion to biofuels) could render ranching and conservation economically impractical.

Table 4.1: Threats to the Regional Grassland Environment by Frequency of Citation

Threat	Identified for Saskatchewan	Identified by Canadians as a Transboundary Threat	Identified for Montana	Identified by Americans as a Transboundary Threat	Total
Invasive Weeds	8	6	3	2	19
Conversion to Annual Cropland; High Grain Prices; Biofuels; Biotechnology	8	2	5	3	18
Energy Development (Oil, Gas, Wind, Coalbed Methane)	4	3	3	3	13
Improper Management; Overgrazing; (Historical) Incentives to Break Land	7	1	2	0	10
Climate Change/ Drought	2	1	4	2	9
Water Sharing/Shortage	1	3	1	4	9
High Land Prices; Subdivision; Rural Depopulation and Loss of Ranching	1	3	3	2	9
Fragmentation (Energy Developments; Roads/ Highways; Agriculture; Settlement)	4	0	1	1	6
General Development (Human; Agricultural; Industrial)	2	0	2	0	4
Migratory Species	0	2	0	2	4
Air Quality	1	1	0	1	3
Disease (CWD; BSE)	0	1	1	1	3
Different Laws/Programs Across the Border	0	3	0	0	3
Economics/Subsidies	1	1	1	0	3
Recreational Uses and Damage	2	0	1	0	3
Removal of Disturbance (Fire; Grazing)	1	0	1	1	3
External Land Management	1	0	1	0	2

More Canadian than American participants cited general ‘landscape fragmentation’, from energy development, transportation corridors, or settlements, as a major national and transboundary threat to the region’s grasslands. However, when fragmentation was explicitly considered as a result of energy exploration, extraction, and transmission, both Canadian and American participants showed high levels of concern for the sustainability of their grasslands.

More Americans than Canadians cited climate change, droughts, and regional water shortages as key threats to the grassland environment. On both sides of the border, social concerns such as rural depopulation, the decline of ranching, the loss of traditional/local knowledge, and the influence of external rather than local decision-making in grasslands management were also identified as significant threats. American participants were particularly concerned about processes of rural gentrification, including increased recreational values of land, amenity migration, and absentee landowners.⁶⁰ For example:

The recreational value of these properties is phenomenal. The largest land owner in Valley County no longer lives in Valley County. Valley County is a traditional large cattle ranching place. The present largest fee land owner...in this county lives in Boone, North Carolina, and has a recreational interest. Their (*sic*) interest is coming out here for two, three weeks out of a year and hunting...So therefore in order to conserve these lands, you gotta understand that the values of what these lands can produce off them...[is] greatly changing right now. And we have to adapt with that value system that is changing before us very vastly and quickly, and develop new strategies to achieve that. Anytime you have absentee land owners, it’s very difficult to conserve or manage... (“Matthew”, American public agency representative, interview, February 8, 2008).

⁶⁰ This corroborates existing studies documenting the conflicts pitting ranchers and other primary resource-reliant economies versus wealthy, ex-urban amenity migrants in the American West (see Sheridan 2007, 2001; Hurley and Walker 2004; Walker and Hurley 2004; Brogden and Greenberg 2003; Walker 2003; Walker and Fortmann 2003; Singleton 2002; Wilson 1999). By contrast, both American and Canadian participants noted that these were not (yet) significant issues in Canada.

Therefore, as the FRBC Area is characterized by shared or common issues and threats, the 49th parallel may be understood as an arbitrarily-placed border illogically dividing an ecosystem. The section that follows interrogates how the international border acts to complicate the management of this ecosystem by dividing it into discrete parcels of land under the control of separate jurisdictions.

4.5 DIVERGENT VISIONS?

The FRBC Area is fragmented in several ways. First, the landscape is bisected by the 49th parallel border dividing Canada and the United States. Second, the area is subject to institutional fragmentation, manifested as the compartmentalization of the environment into discrete sectors to facilitate management. This is a hallmark of traditional NRM approaches (Broden and Greenberg 2003; Cortner and Moote 1999), and was evident in that approximately twenty different ENGOs and federal, provincial, state, or municipal/county government agencies, departments, or branches were represented in the interview sample. Each of these had its own thematic and geographical mandate. Employee knowledge was constrained by these mandates, and communication was rare between and among these entities (Bruyneel 2009).⁶¹ It was noted that intra-national communication across agency or state/provincial lines was difficult, and that these difficulties were exacerbated when attempting to interact across the international border.

⁶¹ Most interview participants, both Canadian and American, admitted to or displayed incomplete knowledge and understanding of conditions, regulatory instruments, and responsible institutions across the international border. More troubling, many admitted to being unclear about the mandates and/or activities of other agencies within the same jurisdiction.

The latter, in particular, was noted to have become more difficult given the recent ‘thickening’ of the Canada-US border since the 9/11 terror attacks.

Finally, the FRBC Area is fragmented by different land tenure systems on either side of the border. On the Canadian side, land tenure in the FRBC area is a patchwork of Crown and federal lands (including Grasslands National Park), provincial lands, and private (deeded and leased) lands. On the American side, no analogous protection to Grasslands National Park exists. The landscape is a mixture of private and State lands, and lands managed under the multiple use mandate of the (federal) Department of Interior-Bureau of Land Management. Furthermore, in Montana, the FRBC area borders two Reservations⁶² and their tapestries of federal, tribal, allotted, and private lands. The Charles M. Russell National Wildlife Refuge lies to the south. On both sides of the border, some lands have been purchased directly, or indirectly through conservation easements, by ENGOs for conservation purposes. The fact that the majority of land on both sides of the border in the Northern Plains is privately owned⁶³ presented a significant challenge for land managers:

on both sides of the border...we have lots of individual land owners all making individual decisions...and all the private land owners subscribe to some different management philosophy. So that’s a big obstacle (“Christopher”, American ENGO employee, interview, May 8, 2008).

⁶² Fort Peck at to the east and Fort Belknap to the west.

⁶³ One American ENGO employee noted that “90 percent of the lands in United States on the Great Plains are privately owned” (“Christopher”, interview, May 8, 2008). It was also confirmed in the interviews that the majority of grassland in Saskatchewan is privately owned.

In fact, in approximately 17 per cent (5/30) of interviews, it was noted that transboundary environmental co-operation was limited by the impossibility of uniting all of the disparate actors and interests within a single jurisdiction, let alone across the international border.

The grasslands of the Northern Great Plains are thus divided jurisdictionally, institutionally, and by land tenure regimes. The following section describes the range of obstacles to transboundary communication and co-operation induced by this fragmentation.

4.5.1 Obstacles to Transboundary Co-operation

In their study of water governance across the Canada-US border, Norman and Bakker (2009) explicitly identified a range of drivers promoting, and barriers complicating, transboundary co-operation. Many of these manifested in the FRBC area. The drivers of transboundary co-operation identified in the FRBC area included the strength of informal, professional networks and interpersonal relationships that acted to bond specific stakeholder groups across the border. Barriers to transboundary co-operation reflected the flip-side of the drivers, for example, informal and personal relationships (driver) versus incongruent and inert government and governance structures (barrier); a lack of trust (barrier) versus transparency (driver); and data accessibility (driver) versus restrictions in obtaining data (barrier) (Norman and Bakker 2009). The barriers to transboundary co-operation found in the FRBC area may be linked to the philosophical, political, regulatory, institutional, and sociocultural differences created by the border (Table 4.2). These serve as physical and psychological barriers to cross-border communication and co-operation.

Table 4.2: Drivers of and Barriers to Co-operation Across the Saskatchewan-Montana Border (adapted from Norman and Bakker 2009: 108).

Drivers	Barriers	Type of Difference
Informal Contacts	Mismatched Governance Structures	Political Regulatory Institutional
Established Networks	Different Governance Cultures	Philosophical Political Regulatory
Personal Relationships	Different Mandates	Political Regulatory Institutional
	Lack of Jurisdictional Integration	Political Regulatory Institutional
	Federal Jurisdiction Tempers Regional Action	Political Institutional
	Lack of Leadership	Institutional
	Asymmetrical Participation	Institutional
Specific Issues	Lack of Institutional Capacity	Institutional
Crisis	Lack of Financial Resources	Institutional
Opportunity-Driven		
Transparency	Gaps in Knowledge of the “Other” Country	Regulatory Institutional Sociocultural
	Mistrust	Institutional
Public Availability of Data	Lack Of Data and Difficulty Accessing Data	Institutional

Philosophical difference across the border refers to the intangible differences between the two countries and their residents that may serve to complicate cross-border relations, understanding, and co-operative action. These include the general values held by agencies, organizations, and citizens as a function of their political, economic, and social cultures. Simply, “just the fact that we are Canadians and they are Americans” created a divide (“Russell”, Canadian public agency employee, interview, February 18, 2008). Philosophical differences

across the border may be considered alongside social and cultural differences - such as divergent educational systems, syntax, and preferences for certain sports - in that these were found to be elements of minor divergence between the two countries.

By contrast, political, regulatory, and institutional differences represented by the 49th parallel were identified as being significant barriers to implementing transboundary EBM. The border, the lack of understanding across it, and the existence of different political systems on either side of it, were cited by approximately 63 per cent of those interviewed (in 19/30 interviews) as the major barriers to transboundary EBM. With respect to the different regulatory and legal regimes on either side of the border, interview respondents cited differences in environmental legislation, agricultural policies, animal health regulations, and the regulations applying to different land tenures as obstacles to harmonizing grasslands conservation and management efforts across the border. For example, one Canadian noted, “in terms of legislation and politics, there’s always going to be that Line there” (“Luke”, Canadian public agency employee interview, February 7, 2008). Interview participants were generally not optimistic for a paradigm shift from traditional NRM to EBM in the transboundary grasslands. One Canadian explained, “we don’t look at this as an ecosystem in terms of any kind of legislation or policy right now, it’s a big stretch for our government sometimes to think that way” (“Lois”, Canadian rancher, interview, June 29, 2007). Specifically, although many of the agencies in question had adopted EBM as their guiding approach, confusion abounded over how to implement EBM. For example:

The Department...puts a high priority on ecosystem management. That's the basis of the Department's management...[When it comes to working with other agencies, we're] confused. I think because there's this ecosystem management philosophy and people were really uncertain as to what it means. Before...you had a single-species approach...I think that was more clear...so we have this idea of what we're supposed to do, but how to actually do it?...I think the decision-making process is difficult because it is so complex trying to figure out. We know we would like to do ecosystem management. What does that mean on the ground? 'Cause you get all these different people and every one would have somewhat different understanding of what it means, or lack of understanding of what it means. So, yeah, that's a difficult thing, and we're trying at this point. And I don't think we've got all that far yet ("Christine", Canadian public agency employee, interview, November 15, 2007).

Several interview respondents also highlighted the range of institutional barriers to transboundary co-operation. These barriers manifested as the reluctance of government agencies to support co-operative, transboundary work. This was emphasized on the American side of the border by "George", a public agency employee who noted that "the transboundary efforts that I've been involved in started before I came to [this agency], [and] have not necessarily [been] encouraged while I've been in [this agency]" (interview, February 5, 2008). It was also observed on the Canadian side of the border, in that "there's no integration, like State or federal agencies with provincial or federal agencies in Canada in terms of trying to co-ordinate [transboundary work]" ("Luke", Canadian public agency employee, interview, February 7, 2008).

However, the tenets of EBM and transboundary environmental co-operation were found to be supported by interpersonal and professional relationships among committed individuals engaged in informal, cross-border networks for grasslands conservation and management, such as the CMLN. For example, both American and Canadian public agency employees noted the

strength of informal, interpersonal relationships among experts affiliated with government agencies as key to supporting transboundary environmental communication and co-operation (“George”, interview, February 5, 2007; “Luke”, interview, February 7, 2008). And, it was suggested that local residents could play an important role in facilitating transboundary EBM, as:

I think [ecosystem thinking is] probably less of a stretch for residents...because residents are so close to the border that we do a lot of business across the border, so we see the...benefits of parallel policies and that sort of thing. And the other thing is a lot of people have relatives on the other side of the border, and so they've either lived on both sides of the border or they understand the politics and social differences on both sides of the border. So, I think that they definitely understand those [ecosystem] concepts probably better than our policy makers (“Lois”, Canadian agricultural producer, interview, June 29, 2007).

In addition, limited financial and human resources in several agencies and organizations in the FRBC area acted to constrain cross-border action, in that:

one of the things that hinders it is none of us has enough time, and if you don't have enough time, you tend to focus on what you have the best chances of affecting. Does the Canadian have the best chance of affecting something in Canada or in the States? Or vice versa? (“Kate”, American ENGO employee, interview, December 11, 2007).

Finally, barriers to accessing data served as an important obstacle to transboundary Canada-US environmental co-operation in the FRBC area. One American ENGO employee noted, “...on the Canadian side, so much information is proprietary, and on the US side, we're not used to having to pay to get data...and I think that's a real problem” (“James”, interview, December 11, 2007).

The drivers of, and barriers to, transboundary co-operation in the FRBC area thus closely corresponded to those presented by Norman and Bakker (2009). Significantly, while

interpersonal relationships and informal networks were found to facilitate transboundary action, the prevailing institutional conditions of mismatched government and governance structures, divergent mandates, the lack of support for inter-jurisdictional co-operation, and limited financial resources and data accessibility were significant obstacles to transboundary environmental communication and co-operation in the FRBC area.

4.6 SHARED LANDSCAPE, DIVERGENT VISIONS: THE CASE OF THE GREATER SAGE-GROUSE

What does it mean to have an ecosystem that is subject to divergent political, regulatory, and management regimes? In the case of the Greater sage-grouse (*Centrocercus urophasianus urophasianus*), a fractured ecosystem translates to incongruent levels of protection. This could prove to have dire consequences.⁶⁴

The Greater sage-grouse's current range of southeastern Alberta, southwestern Saskatchewan and eleven western States⁶⁵ represents an estimated 44 per cent reduction from its historical range (Government of Canada 2010; Stiver *et al.* 2006). Species decline is attributable to the overlap of sage-grouse habitat with oil and gas, mineral, and water resources, and with

⁶⁴ Differential levels of protection afforded to the same species on either side of the Canada-US border is a relatively common occurrence. For example, the Canada-US relationship with respect to Pacific Salmon has been complicated by the fact that certain salmon stocks are listed as endangered under the American Endangered Species Act, whereas Canada has not listed salmon as an endangered species under its Species at Risk Act (CBC 2009). Furthermore, one interview participant noted that the border can artificially create endangered species by placing the natural northern limit – where that species will logically be less abundant – of a species' range in Canada. For example, the Soap Weed and the Prairie Dog were cited as species that are abundant throughout their ranges in the United States, but are classified as endangered in Canada, the northern limits of their ranges ("Nick", Canadian agricultural producer, interview, March 19, 2008).

⁶⁵ The Greater sage-grouse is found in California, Colorado, Idaho, Montana, North Dakota, Nevada, Oregon, South Dakota, Utah, Washington and Wyoming (Stiver *et al.* 2006).

areas of high potential for wind power, agricultural, and residential development; it is also due to climate change, the spread of invasive weeds, prairie fires, and diseases such as the West Nile Virus (Government of Canada, 2010; Doherty *et al.* 2008; Walker *et al.* 2007; Stiver *et al.* 2006; Naugle *et al.* 2004). Only about one per cent of the remaining Greater sage-grouse population is found in Canada, where the species is managed cooperatively by the federal and provincial governments (Stiver *et al.* 2006; Connelly *et al.* 2004). It has been listed as endangered under the Canadian Species at Risk Act since 1998 (Government of Canada 2010; Stiver *et al.* 2006; Connelly *et al.* 2004). Populations residing in Grasslands National Park are also protected under the National Parks Act, and the species is protected at the provincial level under the Saskatchewan and Alberta Wildlife Acts (Government of Canada 2010; Connelly *et al.* 2004).

By contrast, there is no formal protection afforded to the Greater sage-grouse in most of its American range (Stiver *et al.* 2006; Connelly *et al.* 2004). Rather, Greater sage-grouse are managed as native upland game birds subject to annual hunting seasons in ten of the eleven states in which they reside (Connelly *et al.* 2004). The exception is Washington State, where the sage-grouse has been protected under the Endangered Species Act (ESA) in the Columbia Basin since 2001 (Stiver *et al.* 2006; Connelly *et al.* 2004). Despite restrictions put in place due to declining populations, approximately 24,000 birds are harvested per year; and Montana is among the leading states in numbers of birds harvested (Connelly *et al.* 2004).⁶⁶

This is not to say, however, that threats to the Greater sage-grouse have not been recognized in the USA. Eight petitions were filed from May 1999-December 2003 to protect the

⁶⁶ It was noted, however, that hunting is only considered to be an additive mortality factor in regions where habitat is limited or where other factors, such as disease, have already weakened the population (Stiver *et al.* 2006).

Greater sage-grouse under the ESA (Stiver *et al.* 2006). In 2005, the United States Fish and Wildlife Service (USFWS) ruled that no protection was warranted for the Greater sage-grouse beyond the Columbia Basin; but it did encourage “continued and enhanced conservation efforts” throughout the range (Stiver *et al.* 2006: ES-1). The history of American attempts to conserve and manage the Greater sage-grouse is lengthy,⁶⁷ and it recognizes the fact that the species’ mobility necessitates interagency collaboration for its conservation and management. However, new research shows that the Greater sage-grouse migrates more widely across the international border than originally thought, as was revealed by one American public agency employee:

within the last couple of weeks, we’ve found that sage-grouse that had radio collars placed on them [at nesting and breeding areas] in southern Saskatchewan in Grasslands National Park are spending their winters south of Highway 2 in Montana. All of them. So, now I’ve got a Canadian endangered species spending a fair portion of its life in the middle of my planning area. And what are the implications of that? How do I...you know, the different legalities, and...? They’re a hunted species in Montana. Depending upon when they came across the border this fall, we could be hunting a Canadian endangered species, right? That’s a new territory for me to try to figure out the management of that and the implications and international relationships, whether or not...how we’re going to deal with it, I guess, is just a total unknown at this point (“George”, interview, February 5, 2008).

⁶⁷ These efforts began in 1954, when the Western Association of Fish and Wildlife Agencies (WAFWA) formed a technical committee to monitor the number and distribution of Greater and Gunnison sage-grouse (Stiver *et al.* 2006). In the mid-1990s, when the Western States Sage and Columbian Sharp-tailed Grouse Technical Committee reported sustained, region-wide declines, WAFWA introduced a formalized program of inter-state co-operation for the management of sage-grouse and their habitat, and signed the first of several Memoranda of Understanding for sage-grouse conservation (Stiver *et al.* 2006). In 2000, the BLM, USFWS, and the US Forest Service formally joined WAFWA in range-wide conservation efforts (Stiver *et al.* 2006; Connelly *et al.* 2004). WAFWA and the USFWS agreed in 2002 to produce a comprehensive assessment for the Greater sage-grouse and its habitats, including the 2004 assessment (by Connelly *et al.* 2004) and the 2006 conservation strategy (by Stiver *et al.* 2006).

Despite efforts for interagency co-operation and range-wide sage-grouse management in the USA, the fundamental divide between the ‘few protected’ and the ‘hunted majority’ remains across the international border. Moreover, new information indicates that, in the absence of natural features demarcating the border, the Canadian, protected birds regularly migrate into the USA, where they may be hunted. This provides an alarming call to action for harmonizing planning, management, conservation and protection strategies for migratory species and their habitats across the border. It is clear from this case that the ammunition of protection that a species is armed with in one country is negated if not upheld in the jurisdictions to which it migrates (Figure 4.2).

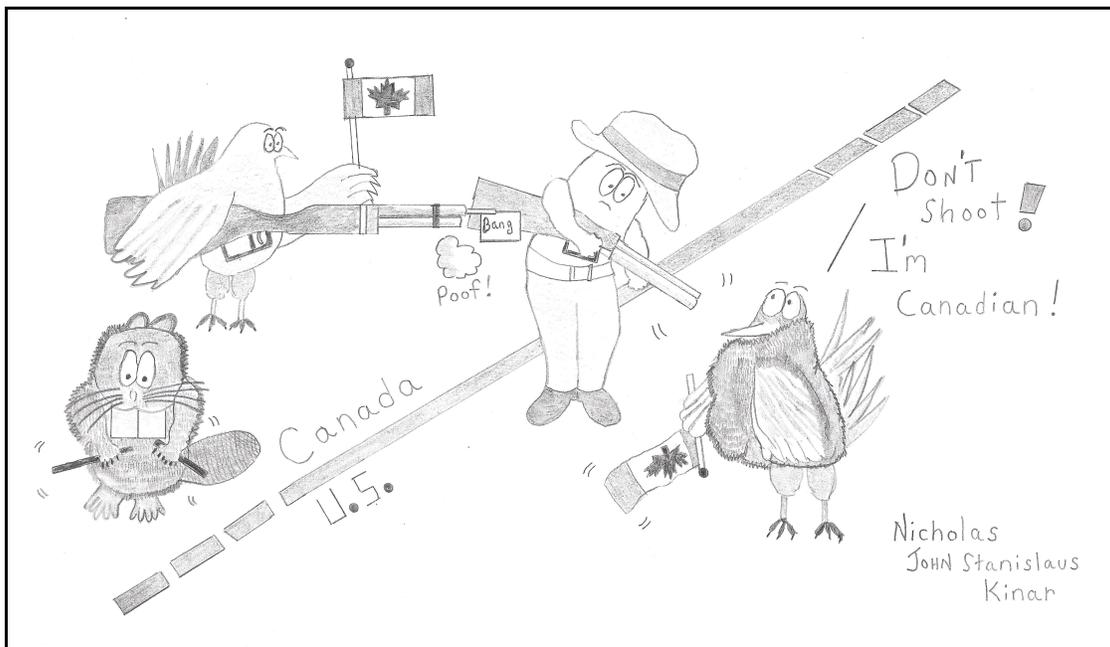


Figure 4.2: Incongruent Protection for the Greater Sage-Grouse Across the Line (by Nicholas J.S. Kinar)

4.7 THE PROSPECTS FOR TRANSBOUNDARY EBM IN THE NORTHERN GREAT PLAINS

Several ENGOs have looked across the Canada-US border to create conservation plans that are based on ecosystem, rather than political, boundaries. This section focuses on four such documents, produced by Nature Conservancy Canada (Riley *et al.* 2007), the NMGTCI (Smith Fargey 2004a), the World Wildlife Fund (Forrest *et al.* 2004), and The Nature Conservancy (TNC 1999).

These documents suggested a positive trend toward envisioning the grasslands environment as a transboundary ecosystem, rather than as discrete ‘Canadian’ and ‘American’ parcels of land (Table 4.3). All of the ecoregional plans examined identified threats to the grasslands environment in the Northern Great Plains consistent with those reported in the literature, and in the interviews cited earlier in this paper. At least two of the plans (Riley *et al.* 2007; TNC 1999) identified the lack of universally-accepted land classification systems for mapping, and the lack of available data, as barriers to setting and meeting biodiversity targets. This is consistent with at least one of the barriers to transboundary co-operation found elsewhere in this paper and by Norman and Bakker (2009).

These documents showed that transboundary planning, particularly as led by ENGOs, is strong. However, with respect to the prospects for implementing EBM across the Saskatchewan-Montana border, it was noted:

I think that as far as we have gone in addressing that is to say we can plan cross-boundary, we can work with our counterparts in the US and start to do grassland planning and common conservation targets that apply to both sides and

Table 4.3: Summary of Selected Ecoregional Planning Efforts

Plan Name, Source and Year	Area of Focus	Plan Actions and Achievements
Ecoregional Planning in the Northern Great Plains Steppe (TNC 1999)	<p>The Northern Great Plains Steppe Ecoregion (the Mixed Grasslands; Northwestern Glaciated Plains; Northern Glaciated Plains; Northwestern Great Plains and the Powder River Basin; Excludes the Cypress Upland (Canada) and the Black Hills (USA))</p> <p>Includes parts of NE, WY, ND, SD, MT (USA); SK and AB (Canada)</p>	<p>-Identified 42 primary species, 18 secondary species, 323 natural communities, and 2 general aquatic communities as conservation targets</p> <p>-Conservation goals met for 88 per cent of animal targets and 41 per cent of plant targets</p> <p>-Ecological complex goals best met in the Northwestern Glaciated Plains (85 percent)</p>
Ocean of Grass: A Conservation Assessment for the Northern Great Plains (Forrest <i>et al.</i> 2004)	<p>The Northern Great Plains Ecoregion</p> <p>Includes parts of NE, WY, ND, SD, MT (USA); SK and AB (Canada)</p>	<p>-Identifies areas for immediate action: To increase conservation lands across the ecoregion; to promote sustainable management; to restore populations of native species and secure their long-term viability; to ensure that regional river flows can support an array of aquatic and riparian species</p>
Shared Prairie-Shared Vision: The Northern Mixed Grass Transboundary Initiative (Smith Fargey 2004a)	<p>24,000 square km area of mixed-grass prairie in the Alberta, Saskatchewan and Montana borderland region.</p> <p>Includes Conservation Site Plans for the FRBC Area, the Alberta Milk River Area, the Sage Creek/Southwest Pasture Complex, the Old Man on His Back Plateau, and the Whitewater Wetlands.</p>	<p>-Developed 5 Conservation Site Plans</p> <p>-Identified data gaps and proposed research and monitoring strategies</p> <p>-Consolidated existing GIS databases to provide transboundary information</p> <p>-Produced a GIS database, a digital atlas, and a poster series</p> <p>-Led to the creation of the CMLN</p>
A Conservation Blueprint for Canada's Prairies and Parklands (Riley <i>et al.</i> 2007)	<p>The Aspen Parkland, Moist Mixed Grassland, Mixed Grassland and Cypress Upland Ecoregions</p> <p>Focus on Canada's 3 prairie provinces</p> <p>Transboundary for: AB/ MT; SK/ ND and MB/ ND</p>	<p>-Analyzed the current protection of target species and ecosystems</p> <p>-Set conservation goals for target species and ecological systems</p> <p>-Identified shortfalls in achieving these conservation goals</p>

also...[we] can move money across borders, which is a big deal. I mean, that's not insignificant, but beyond that, I can't answer that question. It's a big starting place right there ("Peter", Canadian ENGO employee, interview, October 25, 2007).

Therefore, the ability to plan was found to be greater than the ability to act in a transboundary context. One interview participant noted that even in examples of successful transboundary collaboration for conservation, such as the North American Waterfowl Management Plan, the multistakeholder joint ventures designed to implement the Plan at the national and regional levels have been plagued by a lack of transboundary communication and co-ordination ("James", American ENGO employee, interview, December 11, 2007).

Both Americans and Canadians suggested that harmonizing conservation laws, policies and programs across the 49th parallel would be difficult, if not impossible. However, they also postulated that cross-border harmonization could be less important than cross-border transparency and co-ordination:

I think the best way is for the agencies to work together, not necessarily blurred jurisdictions, [to] continue to manage it the way we have as far as the political boundaries, but to work together...with a common goal... I wouldn't advocate for lumping the grasslands together and saying some group is going to have overall say on how we manage all of that. I would continue to work within the political framework that we all operate under, but to...work together more closely as agencies, individuals, NGOs [nongovernmental organizations], all of us to work more closely together across boundaries...to craft a bigger vision and implement it ("Bob", American public agency employee, interview, December 12, 2007).

In terms of doing things on the ground, the political climates are always so different enough (*sic*) that programs you do on one side of the border can't necessarily be done on the other side...the approaches...can't always be

the same. But maybe that's not important as long as we're working to conserve as a whole ("Peter", Canadian ENGO employee, interview, October 25, 2007).

Therefore, while agencies and actors can *plan* across the border, *acting* across the border remains difficult. This section suggests that implementing EBM as harmonization across the international border is not a feasible goal. However, the tenets of EBM may be achieved through cross-border collaboration in setting conservation targets, which may then be achieved by independent national (federal) and subnational (provincial/state) laws, policies and programs.

4.8 CONCLUSIONS

The Northern Great Plains is indeed a 'shared landscape' that spans the international border. Its grasslands are home to common, and frequently migratory, animal species; its human residents share kinship ties and social characteristics across the international border; and equivalent threats to the grasslands environment exist in both Canada and the United States. However, despite its descriptors of 'artificial' and 'arbitrary', the 49th parallel represents an indelible divide between two countries, each with its own political identity; its own system of allocating and managing lands among users and uses; and its own set of regulations, policies and programs for land management and grasslands conservation. The border not only represents a change in political and regulatory systems, but acts as a barrier to the movement of people, products, and ideas in the increasingly securitized border regime of the early twenty-first century. The differential levels of protection afforded to the Greater sage-grouse across the

Canada-US border illustrate a range of implications associated with ecosystem and habitat fragmentation. However, despite a lack of upper-level support for transboundary work, progress in transboundary co-operation has been made by individuals through interpersonal, cross-border relationships and informal professional networks. While progress in transboundary environmental co-operation has been successful in the domains of planning, goal setting and research, actual action in transboundary grasslands conservation and management has been stymied. This paper highlights the need to continue, and to strengthen, attempts to achieve the goals of EBM across political borders in both plans and practice. It suggests that while formal EBM, based on transboundary policy setting and programming might be unattainable, there are still options for co-operation. This paper supports the findings of Pedynowski (2003) and Norman and Bakker (2009) that the understanding of common values and conservation needs across the border, and the fostering of interagency and interpersonal relationships, can support transboundary environmental co-operation. However, this paper also supports their findings of limited institutional resources and support for formal transboundary co-operation. Therefore, this paper confirms that informal networks and relationships among public agencies, ENGOs, and citizens are an important vehicle for transboundary environmental co-operation (e.g. Stefanick 2009; Alper 2004). At the formal level, cross-border collaboration in setting conservation goals that can be achieved by dedicated yet sovereign national and subnational instruments will likely provide the best avenue to achieve the tenets of EBM in jurisdictionally- and institutionally- fragmented environmental management contexts.

4.9 REFERENCES

- Alper, D.K. 2004. Emerging Collaborative Frameworks for Environmental Governance in the Georgia Basin-Puget Sound Ecosystem. *Journal of Borderlands Studies* 19(1): 79-98.
- Barrow, C.J. 1999. *Environmental Management: Principles and Practice*. London: Routledge.
- Brogden, M.J. and J.B. Greenberg. 2003. The Fight for the West: A Political Ecology of Land Use Conflicts in Arizona. *Human Organization* 62(3): 289-298.
- Bruyneel, S. 2009. Thinking Down or Acting Up? Governmental and Grassroots Environmental Thought and Action in the Transboundary Northern Plains. *Environments* 36(3): 55-72.
- Canadian Broadcasting Corporation (CBC). 2009. U.S. to compensate B.C. fishermen under latest pact to protect salmon. *CBC News*, January 6, 2009. Available: <http://www.cbc.ca/canada/british-columbia/story/2009/01/06/bc-us-salmon-treaty.html>. Accessed May 4, 2010.
- Carter, N. 2007. *The Politics of the Environment: Ideas, Activism, Policy*. 2nd ed. New York: Cambridge University Press.
- Castree, N. 2004. Environmental Issues: Signals in the Noise? *Progress in Human Geography* 28(1): 79-90.
- Connelly, J. W., Knick, S.T.; Schroeder, M.A. and S. J. Stiver. 2004. Conservation Assessment of Greater Sage-grouse and Sagebrush Habitats. Western Association of Fish and Wildlife Agencies. Unpublished Report. Cheyenne, Wyoming.
- Cortner, H.J. and M.A. Moote. 1999. *The Politics of Ecosystem Management*. Washington,

D.C. and Covelo, CA: Island Press.

Crossing the Medicine Line Network (CMLN): The Northern Mixed Grass Transboundary Conservation Initiative. No Date. *About Us*. Available: www.crossingthemedicineline.net/about_us.htm. Accessed October 7, 2009.

Doherty, K.E.; Naugle, D.E.; Walker, B.L. and J.M. Graham. 2008. Greater sage-grouse winter habitat selection and energy development. *Journal of Wildlife Management* 72(1): 187-195.

Erickson, P.; Fargey, P.; Forrest, S.; Green, M.; Martin, B.; Michalsky, S.; Nicholson, J. and L. Rodger. 2004. Initiative Overview and Digital Atlas. In Smith Fargey, K. (ed.). *Shared Prairie-Shared Vision: The Northern Mixed Grass Transboundary Conservation Initiative*. Conservation Site Planning Process and Digital Atlas. Regina, SK: Canadian Wildlife Service, Environment Canada. CD-ROM.

Fargey, P. (Principal Investigator). 2005. *Crossing the Medicine Line: The Frenchman River-Bitter Creek Conservation Action Plan*. 2005-06/2007-08. Unpublished Proposal for Parks Canada, 16pp.

Fargey, P.; Tuckwell, J.; Carlson, J.; Bristol, B.; Davis, S.; Scissons, R.; Piwowar, A.; Wiltse, E.; Forrest, S. and K. Murphy. 2004. Frenchman River-Bitter Creek Conservation Site Plan. In Smith Fargey, K. (ed.). *Shared Prairie-Shared Vision: The Northern Mixed Grass Transboundary Initiative*. Conservation Site Planning Workshop Proceedings and Digital Atlas. Regina, SK: Canadian Wildlife Service, Environment Canada. CD-ROM.

- Fitzsimmons, A.K. 1998. Why a Policy of Federal Management of Ecosystems is a Bad Idea. *Landscape and Urban Planning* 40(1-3): 195-202.
- Fitzsimmons, A.K. 1996. Sound Policy or Smoke and Mirrors: Does Ecosystem Management Make Sense? *Water Resources Bulletin* 32(2): 217-227.
- Forrest, S.; Martin, B.; Bruyneel, S.; McAdam, S.; Fargey, P.; Carlson, J. and J. Nicholson. 2010. *Cross-Border Conservation Initiatives*. Crossing the Medicine Line Network. 2pp. (poster).
- Forrest, S.C.; Strand, H.; Haskins, W.H.; Freese, C.; Proctor, J. and E. Dinerstein. 2004. *Ocean of Grass: A Conservation Assessment for the Northern Great Plains*. Northern Plains Conservation Network and Northern Great Plains Ecoregion. Bozeman, MT: WWF-US.
- Government of Canada. 2010. *Species at Risk Public Registry*. *Species Profile: Greater Sage-Grouse urophasianus subspecies*. Available: http://www.sararegistry.gc.ca/species/speciesDetails_e.cfm?sid=305. Accessed: September 1, 2009.
- Grumbine, R.E. 1997. Reflections on "What is Ecosystem Management?" *Conservation Biology* 11(1): 41-47.
- Grumbine, R.E. 1994. What is Ecosystem Management? *Conservation Biology* 8(1): 27-38.
- Hartig, J.H.; Zarull, M.A.; Heidtke, T.M. and H. Shah. 1998. Implementing Ecosystem-Based Management: Lessons from the Great Lakes. *Journal of Environmental Planning and Management* 41(1): 45-75.
- Hildebrand, L.P.; Pebbles, V. and D.A. Fraser. 2002. Cooperative Ecosystem Management

- Across the Canada-US Border: Approaches and Experiences of Transboundary Programs in the Gulf of Maine, Great Lakes, and Georgia Basin/Puget Sound. *Ocean and Coastal Management* 45(6-7): 421-457.
- Hurley, P.T. and P.A. Walker. 2004. Whose vision? Conspiracy theory and land-use planning in Nevada County, California. *Environment and Planning A* 36(9): 1529-1547.
- Jones, M.L. and W.W. Taylor. 1999. Challenges to the implementation of the ecosystem approach in the Great Lakes basin. *Aquatic Ecosystem Health and Management* 2(3):249-254.
- Kanji, M. 1996. North American Environmentalism and Political Integration. *American Review of Canadian Studies* 26(2): 183-204.
- LaDow, B. 2001. *The Medicine Line: Life and Death on a North American Borderland*. New York and London: Routledge.
- Lunstrum, E. 2008. Mozambique, Neoliberal Land Reform, and the Limpopo National Park. *Geographical Review* 98(3): 339-355.
- Malone, C.R. 2000. Ecosystem management policies in state government of the USA. *Landscape and Urban Planning* 48(1-2): 57-64.
- McKinsey, L.S. and V. Konrad. 1989. *Borderlands Reflections: The United States and Canada*. Orono, ME: Borderlands.
- Mitchell, B. 2002. *Resource and Environmental Management*. 2nd ed. Toronto: Pearson Education Limited.
- Moore, A. 2008. Rethinking scale as a geographical category: from analysis to practice.

Progress in Human Geography 32(2):203-225.

Morris, P.S. 1999. Regional Ideas and the Montana-Alberta Borderlands. *The Geographical Review* 89(4): 469-490.

Naugle, D. E.; Aldridge, C.L.; Walker, B.L.; Cornish, T.E.; Moynahan, B.J.; Holloran, M.J;

Brown, K.; Johnson, G.D.; Schmidtman, E.T.; Mayer, R.T.; Kato, C.Y.; Matchett, M.R.;

Christiansen, T.J.; Cook, W.E.; Creekmore, T.; Falise, R.D.; Rinkes, E.T. and M. S.

Boyce. 2004. West Nile virus: Pending crisis for Greater Sage-Grouse. *Ecology Letters* 7: 704-713.

Norman, E.S. and K. Bakker. 2009. Transgressing Scales: Water Governance Across the Canada-US Borderland. *Annals of the Association of American Geographers* 99(1): 99-117.

Pedynowski, D. 2003. Prospects for Ecosystem Management in the Crown of the Continent Ecosystem, Canada-United States: Survey and Recommendations. *Conservation Biology* 17(5): 1261-1269.

Quinn, M.S. and J.C. Theberge. 2004. Ecosystem-Based Management in Canada: Trends From a National Survey and Relevance to Protected Areas”, in Munro, N.W.P.; P. Deardon; T.B. Herman; K. Beazley; and S. Bondrup-Neilson (eds). 2004. *Making Ecosystem-Based Management Work: Connecting Managers and Researchers*. Proceedings of the Fifth International Conference on Science and Management of Protected Areas, 11-16 May 2003, Wolfville, NS, Canada: SAMPAA. Available: www.sampaa.org/pdf/ch8/8.2.pdf. Accessed: 5 January 2010.

- Reed, M.G. and S. Bruyneel. 2010. Rescaling Environmental Governance, Rethinking the State: a Three-Dimensional Review. *Progress in Human Geography*. *Progress in Human Geography Online First*: January 26, 2010, DOI: 10.1177/0309132509354836.
- Riley, J.L.; Green, S.E. and K.E. Brodribb. 2007. *A Conservation Blueprint Canada's Prairies and Parklands*. Toronto: Nature Conservancy of Canada. 226pp. + DVD-ROM.
- Sheridan, T.E. 2007. Embattled Ranchers, Endangered Species, and Urban Sprawl: The Political Ecology of the New American West. *Annual Review of Anthropology* 36 : 121-138.
- Sheridan, T.E. 2001. Cows, Condos, and the Contested Commons: The Political Ecology of Ranching on the Arizona-Sonora Borderlands. *Human Organization* 60(2): 141-152.
- Singleton, S. 2002. Collaborative Environmental Planning in the American West: The Good, the Bad and the Ugly. *Environmental Politics* 11(3): 54-75.
- Slocombe, D.S. 1998a. Lessons from experience with ecosystem-based management. *Landscape and Urban Planning* 40(1-3): 31-39.
- Slocombe, D.S. 1998b. Defining Goals and Criteria for Ecosystem-Based Management. *Environmental Management* 22(4):483-493.
- Slocombe, D.S. 1993. Implementing Ecosystem-Based Management. *Bioscience* 43(9): 612-622.
- Smith Fargey, K. (ed.). 2004a. *Shared Prairie-Shared Vision: The Northern Mixed Grass Transboundary Initiative*. Conservation Site Planning Workshop Proceedings and Digital Atlas. Regina, SK: Canadian Wildlife Service, Environment Canada.

- Smith Fargey, K. 2004b. Introduction. In Smith Fargey, K. (ed.). *Shared Prairie-Shared Vision: The Northern Mixed Grass Transboundary Initiative*. Conservation Site Planning Workshop Proceedings and Digital Atlas. Regina, SK: Canadian Wildlife Service, Environment Canada.
- Stefanick, L. 2009. Transboundary Conservation: Security, Civil Society and Cross-Border Collaboration. *Journal of Borderlands Studies* 24(2): 15-37.
- Stiver, S.J.; Apa, A.D.; Bohne, J.R.; Bunnell, S.D.; Deibert, P.A.; Gardner, S.C.; Hilliard, M.A.; McCarthy, C.W. and M.A. Schroeder. 2006. Greater Sage-grouse Comprehensive Conservation Strategy. Western Association of Fish and Wildlife Agencies. Unpublished Report. Cheyenne, Wyoming.
- Szaro, R.C.; Sexton, W.T. and C.R. Malone. 1998. The emergence of ecosystem management as a tool for meeting people's needs and sustaining ecosystems. *Landscape and Urban Planning* 40(1-3): 1-7.
- The Nature Conservancy (TNC), Northern Great Plains Steppe Ecoregional Planning Team. 1999. *Ecoregional Planning in the Northern Great Plains Steppe*. The Nature Conservancy.
- Thomas, J.W. 1996. Forest Service Perspective on Ecosystem Management. *Ecological Applications* 6(3): 703-705.
- Walker, B.L.; Naugle, D.E. and K.E. Doherty. 2007. Greater sage-grouse population response to energy development and habitat loss. *Journal of Wildlife Management* 71(8): 2644-2654.

- Walker, P.A. and Hurley, P.T. 2004. Collaboration Derailed: The Politics of “Community-Based” Resource Management in Nevada County. *Society and Natural Resources* 17(8): 735-751.
- Walker, P.A. 2003. Reconsidering ‘regional’ political ecologies: toward a political ecology for the rural American West. *Progress in Human Geography* 27(1): 7-24.
- Walker, P.A. and L. Fortmann. 2003. Whose landscape? A political ecology of the ‘exurban’ Sierra. *Cultural Geographies* 10: 469-491.
- Widdis, R.W. 1997. Borderland and Interaction in the International Region of the Great Plains: An Historic-Geographic Perspective. *Great Plains Research* 7(1): 103-137.
- Wilson, R.K. 1999. ‘Placing Nature’: The Politics of Collaboration and Representation in the Struggle for La Sierra in San Luis, Colorado. *Ecumene* 6(1): 1-28.
- 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.

CHAPTER 5

THINKING DOWN OR ACTING UP? GOVERNMENTAL AND GRASSROOTS ENVIRONMENTAL THOUGHT AND ACTION IN THE TRANSBOUNDARY NORTHERN PLAINS⁶⁸

ABSTRACT

It is widely recognized that the 49th parallel is an arbitrary construction. A political ecology of the Frenchman River-Bitter Creek Area, straddling the Saskatchewan-Montana border, shows that despite parallel socioeconomic and ecological conditions and threats on either side of this border, very different political and managerial regimes apply. Differences are especially pronounced with respect to grasslands conservation and management, and how these impact agricultural livelihoods. More troubling is the dearth of knowledge within each country with respect to the management activities undertaken in the other.

This paper supports many of the criticisms of, and concerns with, state-centric environmental management identified by Bryant and Wilson in 1998. This paper confirms ongoing institutional fragmentation of the environment and its management, highlights the aversion of non-state actors to top-down approaches to environmental management, and recognizes the persistent placement of 'expert' above 'local' knowledge. In addition, this paper contends that environmental management remains unable to reconcile environmental exploitation with conservation, and the values of local actors with decisions made externally. However, this research illustrates that some progress has been made since Bryant and Wilson's challenge to rethink environmental management. Specifically, it highlights the success of informal, cooperative relationships as a key motivator of international environmental dialogue and action. It also emphasizes the important stewardship roles of agricultural producers, as much of the remaining grasslands in the Saskatchewan-Montana borderland are privately owned. Together, these respond to Bryant and Wilson's call for a revised conceptualization of environmental management by illustrating that transboundary conservation and management initiatives are led by local and grassroots actors that 'act up' to influence traditionally 'downward thinking' institutions.

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5.1 INTRODUCTION

In 1998, Raymond Bryant and Geoff Wilson challenged geographers to critically evaluate environmental management as both a process and a field of study. In laying down this gauntlet, they drew attention to the limitations of traditional conceptualizations of environmental management as a state-centred, technocentric problem-solving enterprise with limited ability to contribute to research on human-environment interactions and the resolution of global environmental problems. Specifically, they called for interdisciplinary and multistakeholder collaboration to arrive at a more inclusive definition of environmental management that integrates the physical and social sciences as well as state and non-state actors. Ten years later, geographers and other scholars engaged in environmental management continue to grapple with these limitations, and, ultimately, the challenge issued by Bryant and Wilson for its revitalization.

In this paper, I identify and address the key limitations of environmental management presented by Bryant and Wilson in the context of empirical research findings in the transboundary, Saskatchewan-Montana subregion of the Northern Great Plains. The paper is divided into four parts. The first provides contextual information. The second, the most substantive portion of the paper, recalls and responds to the criticisms of environmental management as a process. In this section, Bryant and Wilson's assertions are compared with research findings to identify points of progress – where Bryant and Wilson's calls have been heeded – and stagnation, where the shortcomings and criticisms identified by Bryant and Wilson

remain or have worsened, in the field of applied environmental management. The third revisits their call to rethink environmental management both as a process and as a field of study. This section delineates the current opportunities and obstacles to revising the traditional conceptualization of environmental management, and highlights the potential of the field of political ecology and processes of community-based approaches to environmental management to help in this revision. The final section comments on progress made, and the outstanding challenges to rethinking environmental management. I argue that, in the case of the transboundary Northern Plains, many of Bryant and Wilson's decade-old concerns persist; however, the beginnings of a paradigm shift in the way that environmental management is conceptualized and executed are evident. Specifically, I highlight that the agencies administering state-centric, top-down approaches to environmental management remain largely reluctant with respect to co-operation and change. This is due to several factors. Chiefly, government agencies at the federal and state/provincial levels tend to have narrowly defined mandates that restrict their efforts to specified resources, issues and geographical regions. Also, these agencies have been subject to neoliberal reforms involving fiscal austerity, de- and re-regulation, privatization or the decentralization of power, and the related shift from *government* to *governance* in the domain of environmental management (McCarthy and Prudham 2004; Prudham 2004). It appears from this research that non-state and grassroots actors appears to be gaining influence in decision-making and regional agenda-setting processes in environmental management. However, as environmental governance involves the decentralization of authority, some authors have noted that this shift can increase the number of non-state and local actors

involved in environmental management without actually empowering these actors or reducing the power of the state in practice (Reed and Bruyneel 2010; Norman and Bakker 2009). This paper evaluates the contributions of non-state actors in transboundary grasslands management and conservation efforts to ascertain if environmental management has indeed evolved into a more inclusive process since Bryant and Wilson's original critique. I argue that both state-centric, 'top-down' management and 'bottom-up' management, led by non-state actors, are needed to fully support such an evolution.

5.1.1 Context

This research is set in the grasslands of southwestern Saskatchewan and northern Montana. Specifically, I focus on the Frenchman River-Bitter Creek (FRBC) Conservation Site, one of the six large landscapes in the Northern Great Plains for which a conservation site plan was developed by the Northern Mixed Grass Transboundary Conservation Initiative (NMGTCI) following a series of multijurisdictional planning workshops in 2003-2004 (Smith Fargey 2004b).⁶⁹ The NMGTCI was an international collaborative of over 17 partners from government (federal, state/provincial) and environmental non-governmental organizations (ENGOS) active in Saskatchewan, Alberta, and Montana (Smith Fargey 2004b). These partners signed a co-operatively written Memorandum of Understanding committing them to advancing regional knowledge and understanding and revising the conservation site plans accordingly (Smith Fargey 2004b). The NMGTCI's successor, the Crossing the Medicine Line Network (CMLN), has

⁶⁹ Conservation Site Plans were also developed for the Alberta Milk Creek, Sage Creek/Southwest Pasture Complex, Old Man on His Back Plateau, Climax Region, and Whitewater Wetlands Areas (Smith Fargey, 2004b).

carried its objectives of fostering transboundary communication and co-operation for grasslands conservation and management since 2006 (CMLN No Date).

The FRBC Conservation Site straddles the 49th parallel between Saskatchewan and Montana, and includes the Bitter Creek-Frenchman portion of Montana's Northwestern Glaciated Plains, the Canada-US Frenchman River Valley, and the East and West Blocks of Grasslands National Park in Saskatchewan, Canada (Fargey *et al.* 2004). It encompasses all or part of eleven Rural Municipalities in southwestern Saskatchewan⁷⁰ and northern Phillips and Valley Counties in Montana (Figure 5.1).

Testing Bryant and Wilson's claims about the weaknesses of, and opportunities for, environmental management in the setting of the transboundary Northern Great Plains is both logical and timely. The North American Great Plains have been subject to five hundred years of European occupation, including intensive agricultural and settlement campaigns sponsored by the federal governments of both Canada and the United States in the nineteenth and twentieth centuries (Dolan 1999; Morris 1999). Given its long history of human influence, and the ongoing importance of regional agricultural livelihoods, "the Great Plains is the ideal setting in

⁷⁰ The eleven Rural Municipalities included in the FRBC Conservation Site are Val Marie No. 17, Lone Tree No. 18, Old Post No. 43, Waverley No. 44, Mankota No. 45, Glen McPherson No. 46, White Valley No. 49, Auvergne No. 76, Wise Creek No. 77, Grassy Creek No. 78, and Arlington No. 79.

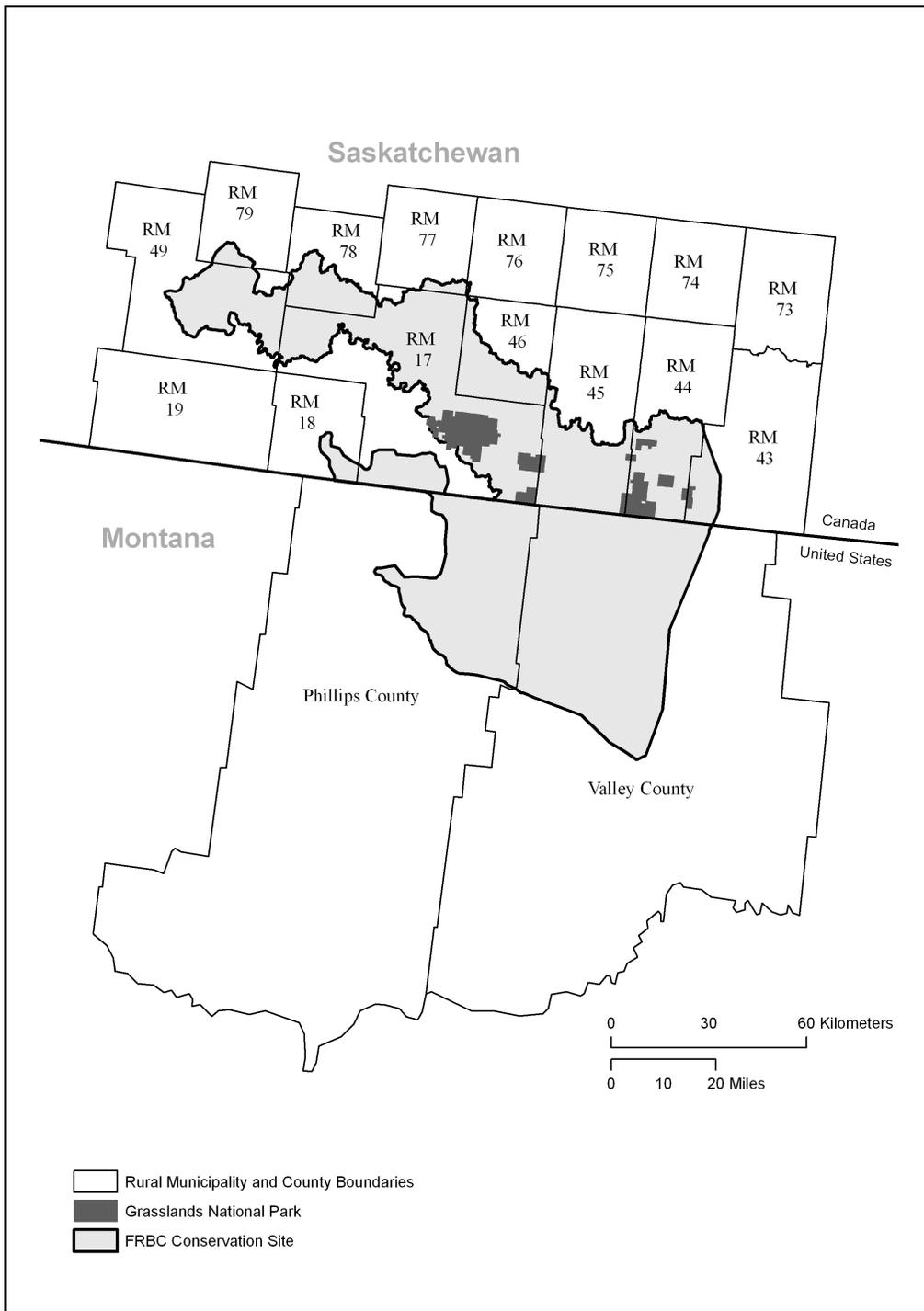


Figure 5.1: The FRBC Conservation Site

which to study human-environment interactions” (Cunfer 2005:8). The Plains-Prairies region is currently a locus of activity on multiple fronts, including the local implications of changes in border security policies since September 11, 2001; recent increased interest on the part of ENGOs in the region; and the need to reconcile conservation needs with issues of rural depopulation and to balance traditional livelihoods with escalating energy resource development in the region, including oil and gas and wind power developments, and land conversion to crops for biofuel production.

This research is the product of multiple qualitative methods used by the author. These include 30 in-depth, semi-structured interviews with key informants living and/or working in the FRBC in both Canada (19) and the United States (11). Interviews were conducted from June 2007-May 2008. I began by interviewing selected NMGTCI participants from public agencies (federal and state/provincial) and ENGOs, and identified subsequent participants (from federal, state/provincial and municipal public agencies and ENGOs; and local farmers and ranchers and experts in energy development) through snowball sampling. The interview process continued until at least one representative from each major stakeholder group⁷¹ was interviewed in each country, and until data saturation occurred.⁷² To ensure data quality and rigour, each participant was given the opportunity to review and revise the transcript of his/her interview. Interview data has been supplemented by field notes from multiple site visits to the region from 2005-2009, attendance at meetings of local conservation groups, analysis of historical and contemporary

⁷¹ Federal public agency, State/Provincial public agency, ENGO, and farmer/rancher.

⁷² Data saturation is here defined as the point at which no new information was being gained from new interviews (the repetition of facts and anecdotes).

regional maps, and a comprehensive review of academic literature and conservation planning documents.

5.2 ENVIRONMENTAL MANAGEMENT AS A PROCESS

5.2.1 Implications of State-Centric Environmental Management

Bryant and Wilson (1998) cited four key implications of the traditional association of environmental management with the state and its environmental practices. First was the institutional fragmentation of the ‘environment’ to facilitate its management. The second was the practice of developing large bureaucracies to administer top-down management and regulation of the environment. Third was the valuation of state-affiliated, positivist, ‘expert’ knowledge above all other forms of environmental knowledge and understanding. The fourth was the assumption that technological fixes may be applied to resolve specific environmental problems without modifications to the political, economic, or social status quo. Each of these will be addressed in the context of grasslands conservation and management in the Saskatchewan-Montana borderland.

Institutional fragmentation of the grasslands environment was evident in the fact that ten different government agencies or departments (at the federal, state/provincial and local levels) were represented in the interviews conducted. Environmental management therefore falls to myriad state agencies and departments, each solely responsible for ‘environment’, ‘agriculture’, ‘industry and resources’, or ‘natural resources’. Furthermore, these entities have jurisdictionally or geographically limited mandates, as each exclusively oversees one type of land or resource

tenure (federal, state/provincial, tribal/trust/allotted, or private/deeded). There were also divisions within government agencies and departments, as well as within ENGOs, as, internally, there were specialized branches or individuals that dealt with specific domains or issues. Often, there was little or no communication among these divisions. This fragmentation of environmental management responsibilities was troubling for several reasons. First, the activities and knowledge of departments and individuals were constrained by their specific mandates and job descriptions, leading to myopic management of the environment and its problems. For example, narrow, issue-based mandates created the situation in which one agency was responsible for wildlife and another was responsible for wildlife habitat (“Bob”, American public agency employee, interview, December 12, 2007;⁷³ “George”, American public agency employee, interview, February 5, 2008). This concern was highlighted by one Canadian public agency employee’s attempt to define ‘conservation’:

ours [definition of ‘conservation’] would be that narrow as far as range health and range condition and...there’s a whole other agency that...would worry more, from a conservation point of view, they would worry more about the rare and endangered plants and rare and endangered species (“Rick”, Canadian public agency employee, interview, February 4, 2008).

Second, spatial limitations occurred where actions were constrained by a geographical condition on one’s mandate or job description. It was often the case that respondents’ work activities, and thus their knowledge, were defined by predetermined geographic boundaries:

⁷³ Statements attributed to interview participants are taken from the set of semi-structured key informant interviews conducted from June 2007-May 2008. To protect confidentiality, each interview participant was assigned a pseudonym consistent with his/her gender identity. In the case of interviews with multiple participants, the pseudonym corresponds to the gender of the dominant participant. To further protect confidentiality, interview participants are identified by stakeholder group, but their specific affiliation and the exact location of the interview are not disclosed.

everybody sort of wants a border to say...“here’s what I’m responsible for”...everybody wants to say, “Okay. This is the little chunk of the province that I’m responsible for”...these are the resources that I need to take care of that. And then... when it goes beyond the border, well, that’s no longer my problem (“Lisa”, Canadian public agency employee, interview, December 5, 2007).

Third, individual jurisdictions, such as small municipal governments, were found to operate independently and without communication with other levels of government (“Paul”, Canadian public agency employee, interview, February 11, 2008). Different jurisdictional responsibilities for resources also contributed to environmental fragmentation, such as the case in which the provincial and local authorities tasked with watershed and invasive weed management had no influence over federally-controlled water bodies that crossed borders (“Alexander”, Canadian public agency employee, interview, November 27, 2007; “Lisa”, Canadian public agency employee, interview, December 5, 2007). These divisions were exacerbated by the international border, as one government or public agency operated according to its own mandate, which was often different than the mandate of the government or parallel agency across the border (“Mark”, American ENGO employee, interview, May 8, 2008). It was perplexing to observe that there was often no knowledge among public agency personnel of what was being done on the other side of the border.⁷⁴ For example, one American federal public agency employee stated, “I don’t think that the United States knows what Canada’s doing, and I’m sure Canada doesn’t know what the United States is doing” (“Sandi”, American public agency employee, interview, May, 9, 2008).

⁷⁴ In fact, there was often little or incomplete knowledge among public agency personnel of what was being done within other agencies in the same jurisdiction.

With respect to the second implication cited by Bryant and Wilson (1998), resistance to top-down, regulatory bureaucracies administering environmental management was evident among non-state actors. It was striking to note that interview participants were not universally against state regulation and control of the environment and natural resources, as both state-affiliated and non-state actors recognized the value of some measure of government regulation of the environment for the benefit of society as a whole. However, both groups expressed doubt that increased regulation would increase conservation behaviours among land owners. Rather, respondents – including representatives from public agencies and ENGOs, and individual agricultural producers – overwhelmingly favoured incentives to encourage voluntary action over regulation of conservation, as “we’re trying to provide a carrot to bring people in to try and address issues rather than pass laws that make them do things” (“Sandi”, American public agency employee, interview, May, 9, 2008; see also Vaisey and Strankman 1999). Among non-state actors, farmers and ranchers expressed incendiary views of mandated conservation practices, clearly preferring tools such as economic incentives to encourage and reward conservation practices on private land. For example:

once you start telling people “You have to do this”...“You have to do this to get rid of a certain weed” or “You have to do this to get this certain animal because it’s bothering the guy down the lake” I think you’re getting into trouble...you just... try to create an environment that people will want to do it on their own. I think once you’re heavy-handed... heavy-handed methods don’t work...people just get mad. And I think that’s why...where government has to be careful also once they start dictating what you have to do (“Tim”, Canadian rancher, interview, November 28, 2007)

The traditional conceptualization of environmental management placed positivistic ‘science’ above other kinds of knowledge, namely local ecological knowledge (LEK), which is region- or site-specific understanding of the environment and its processes developed by local actors over time (Berkes 2007; Berkes 2004; Olsson *et al.* 2004). There was evidence that ‘scientific’ knowledge had, in recent years, been informed by LEK and input from local agricultural producers. This emerged in the case of land allocated to protected areas; specifically, the former ranchland acquired in the creation of Grasslands National Park in the Saskatchewan portion of the FRBC area:

Well, years back I wasn’t very enthused about it [the Park], the way it came in, and the idea that they [Parks Canada] were going to protect it, when...despite government policy to break a lot of this land up, there still was land that was in grass thanks to the ranchers, and the ranchers didn’t seem to get the recognition that was...Now as I understand, they started to see the light that some of the ranchland around it was managed better and was having the wildlife in healthier biodiversity and so they started to create some grazing projects...I think they are starting to come around, and I think just their original...in ranch country hard feelings take a long time to die, and I think there was some hard feelings the way it was started... (“Nick”, Canadian rancher, interview, March 19, 2008)

Finally, environmental management was traditionally viewed as a problem-solving enterprise, in which technological fixes were applied to specific environmental problems “without upsetting prevailing political or economic interests” (Bryant and Wilson 1998: 323). In the transboundary Northern Plains, this was evident in the many state-sponsored agricultural and conservation programs implemented without full consideration of their potential externalities. This will be discussed in the next section.

5.2.2 Criticisms of the State-Centric Approach to Environmental Management

Following from these implications, Bryant and Wilson (1998) identified three criticisms of the traditional view of environmental management. In the first, they questioned the state's capacity to reconcile conservation and environmental exploitation. In the Saskatchewan-Montana grasslands, I found an escalating contest between agricultural livelihoods and energy development. One Canadian public agency employee noted that, in southwestern Saskatchewan, annual oil and gas revenues were twice as high as the grazing levies collected from the land in the past year ("Rick", Canadian public agency employee, interview, February 4, 2008). Therefore, the dedication of government policies and programs to traditional livelihoods over more economically profitable land uses must be called into question. In addition, there was increasing competition between the conservation of native grasslands and the pressure – or temptation – to convert land to crops for biofuel production, spurred by rising grain prices and the perceived profitability of cultivation. One American ENGO employee explained:

A lot of [the grassland that is] left is totally unprotected and so as the push for biofuels and subsidies for growing grains and whatnot continues to exert itself, there's going to be pressure to plow up more ("Mark", American ENGO employee, interview, May 8, 2008).

Bryant and Wilson (1998) argued that these kinds of land use contests are exacerbated by the fact that decisions were frequently made by physically distant actors with little firsthand knowledge of the environments in question. This criticism thrived in the Saskatchewan-Montana grasslands, particularly among ranchers on both sides of the border:

I guess the biggest threat I think is the...a disconnect of the land from the people. When you have non-resident people managing the land, so they're managing it with their mind from somewhere else and not...they don't have their heart in it, put it that way. They don't get their hands dirty ("Neil", Canadian rancher, interview, March 18, 2008).

Most of them [ENGOs] are pretty good. The ones that are around here. If you get one of them that lives here, they understand how it works. But it's hard to sit in San Francisco and New York City and draw up a plan that works for the country where they do it...if they cared as much about the environment as they say they do, they'd take into account the people that live there ("William", American rancher, interview, May 6, 2008).

There was consensus among those interviewed that the chasm between 'managers' and the 'managed' was problematic. Within public agencies, some were worried that the distance between decision makers and the environments they were managing would continue to grow.

One American federal public agency employee stated:

...we have an older workforce. So there's probably half of us are going to be retiring in the next five or ten...five or seven years, probably, and so the ones coming up don't have...they weren't raised on a farm. They don't know what it's like on a farm or a ranch and so we don't know what that's going to do to the community...("Sandi", American public agency employee, interview, May, 9, 2008).

Others within US public agencies recognized the need to consider local values in their policies and programs more explicitly:

we need to make our programs fit into what the culture is up here...and make sure that they dovetail with... things that are going on. Not to come in and change the culture of this area to our programs in any way...one could say that about the Endangered Species Act ("Bob", American public agency employee, interview, December 12, 2007).

In this vein, agricultural producers spoke freely of their objections to endangered species legislation.⁷⁵ A Canadian rancher explained:

and don't get extreme with some of the conservation policies. Make sure that it's something workable in the area, something that makes sense...some of the endangered species, if they were to be found on some of my land, so then you get the flip-side of somebody saying "Use the three S's: shoot, shovel and shut-up"...and that's a terrible approach. But if they're going to threaten my existence here because...if they find an endangered species on my land, for example, and it's going to get so extreme to look after it that I can't run my cows or farm my land, I'm not going to tell you about it ("Jerry", Canadian rancher, interview, December 13, 2007).

The second criticism highlighted the potential discrepancies between state-affiliated, scientific knowledge and 'nonscientific' environmental knowledge and understanding held by non-state actors. Here, ranchers' frustrations resulted from not being listened to in decision-making processes:

Sometimes you get outsiders coming in and...they rub you the wrong way because they're going to come in and conserve something you've conserved all your life. And they're going to tell you, "no, you've done it wrong". That's hard for people to accept...And sometimes I think that, as ranchers, we feel threatened because...we know what can work, but someone may come in and say, "no, that don't work. We know that don't work because my book says it doesn't work". Well, we know what does work. So work with us...don't try to work against us ("Jerry", Canadian rancher, interview, December 13, 2007).

This research suggested that the gulf between state-affiliated, 'scientific' knowledge and non-state LEK may be overstated. Often, government agencies and grassroots actors were striving for the same outcomes, but their messages were lost in translation, as different

⁷⁵ The Canadian Species at Risk Act and/or the United States Endangered Species Act

stakeholder groups rarely communicated using the same vernacular. One Canadian rancher noted this phenomenon during the development of a multistakeholder conservation network, the Saskatchewan Prairie Conservation Action Plan:

everybody was pretty much saying the same thing, but in a different way, and people were taking offence to the way each other was saying it. When actually...if you had some way of taking cowboy language and putting it into what they were saying, and what they were saying into cowboy language, well, they were saying the same thing (“Neil”, Canadian rancher, interview, March 18, 2008).

This point was reinforced when discussing the application of ecosystem management in the Saskatchewan-Montana grasslands region. While several state-affiliated actors admitted struggles within their agency to define and implement ecosystem management, ranchers generally demonstrated a much clearer vision of the concept and adherence to its tenets in their practices. For example, one Canadian rancher said of ecosystem management:

That’s what my work is. That’s the complete definition of my work. That’s it. Right there...See the thing is that that’s the fallacy. That’s the way it’s been, all the time. And now the guys are finally...got a term for it, of what we do. You see? And this is...that was...the rub. Because, I mean, here they’re talking about this stuff, well, Jesus guys! That’s what...we’ve been doing this for eons! (“Neil”, Canadian rancher, interview, March 18, 2008).

However, despite the fact that many of the ranchers interviewed discussed implementing agricultural practices consistent with the tenets of ecosystem management, such as being cognizant of the linkages among ecosystem components when using chemicals or scarce water resources, some were unfamiliar with the term ‘ecosystem management’.

Finally, the problem-solving nature of environmental management was criticized for failing to place environmental problems in the broader political, social, and economic contexts in which they occurred. As previously noted, this criticism was illustrated in the state's implementation of agricultural and conservation programs, often without consideration of their potential externalities. The result has been that programs designed to ameliorate one specific issue or problem have had unintended consequences for other domains, often leading to a general distrust of state intervention among non-state actors. Historically, both the Canadian and American governments implemented enthusiastic Western settlement and agricultural campaigns, which were ultimately unsuccessful:

This place has been depopulating since the late 1920s, and people were encouraged to settle here. Probably wasn't the best policy in the world, at least not...it's a tough place to make a living. And they were encouraged through the Homestead Act. Some were trying to make a living on farm land that's just not having it ("Joe", Canadian public agency employee, interview, December 10, 2007).

Equally unsuccessful agricultural policies and programs were implemented well into the 1970s. These were regarded as being the cause of many of the issues and problems facing the region today. For example:

All of the stuff that would've been plowed up, or...could've been plowed up is already plowed up because of what happened in the '70s, when they're paying you to do it. The government actually paid people to plow up their prairie, and then paid them to plant back grass again...and if the government would've stayed the hell out of it, there'd be a lot more of it left. Put it that way. They were the cause of, I'd say, 50 percent of the prairies that got plowed up wouldn't be plowed up if it wasn't for the government ("Neil", Canadian rancher, interview, March 18, 2008).

More recently, the state has been criticized for the externalities of programs designed to conserve grasslands by returning agricultural lands to grass, such as the Conservation Reserve Program (CRP) in the United States. The CRP is voluntary program initiated in 1985 and administered by the United States Department of Agriculture-Farm Service Agency (Sullivan *et al.* 2004; USDA-FSA No Date). Under the CRP, farmers are paid to take land out of agricultural production by seeding it back to grass for the duration of their 10-15 year contract (Cunfer 2005; USDA-FSA No Date). As a conservation initiative, the Reserve Program has indeed been successful, resulting in a measurable increase in the amount of grasslands in American Plains (Cunfer 2005). However, concerns about the Program's consequences for local communities have been well documented (Sullivan *et al.* 2004). Although there is a lack of statistical evidence to support claims that the CRP has directly contributed to rural depopulation (Sullivan *et al.* 2004), it has widely been labeled as "a tremendous loss for the [local] economy as a whole", despite being "a tremendous boon for each little rancher...or farmer that had...something they could put in [the] CRP" ("Kate", American ENGO employee, interview, December 11, 2007). For example:

That reserve program they've [the USA] got for the land, that shrunk their communities big time. 'Cause families seed the grass, moved to town. They had no reason to stay on their farms...and now if you drive, you don't see it as much going to Malta [Montana], but if you go to Havre [Montana], on that Highway you see miles and miles of this seeded grass where the fences have tumbled down and whatnot and the farmyards are empty, 'cause it's the reserve program land ("Jerry", Canadian rancher, interview, December 13, 2007).

The conservation successes of the CRP, weighed against its observed harms to local communities, have shown that "...thinking about second and third order consequences is important, and not usually done" ("Kate", American ENGO employee, interview, December 11, 2007). Therefore, certain government policies and state-led approaches to environmental management have been executed in the region without full consideration of local realities, without the inclusion of local knowledge, and without sufficient consideration of their potential consequences. As such, many of these policies and programs, and the legal instruments created under their auspices, have failed.

5.3 RETHINKING ENVIRONMENTAL MANAGEMENT

5.3.1 The Case for Rethinking Environmental Management as a Process

This paper has presented a compelling case for rethinking environmental management as a process. First, there was a demonstrated inability to reconcile agricultural livelihoods and grasslands conservation with competing land uses, namely energy development, in socially, culturally, and economically equitable ways. Second, there was consensus among state-affiliated and non-state actors that decision-making by those spatially and psychologically distant from the realities of rural, agricultural livelihoods was detrimental to the needs and morale of the region. This research showed that the crux of ranchers' frustrations with state-centric environmental management lay in their marginalization in these processes, as their local knowledge has traditionally been supplanted by the 'science' of state-affiliated 'experts'. However, many of the ranchers interviewed often exhibited greater understanding of local environmental conditions

and processes than did ‘expert’, external managers. Specifically, ranchers’ knowledge of regional and local history, and cultural and social conditions, rooted in their longstanding and often multigenerational ties to the environment and its human communities, allowed them to understand externally-derived and implemented environmental management tools in the local context. For example, the initial failures of both the Canadian Species at Risk and the American Endangered Species Acts to gain the acceptance of agricultural producers illustrated that local receptivity to regulation may be enhanced if such instruments were developed in concert with local cultures and economies. The combination of local agricultural knowledge, including the consideration of producers’ practical needs, as well as conservation science could perhaps have derived a more appropriate and enforceable legal instrument to protect Species at Risk while avoiding the local ‘shoot, shovel, and shut up’ response. These findings stressed the potential role for non-state and grassroots actors in informing decision-, law-, and policy-making processes through collaborative partnerships with state-affiliated actors. This paper suggested that incorporating the input of local actors in environmental management might result in environmental policies and regulations that make sense to local people and are enforceable. In addition, integrating ranchers’ LEK might help to mitigate the negative externalities of well-intentioned policies, laws, and programs that are ill-suited to local realities. It is in this placement of environmental management into the local context that Bryant and Wilson’s (1998) calls to understand the history of human-environment relations and to incorporate the insights of a range of actors are brought into focus.

5.3.2 Obstacles to Rethinking Environmental Management as Process

The revitalization of environmental management to a more inclusive process that draws expertise from a range of disciplines and both state-affiliated and non-state actors would require a change in institutional structure and operation. If this was to occur, it would most likely do so through a series of incremental changes rather than as a sudden paradigm shift in environmental management toward inclusivity and civic involvement (e.g. Mitchell 2002; Cortner and Moote 1999). The general reluctance of state agencies to engage in co-operative interagency or transboundary environmental management, due to their narrow mandates and the effects of neoliberal policy, was found to be a key obstacle to the incorporation of non-state actors into traditional, state-centric approaches. Furthermore, the lack of upper-level support within state agencies for such co-operation leaves Bryant and Wilson's (1998) vision of a 'more inclusive environmental management' to the domain of informal, *ad hoc* networks and personal relationships that transcend agency and national boundaries. For example:

And right now, most of it [transboundary grasslands conservation] is addressed through interpersonal relationships between biologists in Canada and the US ...there hasn't been a lot of organizational interest or support...which leaves it to just an interpersonal relationship with biologists, and trying to do what we can, at that level...it's more local, and...the best we can do...without a lot of institutional support, I think probably on both sides of the border...even as you move farther up in that government hierarchy, that border becomes more real...I think we do really well at the local level... ("George", American public agency employee, interview, February 5, 2008).

The successes of non-state and grassroots actors in regional environmental management were noted by several respondents. First, several interview participants reported increased

interest in the grasslands environment in recent years on the part of ENGOs, such as The Nature Conservancy (TNC 1999) and the World Wildlife Fund (Forrest *et al.* 2004). ENGOs were identified by many interview respondents as the main vehicles for transboundary co-operation in grassland conservation and management endeavors. This included ENGO involvement in binational (Canada-US) ecosystem-based conservation and management initiatives, such as the NMGTCI (Smith Fargey 2004a) and its successor, the CLMN (CMLN No Date), and projects such as the World Wildlife Fund's Transboundary Prairie Conservation Project (WWF 2010). It also includes ENGO involvement in trinational (Canada-US-Mexico) efforts for range, habitat, and species conservation, such as The Nature Conservancy's work with the Commission for Environmental Co-operation of North America (Karl and Hoth 2005). This research uncovered that many local agricultural producers favoured the involvement of locally-based ENGOs, and expressed concern over the involvement of 'global' ENGOs operating without local knowledge. Grassroots actors, including local agricultural producers, were also identified as being active in environmental management across jurisdictions, particularly in the context of the identification and control of exotic invasive weeds along the 49th parallel. The reluctance of state agencies to engage in co-operative interagency or transboundary environmental management was troubling. While the success of grassroots, co-operative efforts for grasslands conservation and management was promising, neither bottom-up nor top-down approaches to resource and environmental management can be successful in isolation – a combination of the two is needed, in which agencies and organizations interact among and across jurisdictional levels and with civil society (Berkes 2007; Berkes 2002; Young 2002; Gunningham *et al.* 1998). While most

interview participants emphasized the importance of the state's role as a regulator of natural resources, they also identified agricultural producers as stewards of the land. That is, agricultural producers were considered to be responsible for employing sustainable practices to safeguard their own livelihoods, and to conserve their lands for the collective benefit of greater society. As such, the state's responsibility to provide support for these land stewards, through technical, educational, and financial assistance and incentives, was also highlighted. Thus, the role of the state in environmental management should be expanded to be that of a partner, facilitator, and educator, as well as an administrator or regulator (see Gunningham *et al.* 1998).

5.3.3 The Case for Rethinking Environmental Management as a Field of Study

Bryant and Wilson (1998) recommended that environmental management more readily embrace the social sciences, first to better grasp the 'human' element of human-environment interactions, and second to ground environmental problems in the broader political, economic and social contexts that create and condition them. This paper reinforced this call, and particularly Bryant and Wilson's (1998) suggestion that incorporating the field of political ecology into environmental management would be one way to more explicitly engage the social sciences. This would require striking a balance between political ecology as a critique (that is strong in the academic world) and political ecology as a tool to inform policy (that is often challenged in its ability to contribute to problem solving in the real world) (Walker 2006; Robbins 2004). In addition, I argue that adopting community-based approaches could strengthen and enhance environmental management in the transboundary grasslands.

Concurring with the claim that environmental management must "...integrate discrete problems into the wider political, economic and social context" (Bryant and Wilson 1998: 324), the field of political ecology unites the concerns of ecology and political economy to explore human-environment interactions and examine environmental problems (Blaikie and Brookfield 1987). More specifically, political ecology "points us toward understanding how local patterns of land use are related to broader social, political and economic conditions, and how the environment serves as a locus for the enactment and perpetuation of patterns of inequality" (Brosius and Russell 2003: 47). It "centers on the relative power of various social actors (stakeholders) involving access to, and management of, natural resources" (Stonich 1998: 29). Applied to the case of grasslands management and conservation in the FRBC area, a political ecology approach could provide a vehicle for local agricultural producers to reclaim some control of resources or landscapes annexed by other uses or users, such as energy development interests and conservationists championing protection and non-use in place of sustainable working landscapes (Robbins 2004). A political ecology approach could do this by requiring attention to the ways in which environmental and natural resources are appropriated and used by different stakeholders; by highlighting how power relations among these actors are reflected in resource contests; and by examining how regional and local environmental issues and problems might have differential effects on these groups (Bryant and Wilson 1998). Concomitantly, adopting community-based approaches to environmental management could further serve to incorporate the voices of local agricultural producers in decision-making processes. Community-based approaches evolved as a response to the limitations of centralized, top-down

approaches led by the state (Berkes 2007; Armitage 2005; Berkes 2004). Such approaches have been criticized for placing ‘communities’, participation, and development issues above conservation, and for failing to question how the communities under study are constructed and empowered to conserve (Berkes 2004; Brosius and Russell 2003). Just as neither science nor local knowledge should be privileged over the other, but rather the two should be used together, both top-down and bottom-up management approaches should also be combined in environmental management. Berkes (2004: 625) noted, “the best management designs are those which distribute authority across multiple institutions.” This suggests that the inclusion of communities and local actors is necessary for environmental management to continue its evolution from a top-down exercise to an inclusive process; however, the state should retain its role as a regulator of environmental and natural resources (see Gunningham *et al.* 1998).

It is strongly suggested in this paper that incorporating local values and knowledge – premised on the definition of “conservation as prudent use, because livelihoods depend on the long-term sustainability of local resources” (Berkes 2007: 15189) – could provide region- and site-specific insights to increase the local relevance of, and receptivity to, environmental management instruments previously perceived by producers as top-down and externally imposed. This paper also demonstrated the successes of non-state and grassroots efforts in environmental management, through the strength of informal networks in promoting transboundary communication and co-operation for grasslands management and conservation. It follows that a commitment to partnerships between state actors and non-state actors in environmental management could lead to increased efficacy of environmental regulations and

programs. However, the concern remains that as new actors are incorporated into traditional, top-down decision-making and management processes, this emerging environmental governance regime will act to devolve power to non-state and local actors without actually empowering them or reducing the power of the state (Reed and Bruyneel 2010; Norman and Bakker 2009). It seems that to negotiate the ongoing conundrum of ‘whose knowledge is best’, a combination of both top-down (state-led) and bottom-up (led by non-state and local actors and community-based approaches) environmental management will indeed be required.

5.4 CONCLUSIONS

More than a decade after its writing, Bryant and Wilson’s (1998) critique of the process and field of environmental management remains salient. Empirical research findings illustrated that environmental management processes continue to fragment the environment into discrete units to facilitate regulation and management. However, this paper inspired hope that environmental management, both as a process and a field of study, will continue along its demonstrated path to the inclusion of multiple disciplines and actors. Both state-affiliated and non-state actors recognized the problematic nature of distant decision makers and top-down bureaucracies imposing regulations on local people. There appeared to be a shift toward increased historical, cultural, and social understanding of local contexts. The increasing adoption of ranchers’ LEK into decision-making processes, and enhanced collaboration among stakeholder groups through the emergence of state actor – non-state actor partnerships, such as the NMGTCI, the CMLN, and the Saskatchewan Prairie Conservation Action Plan, and the

incorporation of local input on grassland disturbance regimes in the adoption of grazing projects in Grasslands National Park, is encouraging. I argue that such successes observed in the cooperative environmental management efforts led by non-state and grassroots actors may be encouraging state agencies and actors to reconsider their definition of who is an 'expert'. In this vein, the field of political ecology and the adoption of community-based approaches hold great promise for broadening the definition of 'knowledge' adopted in environmental management to arrive at a more interdisciplinary, integrative way to approach and mitigate environmental problems.

5.5 REFERENCES

- Armitage, D. 2005. Adaptive Capacity and Community-Based Natural Resource Management. *Environmental Management* 35(6): 703-715.
- Berkes, F. 2007. Community-based conservation in a globalized world. *Proceedings of the National Academy of Sciences* 104(39): 15188-15193.
- Berkes, F. 2004. Rethinking Community-Based Conservation. *Conservation Biology* 18(3): 621-630.
- Berkes, F. 2002. Cross-Scale Institutional Linkages: Perspectives from the Bottom Up. In *The Drama of the Commons*, E. Ostrom, T. Dietz, N. Dolšak, P.C. Stern, S. Stonich and E.U. Weber, eds. Washington, DC: National Academy Press. pp.293-321.
- Blaikie, P.M. and H. Brookfield. 1987. *Land Degradation and Society*. London and New York: Methuen.

- Brosius, J.P. and D. Russell. 2003. Conservation from Above: An Anthropological Perspective on Transboundary Protected Areas and Ecoregional Planning. *Journal of Sustainable Forestry* 17(1-2): 39-65.
- Bryant, R. L. and G. A. Wilson. 1998. Rethinking Environmental Management. *Progress in Human Geography* 22(3): 321-343.
- Cortner, H.J. and M.A. Moote. 1999. *The Politics of Ecosystem Management*. Washington, D.C.: Island Press.
- Crossing the Medicine Line Network (CMLN): The Northern Mixed Grass Transboundary Conservation Initiative. No Date. *About Us*. Available: www.crossingthemedicineline.net/about_us.htm. Accessed October 7, 2009.
- Cunfer, G. 2005. *On the Great Plains: Agriculture and Environment*. College Station, Texas: Texas A&M University Press.
- Dolan, C.C. 1999. The national grassland and disappearing biodiversity: can the prairie dog save us from an ecological desert? *Environmental Law* 29(1): 213-234.
- Fargey, P.; Tuckwell, J.; Carlson, J.; Bristol, B.; Davis, S.; Sissons, R.; Piwowar, A.; Wiltse, E.; Forrest, S. and K. Murphy. 2004. Frenchman River-Bitter Creek Conservation Site Plan. In *Shared Prairie-Shared Vision: The Northern Mixed Grass Transboundary Conservation Initiative*, Conservation Site Planning Workshop Proceedings and Digital Atlas, K. Smith Fargey, ed. Regina, Saskatchewan: Canadian Wildlife Service, Environment Canada. CD-ROM.
- Forrest, S.C.; Strand, H.; Haskins, W.H.; Freese, C.; Proctor, J. and E. Dinerstein. 2004. *Ocean*

- of Grass: A Conservation Assessment for the Northern Great Plains*. Northern Plains Conservation Network and Northern Great Plains Ecoregion. Bozeman, MT: WWF-US. 121pp + Appendices.
- Gunningham, N.; Grabosky, P. and D. Sinclair. 1998. *Smart Regulation: Designing Environmental Policy*. Oxford, UK: Clarendon Press; New York: Oxford University Press.
- Karl, J.W. and J. Hoth (eds.). 2005. *North American Central grasslands priority conservation areas: technical report and documentation*. Montreal, Québec: Commission for Environmental Co-operation and The Nature Conservancy.
- McCarthy, J. and S. Prudham. 2004. Neoliberal nature and the nature of neoliberalism. *Geoforum* 35(3):275-283.
- Mitchell, B. 2002. *Resource and Environmental Management*. 2nd ed. Toronto: Pearson Education Limited.
- Morris, P. S. 1999. Regional Ideas and the Montana-Alberta Borderlands. *The Geographical Review* 89(4): 469-490.
- Norman, E. S. and K. Bakker. 2009. Transgressing Scales: Water Governance Across the Canada-US Borderland. *Annals of the Association of American Geographers* 99(1): 99-117.
- Olsson, P.; Folke, C. and F. Berkes. 2004. Adaptive Comanagement for Building Resilience in Social-Ecological Systems. *Environmental Management* 34(1): 75-90.
- Prudham, S. 2004. Poisoning the well: neoliberalism and the contamination of municipal water

- in Walkerton, Ontario. *Geoforum* 35(3): 343-359.
- Reed, M.G. and S. Bruyneel. 2010. Rescaling Environmental Governance, Rethinking the State: a Three-Dimensional Review. *Progress in Human Geography. Progress in Human Geography Online First*: January 26, 2010, DOI: 10.1177/0309132509354836.
- Robbins, P. 2004. *Political Ecology: A Critical Introduction*. Malden, Massachusetts: Blackwell Publishing.
- Smith Fargey, K. (ed.). 2004a. *Shared Prairie-Shared Vision: The Northern Mixed Grass Transboundary Initiative*. Conservation Site Planning Workshop Proceedings and Digital Atlas. Regina, SK: Canadian Wildlife Service, Environment Canada. CD-ROM.
- Smith Fargey, K. 2004b. Introduction. In Smith Fargey, K. (ed.). *Shared Prairie-Shared Vision: The Northern Mixed Grass Transboundary Initiative*. Conservation Site Planning Workshop Proceedings and Digital Atlas. Regina, SK: Canadian Wildlife Service, Environment Canada. CD-ROM.
- Stonich, S. C. 1998. Political Ecology of Tourism. *Annals of Tourism Research* 25(1): 25-54.
- Sullivan, P.; Hellerstein, D.; Hansen, L.; Johansson, R.; Koenig, S.; Lubowski, R.; McBride, W.; McGranahan, D.; Roberts, M.; Vogel, S. and S. Bucholtz. 2004. *The Conservation Reserve Program: Economic Implications for Rural America*. United States Department of Agriculture Economic Research Service. Agricultural Economic Report Number 834. 112pp. Available: www.ers.usda.gov/publications/aer834.pdf.
- The Nature Conservancy (TNC), Northern Great Plains Steppe Ecoregional Planning Team.

1999. *Ecoregional Planning in the Northern Great Plains Steppe*. The Nature Conservancy. 65pp+Appendices.
- United States Department of Agriculture – Farm Service Agency (USDA-FSA). No Date. Conservation Programs: The Conservation Reserve Program. Available: <http://www.fsa.usda.gov/FSA/webapp?area=home&subject=copr&topic=crp>. Accessed April 13, 2009.
- Vaisey, J. S. and P. Strankman. 1999. Prairie Grasslands: An Undervalued Resource. Grass, Cows and Environmental Management on the Canadian Prairies. *Great Plains Research* 9(2): 371-395.
- Walker, P.A. 2006. Political ecology: where is the policy? *Progress in Human Geography* 30(3): 382-395.
- World Wildlife Fund (WWF). 2010. *Northern Great Plains Projects: Transboundary Prairie Conservation Project*. Available: <http://www.worldwildlife.org/what/wherewework/ngp/projects.html>. Accessed March 9, 2010.
- Young, O.R. 2002. *The Institutional Dimensions of Environmental Change: Fit, Interplay, and Scale*. Cambridge, MA and London, UK: The MIT Press.

CHAPTER 6

CONCLUSION

6.1 SUMMARY OF RESEARCH FINDINGS

This dissertation has examined the prospects for ecosystem-based management or for co-operation across the Saskatchewan-Montana border to conserve and manage the grasslands of the FRBC region. The literature has described the 49th parallel in the Northern Great Plains as ‘imaginary’, ‘artificial’, ‘intangible’ and ‘ridiculous’ (LaDow 2001; Morris 1999; Schwartz 1997; McKinsey and Konrad 1989; Stegner 1962), as it divides a landscape that is devoid of natural features to distinguish one country from the other. Through the examination of historical maps and records from regional explorers and the Boundary Survey Party, my first manuscript (Chapter 2) traced the origins of the international border along the 49th parallel. In this paper, I uncovered two narratives that have dominated the discourse of the 49th parallel over time: that the border is simultaneously real and imaginary, and that the borderland is perceived concurrently through lenses of affinity and antagonism. Therefore, while the international border is indeed arbitrarily placed, it nonetheless divides two distinct nations with different philosophical orientations, and political and regulatory regimes. Residents of the borderland feel a profound connection to the landscape; yet they also recognize that the region’s extreme climate and physical isolation create conditions in which it is difficult to make a living. In the second manuscript (Chapter 3), I built upon the historical insights presented in the first. This manuscript

described how contemporary events have acted to redefine the 49th parallel border, and how this new conceptualization of the border may influence individuals' and institutions' ability to interact across the border. This paper drew upon the findings of Vannijnatten (2004), who suggested that the Canada-US environmental relationship is only indirectly affected by national disagreements or divergences in other policy domains. She argued that this is primarily due to the fact that Canada-US environmental relations are driven by strong, subnational (regional) cross-border relationships.

I examined the effects of the 9/11 terrorist attacks at the international/national level, and the effects of the BSE Crisis at the regional/local level, on the FRBC segment of the Saskatchewan-Montana border and the relationships across it. I found that the effects of the BSE crisis were highly localized, and have generally not contributed to significant, lasting tensions in the cross-border relationship. However, given that any resentment remaining from the BSE Crisis is localized at the levels of communities or individuals, and that the environmental relationship is driven by subnational relationships, the potential for these tensions to deter future cross-border communication and co-operation should not be ignored. By contrast, I found that 9/11 resulted in broad changes to the way that the border is conceptualized and managed. Specifically, new security policies and regulations implemented after 9/11 have acted to reinforce the Canada-US border. The new security environment of the post-9/11 era has limited cross-border trust, mobility, and communication to the detriment of transboundary co-operation in a variety of policy domains, including the environmental.

The third manuscript (Chapter 4) held that, regardless of the ecological and social similarities across the 49th parallel, the border created and represented a divide between sovereign nations and their respective political and regulatory regimes. It presented the case for a ‘shared landscape’ between Saskatchewan and Montana, highlighting the fact that the 49th parallel is an arbitrary construct with respect to the movements of wildlife species and with respect to the cross-border kinship ties of the region’s human residents. Then, it illustrated how the differences created and represented by the international border subjected the region to ‘divergent visions’ for landscape planning and management. These divergent visions were illustrated through the case of the Greater sage-grouse, a migratory bird protected as an endangered species in Canada but subject to annual hunting seasons in the United States. I compared the drivers of, and barriers to, transboundary co-operation identified by Norman and Bakker (2009) to the facilitators of, and obstacles to, cross-border co-operation found in the FRBC region. I found remarkable convergence between the two. Ultimately, this paper found that the ‘divergent visions’ outweighed the concept of a ‘shared landscape’, in that the different political and regulatory systems of the different countries have, to date, complicated the implementation of ecosystem-based approaches to environmental management in the transboundary grasslands. However, I suggested that demonstrated strengths in transboundary conservation planning should be focused on international collaboration for setting conservation targets. Once common conservation goals are set, Canada and the United States may work independently, under their respective political and legal frameworks, to meet these goals. The ends of ecosystem-based management in the grasslands may then be met without a true, and

arguably impossible, harmonization of conservation laws, policies, and programs across the border, as the outcomes of ecosystem-based management are more important than adhering to its procedural components.

In the fourth and final manuscript (Chapter 5), I examined the execution of environmental management efforts in the FRBC region. Using Bryant and Wilson's (1998) critique of environmental management as a framework, I evaluate how the case of grasslands conservation and management in the FRBC region acted to perpetuate the shortcomings of environmental management identified by Bryant and Wilson, and how it shows advancement in environmental management as a process and as a field of study since their critique. Specifically, while this research demonstrated that environmental management largely remains a top-down, state-centred approach in which external decision-makers dominate, state agencies have become increasingly willing to incorporate local knowledge into decision making processes. Successes in environmental management in the grasslands of the FRBC region have been led by non-state, or grassroots actors, in informal cross-border networks. I argued that a combination of top-down (state-led) and bottom-up (led by non-state actors) approaches would be necessary to achieve true success in transboundary environmental management in the FRBC area. Finally, I argued that adopting an historical approach to, and integrating multiple disciplines in, environmental management studies would allow for both the process and the discipline of environmental management to evolve. In the first instance, environmental management efforts would correspond more closely to local contexts and conditions if an historical approach was adopted. In the second, interdisciplinary environmental management studies incorporating both the

physical and social sciences could give weight to different types and sources of knowledge in environmental decision-making processes.

At the outset of this research, I endeavoured to investigate the feasibility of increasingly harmonizing laws, policies and programs for grasslands conservation and management to achieve ecosystem-based management across the Saskatchewan-Montana border in the FRBC region. To this end, I posed three questions to shed light on the larger question of the suitability of ecosystem-based approaches for environmental management in the transboundary grasslands (Table 1.2). In the next section, I address how each substantive chapter contributes to answering these questions. Then, I draw four general conclusions from these results. First, this research demonstrated the value of taking an historical approach to environmental management studies, and in particular to studies of environmental management across borders. Second, this research emphasized the value of environmental governance, or of meaningfully incorporating non-state and local knowledge and input, in environmental management processes. Third, it confirmed the conceptual murkiness of, and practical frustrations associated with, ecosystem-based management. Each of the papers in this dissertation highlighted the role that twenty-first century changes to global discourse of borders, and to the Canada-US border, have had on cross-border mobility and relations in the Northern Great Plains region. Each of these conclusions will be discussed in turn. A discussion of the key contributions that this research makes to the field of environmental geography follows. I then consider the policy implications of these findings. Finally, I conclude by identifying the limitations to this study, and avenues for future research to

further advance theoretical and empirical understanding in transboundary environmental management.

6.2 ASCERTAINING THE SUITABILITY OF ECOSYSTEM-BASED MANAGEMENT APPROACHES ACROSS THE 49TH PARALLEL: ANSWERING THE RESEARCH QUESTIONS

This research sought to ascertain the suitability of ecosystem-based approaches to environmental management for bringing public, private and civic actors together to address social and ecological concerns in a holistic way, that is cognizant of whole ecosystems and the linkages between ecological and socioeconomic systems, in a transboundary environmental management context. To this end, I posed three research questions to ascertain the suitability of ecosystem-based approaches for grasslands conservation and management across the Saskatchewan-Montana border in the FRBC region. These were:

- i. How might the ‘borderland’ concept influence ecosystem-based approaches to grasslands conservation and management in place of politically- or administratively- defined approaches in the FRBC area? And, to what extent are residents in synch with the ‘borderland’ concept?
- ii. What are the implications of ecosystem-based approaches for institutional arrangements for environmental management, such as government agencies, other governance regimes, and informal institutions including public involvement?

- iii. What are the implications of ecosystem-based approaches for existing property regimes and the maintenance of traditional livelihoods in the region?

With respect to the first question, the study area for this research was based upon ecological, rather than political, boundaries. Chapters 2, 3 and 4 illustrated that those who live and work in the FRBC region were highly attuned to the ‘borderland’ concept, in that virtually all of the interview participants spoke of ecological and social homogeneity across the border. In particular, agricultural producers often referred to their ‘neighbours’ across the Line, and emphasized the uniformity of agricultural, social, and economic concerns and challenges across the border. However, as was emphasized in Chapter 2, residents noted that although people might be the same across the border, “the rules that we both live under are quite a bit different” (“Neil”, Canadian agricultural producer, interview, March 18, 2008).

Chapters 3 and 4 explicitly addressed the application of ecosystem-based approaches to environmental management in the transboundary FRBC region. Both papers emphasized that although “...borders are socially constructed, they are nonetheless constructed” (Reed and Bruyneel, 2010: 5). Specifically, Chapter 3 highlighted that recent changes to the border - namely increased securitization of the border since 9/11, and the potential for eroded cross-border trust among local actors as a result of the BSE Crisis – have acted to limit communication and co-operation across the border. Chapter 4 emphasized that, despite having many indicators of being a ‘shared landscape’ or ecosystem, ‘divergent visions’, political systems, and legislation on either side of the border predominate. As such, while the ‘borderland’ concept may hold

theoretical weight for academics and meaning to residents in everyday life, in practical terms, the reality of the political border is not easily transcended in environmental management.

These findings related directly to the second research question, *what are the implications of ecosystem-based approaches for institutional arrangements for environmental management, such as government agencies, other governance regimes, and informal institutions including public involvement?* Chapters 3, 4, and 5 each evaluated the strength of informal networks, often led by non-state entities such as ENGOs and actors from civil society, in transboundary environmental management. Concomitantly, these papers addressed the challenges to formal cross-border communication and action on behalf of public agencies and public agency personnel, particularly in the post-9/11 security environment. Most significantly, Chapter 5 presented the idea of hierarchical tightening of the Canada-US border. One interview participant noted that “as you move farther up in that government hierarchy, that border becomes more real” (“George”, American public agency employee, interview, February 5, 2008). This meant that the lack of formal organizational and institutional support for transboundary work on behalf of public agencies left that work to the domain of informal networks and non-state actors. While Chapters 3, 4 and 5 highlighted the successes of such informal arrangements, Chapter 5 emphasized the need for formal, state-led support of transboundary environmental management efforts. This manuscript argued that a combination of both ‘top-down’ (formal, state-led action) and ‘bottom-up’ (informal action led by non-state actors) would be necessary to achieve meaningful transboundary co-operation for grasslands conservation and management.

Finally, the question *what are the implications of ecosystem-based approaches for existing property regimes and the maintenance of traditional livelihoods in the region?* is answered in Chapters 4 and 5. Chapter 4 discussed the patchwork of different land tenures throughout the FRBC region as an obstacle to having uniform policy and practice in grasslands environmental management. Specifically, the individual decisions of the many private landowners in the region were cited as potentially problematic for grasslands conservation efforts. This was an interesting finding, as it suggested that the power of individual decisions might be an obstacle to implementing ecosystem-based approaches to environmental management. Chapter 5 more explicitly addressed the value of incorporating traditional knowledge, such as that held by local agricultural producers, into decision-making processes in environmental management. This paper suggested that if local insights and values were to be incorporated into processes of policy- and law-making, local receptivity to the policies and laws developed and implemented might be increased.

Four general conclusions may be drawn from the answers to these research questions. These conclusions will be discussed in the following section.

6.3 GENERAL CONCLUSIONS FROM THE RESEARCH

6.3.1 The Value of an Historical Approach

This research was situated at the nexus of three bodies of literature: environmental management, border studies and political ecology. In each of these literatures were strong calls to adopt historical approaches to research (Neumann 2005; Barrow 1999; Bryant and Wilson

1998; Newman and Paasi 1998). Barrow (1999: 245) argued explicitly for historical analyses to accompany social and biophysical inquiries, as “if the environmental manager does not understand society and history as well as ecology, then serious difficulties can arise”, for example, in misinterpreting the meaning of local environmental values and attributes. Furthermore, attention to history would allow researchers to ‘backcast’, or to use an understanding of past events, to envision future challenges and to anticipate how people might respond to policy and environmental changes based on their past responses (Barrow 1999: 262-263).

This dissertation demonstrated the value of taking an historical approach to environmental management research. An understanding of local history provided contextual grounding for the observations and findings at hand, allowing them to be placed and understood in the framework of pre-existing conditions, relationships and processes. Specifically, the first manuscript was explicitly historical, tracing the origins and evolution of two descriptive border narratives over time. This paper placed current perceptions of the border and the borderland landscape into context, and helped to establish understanding of residents’ deep ties to, and kinship for, their environment. The other papers drew on historical analyses more implicitly, but did so nonetheless. Through an understanding of what borderland life used to be like, the magnitude of recent changes to border security policies, and the associated restrictions to cross-border communication and mobility, could be better understood. The final manuscript explained non-state actors’ aversion to top-down or external decision-making and control by communicating residents’ past experiences with government agencies such as Parks Canada

during the process of creating Grasslands National Park. This explanation also allowed current collaborations of state and non-state actors in grasslands conservation and management to be understood as an emerging phenomenon, representing a major achievement in the evolution of environmental management as both a process and a field of study (Bryant and Wilson 1998).

6.3.2 The Value of More Inclusive Decision-Making

It follows that the second conclusion to be drawn from this research is that the research emphasized the importance of incorporating a diversity of actors in investigations of environmental management and in environmental decision-making processes (e.g. Bryant and Wilson 1998). This dissertation highlighted the concerns of those living and working in the FRBC region by articulating the set of threats perceived to the region's grassland environment in the words of those who observed and experienced those threats on a daily basis. Chiefly, the dissertation emphasized a range of threats, including local experiences of the impacts of external decision-making on local actors and environments; rural gentrification and the associated loss of ranching culture and historically-based ties to the landscape; and fears about the impacts of energy development, the spread of exotic invasive species, the pace of land conversion from grassland to cropland (particularly in the context of biofuel development), the potential impacts of climate change and concerns about water sharing, water shortages, and increasing and recurrent droughts. Obtaining local insights about the severity of these problems was found to be key for informing appropriate and effective regional environmental policy.

In this vein, each of the papers combines insights from the antecedent academic literature⁷⁶ with input from employees of public (state) agencies, non-state organizations (ENGOS), and local agricultural producers and landowners. As such, each element of this dissertation demonstrated the concept of environmental governance, in which “power and authority are horizontally decentralized and devolved to broader members of society” (Harrington *et al.* 2008: 200; see also Reed and Bruyneel 2010: 2). While the third and fourth manuscripts presented a strong case for the success of informal networks and interpersonal relationships among individual actors in transboundary planning and action (e.g. Norman and Bakker 2009), the final manuscript argued for a balance of top-down (state-led) and bottom-up (led by non-state and grassroots actors) approaches in environmental management, rather than a full devolution of power from the state (Berkes 2007; Berkes 2002; Young 2002). In this way, this research was consistent with the recent environmental governance literature that has questioned the respective roles of the state and of non-state actors in environmental decision-making processes, and the appropriate balance thereof (e.g. Reed and Bruyneel 2010; Norman and Bakker 2009; Mansfield 2005).

6.3.3 The Problems of Ecosystem-Based Management

In principle, ecosystem-based management “seeks to transcend arbitrary political and administrative boundaries, to achieve more effective, integrated management of resources and ecosystems and regional and landscape scales” (Slocombe 1998: 31). However, in practical

⁷⁶ And, in the case of the first manuscript, from regional creative literature.

execution, ecosystem-based management is plagued by conceptual and definitional murkiness, centred around the fact that there is no universal method of delimiting an ‘ecosystem’, and that there are no simple guidelines for how to ‘do’ ecosystem-based management (Cortner and Moote 1999; Endter-Wada *et al.* 1998; Fitzsimmons 1998, 1996; Slocombe 1998; Stanley 1995). In this research, this gap was explicitly confirmed by one Canadian public agency employee:

The Department...puts a high priority on ecosystem management. That’s the basis of the Department’s management...[When it comes to working with other agencies, we’re] confused. I think because there’s this ecosystem management philosophy and people were really uncertain as to what it means. Before it was more big game focused, and you had a single-species approach...I think that was more clear...so we have this idea of what we’re supposed to do, but how to actually do it?...I think the decision-making process is difficult because it is so complex trying to figure out. We know we would like to do ecosystem management. What does that mean on the ground? ‘Cause you get all these different people and everyone would have somewhat different understanding of what it means, or lack of understanding of what it means. So, yeah, that’s a difficult thing and, we’re trying at this point. And I don’t think we’ve got all that far yet (“Christine”, interview, November 15, 2007).

The concerns expressed in this interview excerpt were illustrated in the third manuscript (Chapter 4). This paper suggested that, at present, true ecosystem-based management in the transboundary grasslands is not a feasible goal. Rather, cross-border, interagency co-operation should be focused on collaborating to set common goals, which may then be achieved through independent national and subnational actions. This way, the regional grasslands may be managed under the existing political and jurisdictional framework as an effective ecosystem, without requiring agencies and actors to negotiate the full harmonization of conservation and management laws, policies, and programs. This research confirmed that the latter approach

would be difficult, if not impossible, as it remains stymied by incongruent government and governance structures across the border, entrenched resistance to co-operate across jurisdictional boundaries, and limited human, financial, and informational resources to engage in meaningful and formal transboundary work (Norman and Bakker 2009).

6.3.4 The Discourse of Borders

The postmodern discourse of border studies holds that processes of globalization have acted to effectively dissolve borders and reduce the relevancy of the state (Newman 2006; Newman and Paasi 1998). This line of inquiry has been questioned by many scholars, who have suggested that globalization might have the counter-effect of reinvigorating nationalism and national identity, thereby maintaining the importance of borders and of the state (Newman 2006; Breitung 2002; Newman and Paasi 1998). Yet another paradigm for border studies has emerged following the new global security discourse resulting from the September 11, 2001 terrorist attacks on the United States (Farson 2006; Newman 2006, 2003; Nicol 2006; McManus 2005; Singh and Ganster 2003). New ways of conceptualizing ‘borders’, ‘nationality’, and ‘security’ since 2001 have prompted the prevailing economic discourse of dissolving borders in the wake of globalization to be supplanted by the discourse of reinforcing borders for purposes of national security (Farson 2006; Newman 2006; Nicol 2006). This research complements and builds upon this new conceptualization of borders and borderlands, as it situates the new border security regime in the regional, historical context, and draws attention to the potential implications of a reinforced border for transboundary environmental co-operation.

6.4 CONTRIBUTIONS TO ENVIRONMENTAL GEOGRAPHY

This research makes several key contributions of theoretical, empirical, and methodological importance to the field of environmental geography. This research is nested within the common theoretical groundings of the three distinct bodies of literature informing this investigation: environmental management, border studies, and political ecology. It makes a significant contribution to each of these domains. Working at the nexus of these lines of inquiry, this research emphasizes the value of adopting historical and interdisciplinary approaches to the study of environmental management. In particular, it focuses on the challenges of implementing ecosystem-based approaches to environmental management across borders, and the value of incorporating multiple stakeholders in environmental governance. In doing so, this dissertation is methodologically unique in that it incorporates both primary and secondary research, and a range of disciplines and literature types.

6.4.1 Theoretical and Empirical Contributions

Given its setting in a transboundary ecosystem, this research assumes *a priori* that the environmental problems and challenges encountered transcend anthropogenic borders. As such, it is in line with contemporary understanding of the environment and the nature of complex and emerging environmental problems (Moore 2008; Carter 2007; Castree 2004; Barrow 1999). And, it requires a form of environmental management that is conducive to operating on the landscape or ecosystem scale across these borders. In addition, it is cognizant of the boundaries that have been constructed among stakeholder groups (specifically, among state agencies, non-

state entities such as ENGOs, and local agricultural producers) by traditional forms of state-centric environmental management. This research engages with the concerns of political ecology to interrogate the emerging re-orientation of power among these different stakeholder groups by highlighting the successes of non-state and grassroots actors in transboundary grasslands conservation, and emphasizing the need for both state-led (top-down) and non-state or grassroots (bottom-up) efforts to effectively communicate and co-operate across the 49th parallel. The resulting contributions made to the key literature domains of environmental management, border studies, and political ecology are discussed in detail.

Environmental Management

At the outset of this research, I identified two key gaps in the transboundary environmental management literature. First, while much research focused on transboundary water resources and water governance (e.g. Norman and Bakker 2009, 2004; Alper 2004; Hildebrand *et al.* 2002; Schwartz 2000; Jones and Taylor 1999; Hartig *et al.* 1998; Sadler, 1993), there was a relative lack of literature addressing transboundary environmental management in terrestrial contexts. Second, much of the research that did address questions of terrestrial environmental management across borders investigated cases of transboundary conservation, in which landscapes were protected on either side of the border(s) that divided them (e.g. Stefanick 2009; Lunstrum 2008; Pedykowski 2003; Wolmer 2000). This research begins to fill both of these gaps, in that it examines terrestrial, transboundary environmental management in a setting where there are incongruent levels of landscape and species protection across the border.

Next, this research required an examination of existing efforts to manage and conserve the grasslands environment in a transboundary setting. I did this by consulting ecoregional conservation strategies produced by ENGOs active in the Northern Great Plains, and specifically the FRBC region (Riley *et al.* 2007; Forrest *et al.* 2004; Smith Fargey 2004; TNC 1999). While useful from the perspective of setting biophysical and species restoration targets, these strategies largely ignored the social, economic, and cultural aspects of the degradation and conservation of the regional grasslands. In addition, the current transboundary communication and research fostered by the Crossing the Medicine Line Network follows the trends of these predecessors in holding a bias to conservation biology and the biophysical sciences. This research⁷⁷ is a starting point to inject a social science perspective to these endeavors, bringing them more in line with what a 'revised', inclusive approach to environmental management might look like (Bryant and Wilson 1998).

Border Studies

In 1998, David Newman and Anssi Paasi (pp. 200-201) proposed an agenda for border studies, which included the following elements. First, geographers should more explicitly consider the multidimensional and multiscalar attributes of boundaries. Second, in recognizing that borders are not static, border studies should be approached historically. Third, studies of nature and the environment should be expanded in the context of boundaries, in terms of national iconography, ecopolitics and transboundary pollution. And, finally, boundary texts and

⁷⁷ Including the related assessment of sociodemographic trends in the FRBC region produced for Parks Canada-Grasslands National Park (Christie 2009).

narratives should be deconstructed to understand the creation of and conflicts surrounding borders. This research addressed each of these calls. First, it considered the multidimensional and multiscale attributes of borders by highlighting the challenges to environmental management across the 49th parallel. It highlighted the fact that the Canada-US border is a series of distinct regional borderlands (McKinsey and Konrad 1989), and examined how these subnational relationships drive the Canada-US environmental relationship (Vannijnatten 2004). This research examined how international- or national-level changes to the border, unrelated to the environment, can affect the environmental relationship at the regional and local levels. Therefore, this research is an example of “a more detailed examination of the environmental impacts of transboundary externalities and spillovers”(Newman and Paasi 1998: 199). In addition, it addressed the challenges of communication, co-operation, and co-ordination across intra-national borders, such as the borders dividing provinces or states; the borders among agencies or units within agencies; and the borders among stakeholder groups, including federal, state/provincial and municipal/county agencies, ENGOs, the energy industry, and agricultural producers. It adopted an historical approach to border studies by considering the pre-border landscape in terms of historical Aboriginal mobility in the Northern Great Plains; the evolution of the 49th parallel as an international border; and perceptions of the border over time, from its delimitation to its contemporary challenges. This research addressed environmental co-operation for grasslands conservation and management in the context of a terrestrial ecosystem divided by an international border, across which there were incongruent levels of landscape and species protection. Finally, this research deconstructed border and borderland narratives from a variety

of sources, including scholarly books and articles; previously published interviews and regional oral histories; historical and contemporary regional maps; creative literature such as poetry, fiction, and autobiographies; and insights from interviews with current borderland residents to provide a comprehensive account of how the 49th parallel acts, and has historically acted, to shape regional lives and livelihoods.

By emphasizing the strength of the ‘borderland’ concept, in which residents (and issues) in areas adjacent to the border more closely relate to those across the border than to those farther away in their own country (McKinsey and Konrad 1989), this research contributes to theory in transborder regions. Specifically, the findings of this research inform how transborder regions differ from regions not subject to borders, in that the former are influenced by the jurisdiction(s) they border and/or share. In this research, the people and the issues of southwestern Saskatchewan were inseparable from the people and issues of northern Montana and vice-versa; however, even a journey to more urban areas of the same province or state yielded a change of identities, challenges and opportunities. The findings of this research indeed emphasized that the people of, and issues affecting, the FRBC area are specific to that transboundary region, and that understanding of local realities and peculiarities is substantially reduced outside of this region. For example, several interview participants observed that not only environmental organizations or policy makers centred in far-away places such as Ottawa or Washington, DC did not possess adequate understanding of the region’s needs, but law- and policy-makers centred just outside of the region in places such as Regina, Saskatchewan often lacked knowledge of the local area. As such, this research suggests that the theory and practice of regional geography could benefit from

an explicit examination of *transborder* regional geography to capture the unique circumstances of transboundary settings.

In addition, while much comparative literature exists in the Northern Great Plains borderland (McKinsey and Konrad 1989) and many studies of cross-border historical and social ties across the 49th parallel exist (McManus 2005; LaDow 2001; Morris 1999; Schwartz 1997; Widdis 1997; McKinsey and Konrad 1989), little has been published to date about the effects of twenty-first century border change on the dynamics of the international border in the Northern Great Plains. National security policies and regulations, designed to “(protect) national values against foreign threats” (Levy 1995: 37), represent a case in which national-level instruments must be applied uniformly along the Canada-US border without accommodating regional variability in the binational relationship. However, as each of the Canada-US borderlands are distinctive in their regional cultures, natural resource endowments, and their perceptions of the border, efforts to establish and enforce a single set of policies and regulations across the Canada-US border are likely to encounter regional variations in acceptance, applicability, and interpretation. This dissertation examined the implications of superimposing a ‘one size fits all’ approach to security from the perspective of the Northern Great Plains border, which is rural and agrarian in character, geographically remote, and sparsely populated (Widdis 1997). Whereas residents of a geographically central, urbanized, or heavily populated borderland corridor⁷⁸ might

⁷⁸ Such as the often-researched Cascadia borderland in the Pacific Northwest (e.g. Sparke 2005; Cold-Ravnkilde *et al.* 2004; Smith 2004; Alper 1996; Edgington 1995), which includes the British Columbia-Washington border across which 16.3% of cross-border car traffic flows (Davidson *et al.* 2010); or the well-traveled border crossings between Ontario and Michigan (27.7% of cross-border car traffic), Ontario and New York (26.6% of cross-border car traffic),

place great value on stringent border security measures aimed at reducing terrorism and illegal immigration, this research demonstrated that such measures often seemed illogical in the Northern Great Plains, a borderland physically and psychologically distant from such concerns, in which the historical cross-border relationship has been characterized by frequent and informal crossings (Farson 2006; McManus 2005; Bennett and Kohl 2001; LaDow 2001; Morris 1999; Widdis 1997). Finally, while much literature focused on the economic implications of increased border security in the post-9/11 era (e.g. Farson 2006; Nicol 2006; Brunet-Jailly 2004), this research examined the implications of recent border security changes from the perspective of international environmental relations. The new border security regime has comparatively been addressed less frequently (e.g. Stefanick 2009; Singh and Ganster 2003), and is usually examined as part of larger investigations in Canada-US relations (e.g. Vannijnatten 2004).

Political Ecology

Bryant and Wilson's (1998) call for a revised approach to environmental management emphasized the importance of interdisciplinary and multistakeholder collaboration, and the establishment of an historical and contextual understanding of local conditions to arrive at a more inclusive definition of 'environmental management' integrating both state and non-state actors. The inclusion of a wider set of stakeholders in environmental decision-making may be considered a form of environmental governance, for example through neoliberal processes of decentralizing administrative, managerial, and decision-making control (e.g. McCarthy and

or New Brunswick and Maine (10.8% of cross-border car traffic) (Davidson *et al.* 2010). By contrast, the Saskatchewan-Montana border accounts for just 0.2% of cross-border car traffic (Davidson *et al.* 2010).

Prudham 2004; Prudham 2004). Environmental governance is associated with the field of political ecology given their common analyses of the range of voices in environmental management discussions and of the relative power of different stakeholder groups in decision-making processes (see Reed and Bruyneel 2010; Norman and Bakker 2009; Bakker and Cameron 2006; Carlsson and Berkes 2005; Folke *et al.* 2005; Rhodes 1997 for themes in environmental governance; and Walker 2006; Robbins 2004; Reed and Mitchell 2003; Stonich 1998 and Blaikie and Brookfield 1987 for themes in political ecology).

While political ecology's roots are in the developing and (post)colonial 'Third World', several scholars have advocated the application of political ecology to 'First World' settings and issues (Schroeder 2005; McCarthy 2005a, 2002; Robbins 2002). More specifically, a compelling argument has been made for applying political ecology to the (North) American West, as the colonial histories that have dominated the discourse of the 'Third World' are reflected in the history of the 19th century Western frontier, particularly in the context of European-Aboriginal conflicts (McCarthy 2005a, 2005b, 2002; Wainwright 2005; White 1991).

This research incorporated the concerns of political ecology by seeking the insights of state and non-state actors, with the latter group including representatives from ENGOs and local, private landowners and agricultural producers. In doing so, the land use and land management contests that are occurring in the Northern Great Plains more broadly, and within the FRBC region specifically, between state actors, ENGOs, agricultural producers, industry, and other users were brought into focus. The themes and findings of this research were consistent with those emerging from 'First World' political ecology in the American West (e.g. Sheridan 2007,

2001; Robbins 2006; Hurley and Walker 2004; Walker and Hurley 2004; Brogden and Greenberg 2003; Walker and Fortmann 2003; Walker 2003; Singleton 2002; Feldman and Jonas 2000; Wilson 1999). In this context, this research is significant because political ecology research in Canada, and particularly the Canadian West, is relatively rare compared to American studies (e.g. Reed 2007; Clapp 2004). Canadian political ecology research is often focused on aboriginal land claims, resource rights, and health (e.g. Stanley 2006; Richmond *et al.* 2005; Clapp 2004), urban issues (e.g. Keil 2003), community engagement in environmental management (e.g. Reed 2007) and other environmental justice issues (see Schroeder *et al.* 2006 for an overview).⁷⁹ While this research addresses the theme of community engagement in rural environmental management observed in Canadian political ecology scholarship (Reed 2007), it is unique in that pulls the themes of political ecology in the American West, including land use contests, rural gentrification, and ‘working’ (chiefly, agriculture and primary-resource extraction) versus ‘amenity’ (scenic, recreational, or conservation) landscapes, across the 49th parallel into Canada. There is also a growing body of Canadian scholarly work on environmental governance (e.g. Reed and Bruyneel 2010; Norman and Bakker 2009; Bakker and Cameron 2006; McCarthy and Prudham 2004; Prudham 2004), and this research adds to this literature. However, while much of this extant literature addresses domestic and transboundary water governance, this research focuses on the governance of landscapes and their resources.

⁷⁹ Environmental justice is a movement defined broadly as , “the justice of the distribution of environments among people” (Low and Gleeson 1998: 2).

6.4.2 Methodological Contributions

This research adopted an interdisciplinary approach in a wider sense than just considering the potential inputs of other disciplines, such as history. In the literature review, I deliberately cast a wide net to capture a range of conceptualizations of the 49th parallel border and the Northern Plains borderland in a variety of types of literature. The academic literature frequently referenced the importance of creative literature in the Northern Great Plains, primarily as a vehicle through which residents could express their perceptions of the border and the landscape, and the values they ascribed thereto (LaDow 2001; McKinsey and Konrad 1989). Consistent with this line of thought, I examined a range of creative works during the literature review process, particularly poetry, fiction, and autobiographies authored by those living in, and/or reflecting upon, the Northern Great Plains borderland. I was also interested in investigating the evolution of the 49th parallel border. Therefore, it was necessary to understand how the landscape was used and imagined both prior to and since the delimitation of the border. I examined the maps of the pre- and post-border explorers to supplement textual records and interview data. In doing so, I treated maps as graphic or cultural ‘texts’ (Aitken 2005; Doel 2003; Barnes and Duncan 1992; Harley 1992, 1989; Pickles 1992). I ‘read’ these maps using hermeneutic analyses, with attention to symbology, the maps’ origins, their intended meanings at the time of creation, and their received meaning at the time of analysis (Kitchin and Dodge 2007; Aitken 2005; Pickles 2004, 1992; Doel 2003). Also, in addition to conducting and analyzing my own set of interviews, I consulted previously published interviews with and oral histories of regional residents (Poirier *et al.* 2005; Widdis 2006). As such, the methods employed were

consistent with ethnography, which has played a critical role in political ecology research as it seeks to understand “the symbolic meanings ascribed to landscapes and environments and how these imbricate with struggles over control and access to material resources (Neumann 2005: 7).

Combining such a range of literature types, including the use of maps as unconventional texts, in geographical research is an innovative endeavor. While much geographical research strives to be interdisciplinary, this quest is frequently limited to negotiating the balance between physical (the ‘hard’ sciences) and human (the social sciences) geography (e.g. Harrison *et al.* 2004). This divide has been particularly evident in the field of political ecology, which has been accused for both its lack of consideration of politics (Walker 2005; Peet and Watts 2004; Paulson *et al.* 2003; Blaikie and Brookfield 1987) and ecology (Walker 2005; Paulson *et al.* 2003; Stott and Sullivan 2000; Vayda and Walters 1999). By contrast, this research is unique in that it negotiates geography’s divide between the biophysical and social sciences in the domain of landscape and species management and conservation while explicitly engaging with a range of other disciplines, including but not limited to history, English literature, international law and relations, and political science.

6.5 POLICY IMPLICATIONS

This research contributes not only to theoretical and empirical scholarly research, but may also serve to inform environmental policy. For example, this research highlighted some of the implications of having different political and legal regimes, and different objectives for species management and conservation, across the Saskatchewan-Montana border in the case of

the Greater sage-grouse. While this research did not propose a solution for this issue *per se*, it did illustrate the importance of transboundary goal-setting so that divergent national laws, policies and programs may lead to common results. Such an approach might also provide, at the very least, a starting point for state agencies and departments to execute ecosystem-based approaches to environmental management, which to date have been stymied by a lack of consensus on how to understand and implement ecosystem-based management.

In addition, this research provided important insight on the human, and specifically local, implications of state-centred environmental management and decision-making, and of policy change. Specifically, this research emphasized the willingness of non-state actors in ENGOs and in local communities to meaningfully engage and collaborate with state agencies in environmental decision-making. This research highlighted that the origin of non-state actors' reticence to accept state-centric management is rooted in the observed shortcomings of previous policies and decisions, such as historical policies encouraging large-scale settlement and cultivation of the grasslands in the Northern Great Plains, and the lack of local knowledge sought in the establishment of Saskatchewan's Grasslands National Park. By confirming the value of local knowledge, and the willingness of non-state actors to collaborate with the state in grasslands conservation and management domestically and across the border, this research served to support the shift from *government* and *governance* advocated in the literature.

Finally, this research paid close attention to historical and contemporary trends in the Canada-US, and specifically the Saskatchewan-Montana, border regime and relationships across the border. In presenting insights about the border, and how it has changed in the post-9/11 era

using the words of public agency personnel, ENGO employees, and private landowners, this research provided a poignant account of the range of human impacts of the new border security regulations implemented since 9/11. These impacts ranged from reduced interagency communication and co-operation across the border, to contributing to rural depopulation and decline by limiting historical community cohesion and individual mobility across the border. Therefore, this research might provide invaluable insights to policy makers and analysts regarding the real-world implications of the new border security environment.

6.6 LIMITATIONS AND FUTURE RESEARCH DIRECTIONS

Limitations to this analysis include the difficulty of finding interview participants in the rural and sparsely populated borderland region. Given the difficulties associated with recruiting interview participants from within the FRBC region, several interview participants resided outside of the boundaries of the FRBC region, but had significant knowledge of the FRBC region through their personal or professional activities. Significantly, this research did not explicitly engage with Aboriginal residents of the Reserves/Reservations⁸⁰ in or adjacent to the FRBC region.⁸¹ Although attempts were made to contact and schedule interviews with representatives from these Reserves and Reservations, these were ultimately unsuccessful,⁸² and it is without doubt that stronger First Nations representation would have strengthened this research and its

⁸⁰ The term 'Reserve' is preferred in Canada, and the term 'Reservation' is used in the United States.

⁸¹ The Wood Mountain Reserve in the FRBC region or the Nekaneet First Nation West of the FRBC region in Saskatchewan; or the Fort Peck and Fort Belknap Reservations adjacent to the FRBC region in Montana.

⁸² That said, the interview sample does include representation from the off-Reserve/Reservation Aboriginal population and from employees of government agencies responsible for land and resource management on Reserve/Reservation lands.

findings. Finally, while this research is the product of multiple site visits from 2005-2009, the longest consecutive site visit was approximately four days. Had my visits to the FRBC region been longer in duration, true ‘participant observation’ and immersion in the communities under study could have been undertaken, strengthening my understanding of community dynamics and remaining consistent with methods in political ecology research (e.g. Robbins 2004).

Each of the manuscripts composing this dissertation points to several research areas where further inquiry is needed to advance geographical research in environmental management, border studies and political ecology. In the context of the first manuscript, the examination of the ‘similarity and difference’ and ‘affinity and antagonism’ borderland narratives would benefit from an expanded discussion of the role of gender roles and relations in the historical and contemporary borderland. Also, the inclusion of creative literature as a subject of analysis could be expanded to include local visual art, such as paintings or photographs (e.g. Poirier *et al.* 2005), to advance understanding of both historical and contemporary perceptions of the border and its adjacent lands. This would build understanding of the meaning of the border and its surrounding landscape for local residents, and it would contribute to the body of local knowledge to be incorporated into environmental management efforts. With respect to the second manuscript, ongoing research is needed to track the effects of border securitization on cross-border mobility, communication and co-operation, particularly as the post-9/11 security policies transition from being ‘new’ to ‘commonplace’. It would also be interesting to conduct a comparative study of the security experience in urban versus rural borderlands. This would build understanding of the potential variability of the effects of security upon subnational, cross-border

relationships in many policy domains, including the environmental. And, differential impacts of border security regulations for rural versus urban borderland residents might prove fertile ground for future studies in Canadian political ecology and/or environmental justice.

The results of Chapter 4 suggest that longitudinal studies and long-term monitoring of Greater-sage grouse migrations are needed, specifically those that study cross-border migrations and seasonal habitat conditions. Such research would be timely in the fields of conservation biology and environmental management. In this vein, approximately 23 per cent of those interviewed (in 7/30 interviews) noted that the Great Plains ecosystem and its migratory grassland bird habitats extend into Mexico, necessitating not binational, but trilateral, co-operation. While this paper tangentially addressed trilateral efforts for grasslands conservation and management in the context of the North American Waterfowl Management Plan, examining trilateral conservation initiatives would be a fertile ground for future research endeavours in the field of transboundary environmental management.⁸³ Furthermore, addressing trilateral, instead of simply binational, environmental relations could fulfill Newman and Paasi's call for geographers studying borders to more explicitly engage with both nature and issues of scale (Newman and Paasi 1998).

Finally, Chapter 5 highlighted the ongoing need for continued research to investigate the ways in which traditional knowledge might be meaningfully integrated into environmental management research, and conservation policies, legislation programs and projects. In the

⁸³ See, for example, Karl and Hoth's 2005 report identifying grassland priority conservation areas in North America, an effort led by the Commission for Environmental Co-operation of North America (CEC) and The Nature Conservancy (TNC).

specific context of the Northern Great Plains and the FRBC region, more research is required to understand landowner perceptions of land acquisition efforts by ENGOs, and to evaluate the successes of state agencies in including non-state actors in meaningful ways in environmental decision-making processes. This might draw upon and inform studies in political ecology and environmental justice, in that such research would interrogate which voices were present in land and resource access contests and included environmental decision-making.

In summary, this research makes several important contributions to the discipline of environmental geography, and it informs the methodological, theoretical, and empirical aspects of geographical research. In addition, the findings of this dissertation have the potential to inform both policy making and analysis in the domains of environmental management and border security. Despite the identified limitations of the analysis, this dissertation contributes to scholarly understanding of the Canada-US border in the Northern Great Plains region, its adjacent lands, and the people who live and work there. Specifically, it draws attention to the range of obstacles to, and opportunities for, collaborative management in the transboundary grasslands environment; and it suggests a range of avenues by which to strengthen the prospects for regional, transboundary environmental co-operation. And, it exemplifies how environmental geography and transboundary environmental management can be understood through research approaches that link the fields of environmental management, border studies, and political ecology.

6.7 REFERENCES

- Aitken, S.C. 2005. Textual analysis: reading culture and context. In Flowerdew, R. and D. Martin (eds.). 2005. *Methods in Human Geography: A Guide for Students Doing a Research Project*. 2nd ed. Harlow: Pearson Education Limited: 233-249.
- Alper, D.K. 2004. Emerging Collaborative Frameworks for Environmental Governance in the Georgia Basin-Puget Sound Ecosystem. *Journal of Borderlands Studies* 19(1): 79-84.
- Alper, D.K. 1996. The Idea of Cascadia: Emergent Transborder Regionalisms in the Pacific Northwest-Western Canada. *Journal of Borderlands Studies* 10(2): 1-22.
- Bakker, K. and D. Cameron. 2006. Governance, Business Models and Restructuring Water Supply Utilities: Recent Development in Ontario, Canada. *Water Policy* 7(5): 485-508.
- Barnes, T.J. and J.S. Duncan. 1992. Introduction: Writing Worlds. In Barnes, T.J. and J.S. Duncan (eds.). 1992. *Writing Worlds: Discourse, text and metaphor in the representation of landscape*. London and New York: Routledge: 1-17.
- Barrow, C.J. 1999. *Environmental Management: Principles and Practice*. London: Routledge.
- Bennett, J.W. and S.B. Kohl. 2001. *Settling the Canadian-American West, 1890-1915: Pioneer Adaptation and Community Building, An Anthropological History*. Lincoln and London: University of Nebraska Press.
- Berkes, F. 2007. Community-based conservation in a globalized world. *Proceedings of the National Academy of Sciences* 104(39): 15188-15193.
- Berkes, F. 2002. Cross-Scale Institutional Linkages: Perspectives from the Bottom Up. In *The*

- Drama of the Commons*, E. Ostrom, T. Dietz, N. Dolšak, P.C. Stern, S. Stonich and E.U. Weber, eds. Washington, DC: National Academy Press. pp.293-321.
- Blaikie, P.M. and H. Brookfield. 1987. *Land Degradation and Society*. London and New York: Methuen.
- Breitung, W. 2002. Transformation of a boundary regime: The Hong Kong and Mainland China Case. *Environment and Planning A* 34: 1749-1762.
- Brogden, M.J. and J.B. Greenberg. 2003. The Fight for the West: A Political Ecology of Land Use Conflicts in Arizona. *Human Organization* 62(3): 289-298.
- Brunet-Jailly, E. 2004. NAFTA, Economic Integration, and the Canadian-American Security Regime in the Post-September 11th Era: Multi-level Governance and Transparent Border? *Journal of Borderlands Studies* 19(1): 123-142.
- Bryant, R.L. and G.A. Wilson. 1998. Rethinking Environmental Management. *Progress in Human Geography* 22(3): 321-343.
- Carlsson, L. and F. Berkes. 2005. Co-management: concepts and methodological implications. *Journal of Environmental Management* 75(1): 65-76.
- Carter, N. 2007. *The Politics of the Environment: Ideas, Activism, Policy*. 2nd ed. New York: Cambridge University Press.
- Castree, N. 2004. Environmental Issues: Signals in the Noise? *Progress in Human Geography* 28(1): 79-90.
- Christie, S. 2009. *A Socioeconomic Profile of the Frenchman River-Bitter Creek Conservation*

- Area, Southwestern Saskatchewan and Northern Montana*. Unpublished Report for Parks Canada-Grasslands National Park, Crossing the Medicine Line Project. 185pp.
- Clapp, R.A. 2004. Wilderness ethics and political ecology: remapping the Great Bear Rainforest. *Political Geography* 23, 7: 839-862.
- Cold-Ravnkilde, S.M.; Singh, J. and R.G. Lee. 2004. Cascadia: The (Re)Construction of a Bi-National Space and Its Residents. *Journal of Borderlands Studies* 19(1): 59-77.
- Cortner, H.J. and M.A. Moote. 1999. *The Politics of Ecosystem Management*. Washington, D.C.: Island Press.
- Davidson, D.; Hammond, B. and K. Mintz. 2010. Atlas of the Land Entry Ports on the Canada-US Border. *Border Policy Brief* 5(1): 6pp. Bellingham, Washington: Border Policy Research Institute, Western Washington University. Available: www.western.edu/bpri. Accessed February 17, 2010.
- Doel, M.A. 2003. Analyzing Cultural Texts. In Clifford, N.J. and G. Valentine (eds.). 2003. *Key Methods in Geography*. London/Thousand Oaks/New Delhi: Sage Publications: 501-514.
- Edgington, D.W. 1995. Trade, investment and the new regionalism: Cascadia and its economic links with Japan. *Canadian Journal of Regional Science* 18(3): 333-356.
- Endter-Wada, J; Blahna, D.; Krannich, R. and M Brunson. 1998. A Framework for Understanding Social Science Contributions to Ecosystem Management. *Ecological Applications* 8(3): 891-904.
- Farson, S. 2006. Rethinking the North American Frontier After 9/11. *Journal of Borderlands*

- Studies* 21(1): 23-45.
- Feldman, T.D. and A.E.G. Jonas 2000. Sage Scrub Revolution? Property Rights, Political Fragmentation, and Conservation Planning in Southern California under the Federal Endangered Species Act. *Annals of the Association of American Geographers* 90(2): 256-292.
- Fitzsimmons, A.K. 1998. Why a Policy of Federal Management of Ecosystems is a Bad Idea. *Landscape and Urban Planning* 40(1-3): 195-202.
- Fitzsimmons, A.K. 1996. Sound Policy or Smoke and Mirrors: Does Ecosystem Management Make Sense? *Water Resources Bulletin* 32(2): 217-227.
- Folke, C.; Hahn, T.; Olsson, P. and J. Norberg. 2005. Adaptive Governance of Social-Ecological Systems. *Annual Review of Environment and Resources* 30: 441-473.
- Forrest, S.C.; H. Strand; W.H. Haskins; C. Freese; J. Proctor and E. Dinerstein. 2004. *Ocean of Grass: A Conservation Assessment for the Northern Great Plains*. Northern Plains Conservation Network and Northern Great Plains Ecoregion. Bozeman, MT: WWF-US. 191pp.
- Harley, J.B. 1992. Rereading the Maps of the Columbian Encounter. *Annals of the Association of American Geographers*. The Americas before and after 1492: Current Geographical Research 82(3): 522-536.
- Harley, J.B. 1989. Deconstructing the map. *Cartographica* 26: 1-20.
- Harrington, C., Curtis, A. and R. Black. 2008. Locating communities in natural resource management. *Journal of Environmental Policy and Planning* 10(2) 199–215.

- Harrison, S.; Massey, D.; Richards, K.; Magilligan, F., Thrift, N. and B. Bender. 2004. Thinking across the divide: perspectives on the conversations between physical and human geography. *Area* 36(4): 435-442.
- Hartig, J.H.; Zarull, M.A.; Heidtke, T.M. and H. Shah. 1998. Implementing Ecosystem-Based Management: Lessons from the Great Lakes. *Journal of Environmental Planning and Management* 41(1): 45-75.
- Hildebrand, L.P.; Pebbles, V. and D.A. Fraser. 2002. Cooperative Ecosystem Management Across the Canada-US Border: Approaches and Experiences of Transboundary Programs in the Gulf of Maine, Great Lakes, and Georgia Basin/Puget Sound. *Ocean and Coastal Management* 45(6-7): 421-457.
- Hurley, P.T. and P.A. Walker. 2004. Whose vision? Conspiracy theory and land-use planning in Nevada County, California. *Environment and Planning A* 36(9): 1529-1547.
- Jones, M.L. and W.W. Taylor. 1999. Challenges to the implementation of the ecosystem approach in the Great Lakes basin. *Aquatic Ecosystem Health and Management* 2(3):249-254.
- Karl, J.W. and J. Hoth (eds.). 2005. *North American Central grasslands priority conservation areas: technical report and documentation*. Montreal, Québec: Commission for Environmental Co-operation and The Nature Conservancy. 153pp.
- Keil, R. 2003. Urban Political Ecology. *Urban Geography* 24(8): 723-738.
- Kitchin, R. and M. Dodge. 2007. Rethinking maps. *Progress in Human Geography* 31(3): 331-344.

- LaDow, B. 2001. *The Medicine Line: Life and Death on a North American Borderland*. New York and London: Routledge.
- Levy, M.A. 1995. Is the Environment a National Security Issue? *International Security* 20(2): 35-62.
- Low, N. and B. Gleeson. 1998. *Justice, Society, and Nature: An Exploration of Political Ecology*. London: Routledge.
- Lunstrum, E. 2008. Mozambique, Neoliberal Land Reform, and the Limpopo National Park. *Geographical Review* 98(3): 339-355.
- Mansfield, B. 2005. Beyond rescaling: reintegrating the 'national' as a dimension of scalar relations. *Progress in Human Geography* 29(4): 458-473.
- McCarthy, J. 2005a. Guest editorial: First World political ecology: directions and challenges. *Environment and Planning A* 37(6): 953-958.
- McCarthy, J. 2005b. Devolution in the woods: community forestry as hybrid neoliberalism. *Environment and Planning A* 37(6): 995-1014.
- McCarthy, J. and S. Prudham. 2004. Neoliberal nature and the nature of neoliberalism. *Geoforum* 35(3):275-283.
- McCarthy, J. 2002. First World political ecology: lessons from the Wise Use movement. *Environment and Planning A* 34, 7: 1281-1302.
- McKinsey, L.S. and V. Konrad. 1989. *Borderlands Reflections: The United States and Canada*. Orono, ME: Borderlands.
- McManus, S. 2005. *The Line Which Separates: Race, Gender, and the Making of the Alberta-*

- Montana Borderlands*. Edmonton: University of Alberta Press.
- Moore, A. 2008. Rethinking scale as a geographical category: from analysis to practice. *Progress in Human Geography* 32(2):203-225.
- Morris, P.S. 1999. Regional Ideas and the Montana-Alberta Borderlands. *The Geographical Review* 89(4): 469-490.
- Neumann, R.P. 2005. *Making Political Ecology*. London: Hodder Arnold.
- Newman, D. 2006. The Lines that Continue to Separate Us: Borders in our 'Borderless' World. *Progress in Human Geography* 30(2): 143-161.
- Newman, D. 2003. On Borders and Power: A Theoretical Framework. *Journal of Borderlands Studies* 18(1): 13-26.
- Newman, D. and A. Paasi. 1998. Fences and neighbours in the postmodern world: boundary narratives in political geography. *Progress in Human Geography* 22(2): 186-207.
- Nicol, H. 2006. The Canada-US Border After September 11th: The Politics of Risk Constructed. *Journal of Borderlands Studies* 21(1): 47-68.
- Norman, E.S. and K. Bakker. 2009. Transgressing Scales: Water Governance Across the Canada-US Borderland. *Annals of the Association of American Geographers* 99(1): 99-117.
- Norman, E. and K. Bakker. 2004. *Transboundary Groundwater Governance: An Annotated Bibliography*. Department of Geography, University of British Columbia. Available: www.geog.ubc.ca/~bakker/transbiblio.pdf.

- Paulson, S.; Gezon, L.L. and M. Watts. 2003. Locating the Political in Political Ecology: An Introduction. *Human Organization* 62(3): 205-217.
- Pedynowski, D. 2003. Prospects for Ecosystem Management in the Crown of the Continent Ecosystem, Canada-United States: Survey and Recommendations. *Conservation Biology* 17(5): 1261-1269.
- Peet, R. and M. Watts (eds.). 2004. *Liberation Ecologies: Environment, Development, Social Movements*. 2nd ed. London: Routledge.
- Pickles, J. 2004. *A History of Spaces: Cartographic reason, mapping and the geo-coded world*. London and New York: Routledge.
- Pickles, J. 1992. Texts, Hermeneutics and Propaganda Maps. In Barnes, T.J. and J.S. Duncan (eds.). 1992. *Writing Worlds: Discourse, text and metaphor in the representation of landscape*. London and New York: Routledge: 193-230.
- Poirier, T.; Bircham, D.; Jones-Hole, J.; Slade, A. and S.A. Vogelaar. (eds). 2005. *A Voice of Her Own*. Calgary: University of Calgary Press.
- Prudham, S. 2004. Poisoning the well: neoliberalism and the contamination of municipal water in Walkerton, Ontario. *Geoforum* 35(3): 343-359.
- Reed, M.G. and S. Bruyneel. 2010. Rescaling Environmental Governance, Rethinking the State: a Three-Dimensional Review. *Progress in Human Geography*. *Progress in Human Geography Online First*: January 26, 2010, DOI: 10.1177/0309132509354836.
- Reed, M.G. 2007. Uneven environmental management: a Canadian comparative political ecology. *Environment and Planning A* 39: 320-338.

- Reed, M.G. and B. Mitchell. 2003. Gendering Environmental Geography. *The Canadian Geographer* 47(3):318-337.
- Rhodes, R.A.W. 1997. *Understanding Governance: Policy Networks, Governance, Reflexivity and Accountability*. Buckingham, UK and Philadelphia: Open University Press.
- Richmond, C.; Elliott, S.J.; Matthews, R. and B. Elliott. 2005. The political ecology of health: perceptions of environment, economy, health and well-being among 'Namgis First Nation. *Health and Place* 11(4): 349-365.
- Riley, J.L; Green, S.E. and K.E. Brodribb. 2007. *A Conservation Blueprint Canada's Prairies and Parklands*. Toronto: Nature Conservancy of Canada. 226pp. + DVD-ROM.
- Robbins, P. 2006. The politics of barstool biology: Environmental knowledge and power in greater Northern Yellowstone. *Geoforum* 37 (2): 185-199.
- Robbins, P. 2004. *Political Ecology: A Critical Introduction*. Malden, Massachusetts: Blackwell Publishing.
- Robbins, P. 2002. Obstacles to a First World Political Ecology: Looking Near Without Looking Up. *Environment and Planning A* 34(8): 1509-1513.
- Sadler, B. 1993. Shared Resources, Common Future: Sustainable Management of Canada-United States Border Waters. *Natural Resources Journal* 33(2): 375-396.
- Schroeder, R.A. , St. Martin, K. and K.E. Albert. 2006. Political Ecology in North America: Discovering the Third World within? *Geoforum* 37 (2): 163-168.
- Schroeder, R.A. 2005. Debating the place of political ecology in the First World. *Environment and Planning A* 37 (6): 1045-1048.

- Schwartz, A.M. 2000. The Canada-US Relationship at the Turn of the Century. *The American Review of Canadian Studies* 30(2): 207-226.
- Schwartz, M.A. 1997. Cross-Border Ties Among Protest Movements: The Great Plains Connection. *Great Plains Quarterly* 17(2): 119-130.
- Sheridan, T.E. 2007. Embattled Ranchers, Endangered Species, and Urban Sprawl: The Political Ecology of the New American West. *Annual Review of Anthropology* 36 : 121-138.
- Sheridan, T.E. 2001. Cows, Condos, and the Contested Commons: The Political Ecology of Ranching on the Arizona-Sonora Borderlands. *Human Organization* 60(2): 141-152.
- Singh, J. and P. Ganster. 2003. Transboundary Environmental Co-operation: A Conversation on Issues in Research and Methodologies. *Journal of Borderlands Studies* 18(1): 51-60.
- Singleton, S. 2002. Collaborative Environmental Planning in the American West: The Good, the Bad and the Ugly. *Environmental Politics* 11(3): 54-75.
- Slocombe, D.S. 1998. Lessons from experience with ecosystem-based management. *Landscape and Urban Planning* 40(1-3): 31-39.
- Smith Fargey, K. (ed.). 2004. *Shared Prairie-Shared Vision: The Northern Mixed Grass Transboundary Initiative*. Conservation Site Planning Workshop Proceedings and Digital Atlas. Regina, SK: Canadian Wildlife Service, Environment Canada. CD-ROM.
- Smith, P.J. 2004. Transborder Cascadia: Opportunities and Obstacles. *Journal of Borderlands Studies* 19(1): 99-121.

- Sparke, M. 2005. *In the Space of Theory: Postfoundational Geographies of the Nation-State*. Borderlines Series, Volume 26. Minneapolis: University of Minnesota Press.
- Stanley, A. 2006. Risk, Scale and Exclusion in Canadian Nuclear Fuel Waste Management. *ACME: An International E-Journal for Critical Geographies* 4(2): 194-227.
- Stanley, T.R. (Jr.). 1995. Ecosystem Management and the Arrogance of Humanism. *Conservation Biology* 9(2): 255-262.
- Stefanick, L. 2009. Transboundary Conservation: Security, Civil Society and Cross-Border Collaboration. *Journal of Borderlands Studies* 24(2): 15-37.
- Stegner, W.E. 1962. *Wolf Willow: A History, A Story, and a Memory of the Last Plains Frontier*. New York: Viking Press.
- Stonich, S.C. 1998. Political Ecology of Tourism. *Annals of Tourism Research* 25(1): 25-54.
- Stott, P. and S. Sullivan (Eds.). 2000. *Political ecology: Science, myth and power*. London: Arnold.
- The Nature Conservancy (TNC), Northern Great Plains Steppe Ecoregional Planning Team. 1999. *Ecoregional Planning in the Northern Great Plains Steppe*. The Nature Conservancy.
- Vannijnatten, D. 2004. Canadian-American Environmental Relations: Interoperability and Politics. *The American Review of Canadian Studies* 34(4): 649-664.
- Vayda, A.P. and B.B. Walters. 1999. Against political ecology. *Human Ecology: An Interdisciplinary Journal* 27(1): 167-179.
- Wainwright, J. 2005. The geographies of political ecology: after Edward Said. *Environment*

- and Planning A* 37(6): 1033-1043.
- Walker, P.A. 2006. Political ecology: where is the policy? *Progress in Human Geography* 30(3): 382-395.
- Walker, P.A. 2005. Political ecology: where is the ecology? *Progress in Human Geography* 29(1): 73-82.
- Walker, P.A. and Hurley, P.T. 2004. Collaboration Derailed: The Politics of “Community-Based” Resource Management in Nevada County. *Society and Natural Resources* 17(8): 735-751.
- Walker, P.A. 2003. Reconsidering ‘regional’ political ecologies: toward a political ecology for the rural American West. *Progress in Human Geography* 27(1): 7-24.
- Walker, P.A. and L. Fortmann. 2003. Whose landscape? A political ecology of the ‘exurban’ Sierra. *Cultural Geographies* 10: 469-491.
- White, R. 1991. *“It’s Your Misfortune and None of My Own”: A New History of the American West*. Norman and London: University of Oklahoma Press.
- Widdis, R.W. 2006. *Voices from Next Year Country: An Oral History of Rural Saskatchewan*. Regina: Canadian Plains Research Centre.
- Widdis, R.W. 1997. Borderland and Interaction in the International Region of the Great Plains: An Historic-Geographic Perspective. *Great Plains Research* 7(1): 103-137.
- Wilson, R.K. 1999. ‘Placing Nature’: The Politics of Collaboration and Representation in the Struggle for La Sierra in San Luis, Colorado. *Ecumene* 6(1): 1-28.
- 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.

Young, O.R. 2002. *The Institutional Dimensions of Environmental Change: Fit, Interplay, and Scale*. Cambridge, MA and London, UK: The MIT Press.

**APPENDIX A:
INTERVIEW SCHEDULES**

Interview Guide – Public Agency/ENGO

Part 1: General Questions

1. Where do you live?/How would you classify the area in which you live? (city, town, rural?)
2. How long have you lived in your community?
3. For how many generations has your family lived in the area?
4. What is the highest level of education you have completed?
5. *What year were you born?*
6. *Do you have children? (Not relevant if “city”)*
 - a. *Are your children grown?*
 - b. *If they are, did they stay in the community?*
 - c. *Why or why not?*
7. What roles do you have in your community (e.g. public agency employee *and* rancher/farmer, environmental organization member, oil and gas industry representative, First Nations community member)?
8. *What is your official job title?*
9. Could you explain your general duties (daily, annual, special projects)?
10. Could you describe the constituency you represent?
11. *Do you own or rent (your) land? (Not relevant if “city”)*
 - a. *How many acres?*
12. *Do you conduct agriculture on your land?*
 - a. *Describe the types of agricultural activities conducted on your land and your agricultural duties.*
 - b. *About how much of your income comes from this agriculture?*
13. Do you belong to any organizations/associations related to agriculture?
 - a. If yes, which ones?
 - b. How long have you been involved (with each)?
 - c. What is/are your role(s) within this/these organizations/ associations?
14. *Do you use public lands (e.g. community pastures) in your personal livelihood? (Not relevant if “city”)*
 - a. *How?*
15. Does your organization use public or private lands in its activities?
 - a. How?

Part 2: Conservation

1. How do you define the term “conservation”? (*get their definition*).

For this project, I define “conservation” as environmental management that seeks to maintain a healthy environment in a way that meets our needs and the needs of future generations. I will ask you to consider this definition when answering these questions, so that everyone is using the same definition.

2. Tell me why grasslands are important in this part of North America.
 - a. Could you comment on your organization/institution’s general view(s) regarding the conservation of grassland ecosystems in this region?
3. Which animal species are you aware of that live in both countries and cross the border?/*What are the main species that live in both countries and cross the border that you are aware of/work with?*
 - a. How do you know about these animals?
4. What do you personally feel are the biggest threats to the region’s grasslands environment?
 - a. Is this congruent with any threats recognized by your organization?
5. *Are you familiar with Canada’s Grasslands National Park? (Not necessary if they are obviously aware of GNP, e.g. work for Parks Canada or a major ENGO; skip to how they feel about the Park)*
 - a. How do you feel about Grasslands National Park?
 - b. How has the Park influenced how you feel about grasslands conservation?
6. Does your organization use or promote any conservation or best management practices for land use?
 - a. If yes, could you describe these?
 - b. If no, why not?
7. Describe your organization’s/institution’s general rapport with:
 - a. Other government agencies?
 - b. (Environmental) non-governmental associations?
 - c. Local farmers/ranchers and associated agricultural producers’ associations?
 - d. First Nations communities?
 - e. Oil and gas companies?
8. Have you/has your organization worked with any of these groups on grassland management or conservation initiatives?
 - a. If yes:
 - i. Which ones?
 - a. How?
 - b. If no, why not?

Part 3: Legislation

1. What environmental laws and policies influence your decisions and actions where you live and work?
2. Describe the conservation-oriented organizations that are active in the area in which you live.

- a. Do you take part in any of these organizations or their activities?
3. What do you think is the appropriate role for government in addressing the biophysical environment in this region?
4. What do you think is the appropriate role for government in addressing the social and cultural characteristics of agricultural livelihoods in this region?
5. What do you think is the appropriate role for government in addressing the economic circumstances of agricultural livelihoods in this region?
6. What other kinds of initiatives, aside from increased regulation, might enhance grassland conservation in the region?
7. What do you believe are the most important transboundary (affecting Canada and the USA) environmental issues in your area that need to be addressed?
8. How is/are this/these issue(s) currently being addressed?

Part 4: Ecosystem Management

1. Does the term “ecosystem management” mean anything to you?
 - a. How do you define “ecosystem management”? (get their definition).
 - b. For this project, I define “ecosystem management” as management that considers the boundaries of the regional grasslands area in management decisions, rather than considering political or administrative boundaries; it also considers the grassland system to be composed of ecological, social and economic components. I will ask you to consider this definition when answering these questions, so that everyone is using the same definition.
2. Do you see this principle being used in your work?
 - a. Would you like to see it used more?
3. What do you think are the obstacles to managing grasslands as one ecosystem, and not as “Canadian” or “American” parcels of land?

Part 5: Transboundary Attitudes and Relations

1. Describe the relationship between Canada and the U.S.A. in this region.
2. Describe the changes you have seen in the Canada-US border and relationship over time. Prompt: Changes after The Canada-US Free Trade Agreement (1988)/NAFTA (1994)? 9/11 (2001)? The BSE crisis? (2003-2005/present)
 - a. Do you think that the relationship is more open or closed now than it was in the past?
3. *If you have family and/or friends on the other side of the border, how do you interact (methods, frequency) with them? (Not relevant from an organizational perspective)*
4. Can you describe any issues that your organization deals with that span the international (Canada-U.S.) border?
5. Do you work with similar organizations in Canada (*for American participants*)/in the USA (*for Canadian participants*)?
6. Is your organization currently involved in any transboundary initiatives?

- a. If yes, describe these. Are there key areas around which these initiatives coalesce (e.g. landscape conservation, environmental protection, energy development, etc.)?
- b. Describe any other business you conduct with or within Canada (*for American participants*)/with or within the USA (*for Canadian participants*)?
 - i. What type of business do you conduct?
 - ii. About how often do you conduct business with or within Canada (*for American participants*)/with or within the USA (*for Canadian participants*)?
 - iii. About how much of your business is conducted with or within the other country?
 - iv. If you don't conduct business with or within the other country, why don't you do so? Is the lack of transboundary work due to a lack of relevant transboundary issues, or for other reasons?
7. Do you see people or groups cooperating on environmental or conservation issues in your region? (e.g. Residents and government/environmental organizations? Canadian and United States governments? State and provincial governments? Between local communities?)
8. Do you see people or groups disagreeing on environmental or conservation issues in your region? (e.g. Residents and government/environmental organizations? Canadian and United States governments? State and provincial governments? Between local communities?)
9. Do you see the need for increased grasslands conservation efforts in your area?
 - a. If not, why not?
 - b. If so, of what kind?
 - c. Would you like to see more cooperation (in the form of laws, policies, programs, etc.) between Canada and the USA in this regard?

Concluding Remarks

1. Is there anything else you would like to add about any of the themes we have addressed, or any other issues you are concerned about?
2. Can you think of anyone else I should talk to?

PROVIDE MAILING ADDRESS

Interview Guide – Public Agency/Energy

Part 1: General Questions

16. Where do you live?/How would you classify the area in which you live? (city, town, rural?)
17. How long have you lived in your community?
18. For how many generations has your family lived in the area?
19. What is the highest level of education you have completed?
20. *What year were you born?*
21. *Do you have children? (Not relevant if “city”)*
 - a. *Are your children grown?*
 - b. *If they are, did they stay in the community?*
 - c. *Why or why not?*
22. What roles do you have in your community (e.g. public agency employee *and* rancher/farmer, environmental organization member, oil and gas industry representative, First Nations community member)?
23. *What is your official job title?*
24. Could you explain your general duties (daily, annual, special projects)?
25. Can you describe the nature and extent of energy (oil, gas, wind power) developments in this region?
26. Can you describe the energy development projects with which you are currently involved in this region?
27. Can you describe the energy development projects with which you have been involved with in the past in this region?
28. Can you describe the extent of energy developments that are proposed/projected for this region?
29. Could you describe the constituency you represent?
30. *Do you own or rent (your) land? (Not relevant if “city”)*
 - a. *How many acres?*
31. *Do you conduct agriculture on your land?*
 - a. *Describe the types of agricultural activities conducted on your land and your agricultural duties.*
 - b. *About how much of your income comes from this agriculture?*
32. Do you belong to any organizations/associations related to agriculture?
 - a. If yes, which ones?
 - b. How long have you been involved (with each)?
 - c. What is/are your role(s) within this/these organizations/ associations?
33. *Do you use public lands (e.g. community pastures) in your personal livelihood? (Not relevant if “city”)*
 - a. *How?*
34. Does your organization use public or private lands in its activities?

- a. How?

Part 2: Conservation

9. How do you define the term “conservation”? (*get their definition*).
For this project, I define “conservation” as environmental management that seeks to maintain a healthy environment in a way that meets our needs and the needs of future generations. I will ask you to consider this definition when answering these questions, so that everyone is using the same definition.
10. Tell me why grasslands are important in this part of North America.
 - a. Could you comment on your organization/institution’s general view(s) regarding the conservation of grassland ecosystems in this region?
11. Which animal species are you aware of that live in both countries and cross the border?/*What are the main species that live in both countries and cross the border that you are aware of/work with?*
 - a. How do you know about these animals?
12. What do you personally feel are the biggest threats to the region’s grasslands environment?
 - a. Is this congruent with any threats recognized by your organization?
13. *Are you familiar with Canada’s Grasslands National Park? (Not necessary if they are obviously aware of GNP, e.g. work for Parks Canada or a major ENGO; skip to how they feel about the Park)*
 - a. How do you feel about Grasslands National Park?
 - b. How has the Park influenced how you feel about grasslands conservation?
14. Does your organization use or promote any conservation or best management practices for land use?
 - a. If yes, could you describe these?
 - b. If no, why not?
15. Describe your organization’s/institution’s general rapport with:
 - a. Other government agencies?
 - b. (Environmental) non-governmental associations?
 - c. Local farmers/ranchers and associated agricultural producers’ associations?
 - d. First Nations communities?
 - e. Oil and gas companies?
16. Have you/has your organization worked with any of these groups on grassland management or conservation initiatives?
 - a. If yes:
 - j. Which ones?
 - a. How?
 - b. If no, why not?

Part 3: Legislation

1. What environmental laws and policies influence your decisions and actions where you live and work?
9. Describe the conservation-oriented organizations that are active in the area in which you live.
 - a. Do you take part in any of these organizations or their activities?
10. What do you think is the appropriate role for government in addressing the biophysical environment in this region?
11. What do you think is the appropriate role for government in addressing the social and cultural characteristics of agricultural livelihoods in this region?
12. What do you think is the appropriate role for government in addressing the economic circumstances of agricultural livelihoods in this region?
13. What other kinds of initiatives, aside from increased regulation, might enhance grassland conservation in the region?
14. What do you believe are the most important transboundary (affecting Canada and the USA) environmental issues in your area that need to be addressed?
15. How is/are this/these issue(s) currently being addressed?

Part 4: Ecosystem Management

4. Does the term “ecosystem management” mean anything to you?
 - a. How do you define “ecosystem management”? (get their definition).
 - b. For this project, I define “ecosystem management” as management that considers the boundaries of the regional grasslands area in management decisions, rather than considering political or administrative boundaries; it also considers the grassland system to be composed of ecological, social and economic components. I will ask you to consider this definition when answering these questions, so that everyone is using the same definition.
5. Do you see this principle being used in your work?
 - a. Would you like to see it used more?
6. What do you think are the obstacles to managing grasslands as one ecosystem, and not as “Canadian” or “American” parcels of land?
7. Do you think grassland or ecosystem-based conservation could benefit you/the region economically? How?

Part 5: Transboundary Attitudes and Relations

10. Describe the relationship between Canada and the U.S.A. in this region.
11. Describe the changes you have seen in the Canada-US border and relationship over time. Prompt: Changes after The Canada-US Free Trade Agreement (1988)/NAFTA (1994)? 9/11 (2001)? The BSE crisis? (2003-2005/present)
 - a. Do you think that the relationship is more open or closed now than it was in the past?

12. *If you have family and/or friends on the other side of the border, how do you interact (methods, frequency) with them? (Not relevant from an organizational perspective)*
13. Do the natural resources with which you work span the international (Canada-US) border?
14. Do your work activities have transboundary impacts that you know of?
 - a. If yes, what are they?
15. Are you currently involved in any transboundary exploration/development/ extraction activities?
 - a. If yes, what are they?
 - b. Approximately what proportion of your exploration/development/ extraction activities deal with transboundary issues?
 - c. If you are not involved in any transboundary initiatives, why are you not?
16. Are you currently involved in any transboundary conservation initiatives?
 - a. If yes, what are they?
 - b. Approximately what proportion of your conservation-related activities deal with transboundary issues?
 - c. If you are not involved in any transboundary conservation initiatives, why are you not?
17. Do you work with similar organizations in Canada (*for American participants*)/in the USA (*for Canadian participants*)?
18. Is your organization currently involved in any transboundary initiatives?
 - a. If yes, describe these. Are there key areas around which these initiatives coalesce (e.g. landscape conservation, environmental protection, energy development, etc.)?
 - b. Describe any other business you conduct with or within Canada (*for American participants*)/with or within the USA (*for Canadian participants*)?
 - i. What type of business do you conduct?
 - ii. About how often do you conduct business with or within Canada (*for American participants*)/with or within the USA (*for Canadian participants*)?
 - iii. About how much of your business is conducted with or within the other country?
 - iv. If you don't conduct business with or within the other country, why don't you do so? Is the lack of transboundary work due to a lack of relevant transboundary issues, or for other reasons?
19. Do you see people or groups cooperating on environmental or conservation issues in your region? (e.g. Residents and government/environmental organizations? Canadian and United States governments? State and provincial governments? Between local communities?)
20. Do you see people or groups disagreeing on environmental or conservation issues in your region? (e.g. Residents and government/environmental organizations? Canadian and

United States governments? State and provincial governments? Between local communities?)

21. Do you see the need for increased grasslands conservation efforts in your area?
 - a. If not, why not?
 - b. If so, of what kind?
 - c. Would you like to see more cooperation (in the form of laws, policies, programs, etc.) between Canada and the USA in this regard?

Concluding Remarks

3. Is there anything else you would like to add about any of the themes we have addressed, or any other issues you are concerned about?
4. Can you think of anyone else I should talk to?

PROVIDE MAILING ADDRESS

Interview Guide – Farmers and Ranchers

Part 1: General Questions

1. Where do you live? (do you classify it as city, town, rural?)
2. How long have you lived in your community?
3. For how many generations has your family lived in the area?
4. What is the highest level of education you have completed?
5. *What year were you born?*
6. Do you have children?
 - a. Are your children grown?
 - b. If they are, did they stay in the community?
 - c. Why or why not?
7. What roles do you have in your community (e.g. public agency employee *and* rancher/farmer, environmental organization member, oil and gas industry representative, First Nations community member)?
8. Do you own or rent (your) land?
 - a. How many acres do you own?
 - b. How many acres do you rent?
9. Describe your farm/ranch.
10. Prompt: types of activities, annual/seasonal/monthly/daily duties
11. Do you have a paid job away from your farm/ranch?
12. About how much of your income comes from your farm/ranch?
13. Do you belong to any organizations related to agriculture?
 - a. If yes, which one(s)?

- b. How long have you been involved (with each)?
 - c. What is/are your role(s) within this/these organization(s)?
14. Do you use public lands(e.g. community pastures) in your personal livelihood?
- a. If yes, how?

Part 2: Conservation

1. How do you define the term “conservation”? (*get their definition*).
 - a. For this project, I define “conservation” as environmental management that seeks to maintain a healthy environment in a way that meets our needs and the needs of future generations. I will ask you to consider this definition when answering these questions, so that everyone is using the same definition.
2. Tell me why grasslands are important in this part of North America.
 - a. Could you comment on your general view(s) regarding the conservation of grassland ecosystems in this region?
3. Which animal species are you aware of that live in both countries and cross the border?
 - a. How do you know about these animals?
4. What do you personally feel are the biggest threats to the region’s grasslands environment?
5. Are you familiar with Canada’s Grasslands National Park?
 - a. How do you feel about Grasslands National Park?
 - b. How has the Park influenced how you feel about grasslands conservation?
6. Do you use any conservation or best management practices for land use?
 - a. If yes, could you describe these?
 - b. If no, why not?
7. Describe your general rapport with:
 - a. Government agencies?
 - a. (Environmental) non-governmental associations?
 - b. Other farmers/ranchers and associated agricultural producers’ associations?
 - c. First Nations communities?
 - d. Oil and gas companies?
8. Have you ever worked with any of these groups on grassland management or conservation initiatives?
 - a. If yes:
 - i. Which ones?
 - ii. How?
 - b. If no, why not?

Part 3: Legislation

1. What environmental laws and policies influence your decisions and actions where you live and work?
2. Could you describe the conservation-oriented organizations that are active in the area in which you live?
 - a. Do you take part in any of these organizations or their activities?
3. What do you think is the appropriate role for government in addressing the biophysical environment in this region?
4. What do you think is the appropriate role for government in addressing the social and cultural characteristics of your livelihood?
5. What do you think is the appropriate role for government in addressing the economic circumstances of your livelihood?
6. What other kinds of initiatives, aside from increased regulation, might enhance grassland conservation in the region?
7. What do you believe are the most important transboundary (affecting Canada and the USA) environmental issues in your area that need to be addressed?
 - a. How do these environmental issues affect your livelihood?
8. How is/are this/these issue(s) currently being addressed?

Part 4: Ecosystem Management

1. Does the term “ecosystem management” mean anything to you?
 - a. How do you define “ecosystem management”? (*get their definition*).
 - b. For this project, I define “ecosystem management” as management that considers the boundaries of the regional grasslands area in management decisions, rather than considering political or administrative boundaries; it also considers the grassland system to be composed of ecological, social and economic components. I will ask you to consider this definition when answering these questions, so that everyone is using the same definition.
2. Do you see this principle being used in your work?
 - a. Would you like to see it used more?
3. What do you think are the obstacles to managing grasslands as one ecosystem, and not as “Canadian” or “American” parcels of land?
4. Do you think grassland conservation could benefit you economically? How might you be able to benefit economically from grassland or ecosystem conservation on your land?

Part 5: Transboundary Attitudes and Relations

1. Describe the relationship between Canada and the U.S.A. in this region.
2. Describe the changes you have seen in the Canada-US border and relationship over time.

Prompt: Changes after The Canada-US Free Trade Agreement (1988)/NAFTA (1994)? 9/11 (2001)? The BSE crisis? (2003-2005/present)

- a. Do you think that the relationship is more open or closed now than it was in the past?
3. If you have family and/or personal friends on the other side of the border, how do you interact (methods, frequency) with them?
4. Do your agricultural/work activities have transboundary impacts that you know of?
 - a. If yes, what are they?
9. Describe your level of interaction with other agricultural producers or agricultural organizations in Canada (*for American participants*)/in the U.S.A. (*for Canadian participants*)?
10. Describe any business you conduct with or within Canada (*for American participants*)/with or within the U.S.A. (*for Canadian participants*)?
 - a. If you do conduct business in the other country:
 - i. What type of business do you conduct?
 - ii. About how often do you conduct business with or within Canada (*for American participants*)/with or within the USA (*for Canadian participants*)?
 - iii. About how much of your business is conducted with or within the other country?
 - b. If you don't conduct business with or within the other country:
 - i. Why don't you do so? Is the lack of transboundary work due to a lack of relevant transboundary issues, or for other reasons?
9. Do you see people or groups cooperating on environmental or conservation issues in your region? (e.g. Residents and government/environmental organizations? Canadian and United States governments? State and provincial governments? local communities?)
10. Do you see people or groups disagreeing on environmental or conservation issues in your region? (e.g. Residents and government/environmental organizations? Canadian and United States governments? State and provincial governments? Between local communities?)
11. Do you see the need for increased grasslands conservation efforts/measures in your area?
 - a. If not, why not?
 - b. If so, of what kind?
 - c. Would you like to see more cooperation (in the form of laws, policies, programs, etc.) between Canada and the U.S.A. in this regard?
12. Do you think increased cooperation with agencies or other agricultural producers in (the other country) could benefit you economically? How?

Concluding Questions

1. Is there anything else you would like to add about any of the themes we have addressed, or any other issues you are concerned about that you think I have missed?
2. Can you think of anyone else I should talk to?

PROVIDE MAILING ADDRESS