

**The Cosmetics of Conservation:
The Nature Conservancy of Canada Goes Ranching
in Southwestern Alberta**

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Abstract:

In 1997, the Nature Conservancy of Canada (NCC) came to the southwestern corner of Alberta as a complete stranger. Within a decade, however, the organization was the largest landlord, having bought most of the landscape on the eastern side of the Waterton Lakes National Park. Thus was born the largest private conservation initiative in Canada at the time. Key to its success was an alliance with ranchers who were contracted as tenants in return for selling their ranch. With science on its side and ranchers having refashioned themselves as conservationists, the NCC declared that a unique landscape with a wealth of iconic species had been protected.

This thesis demonstrates that aside from bringing together unlikely protagonists, the alliance did not remotely generate in practice what it advertises. To begin with, there is no consensus amongst experts that conservation has any prospect where a livelihood dependent on livestock is expected to coexist peacefully with large predators like grizzly bears and wolves. I explain how scientific findings may vary in concert with the dispositions and affinities of the science-makers themselves, and that land-users as well as conservationists select them strategically to advance their respective agendas.

I make a case that the cosmetics of conservation gloss over contradictions on several fronts. Disguise is a default manoeuvre when the inflow of money depends on the public perception that donations produce prompt results. The NCC therefore promotes the idea that the accumulation of property rights is *ipso facto* a guarantee of conservation. This may be the case where human activities are curtailed, but not where interspecies coexistence is mandated. Yet innovative practices have emerged despite the apparent stalemate, and a

multi-sited ethnography reveals the dynamics of place that stifle innovation in some places and foster it in others. Discretion perhaps being the better part of valor in conservation, the NCC is locally a silent partner at the moment, but it has positioned itself as a future land-use broker. As I elucidate, the predicaments of this 'working landscape' are so entrenched that it may end up gentrified in the name of conservation.

Résumé :

Lors de son arrivée dans le coin Sud-Ouest de l'Alberta en 1997, Conservation de la nature Canada (CNC) était un parfait étranger. Cependant, au cours d'une décennie, cet organisme est devenu le plus important propriétaire local grâce à l'achat de la majorité des terres adjacentes à l'est du Parc national des Lacs-Waterton. Ainsi est née la plus grande initiative de conservation privée au Canada existant à l'époque. La clé de son succès fut une alliance avec des éleveurs qui auront accepté de vendre leur ranch en échange de longs contrats de location par la suite. La science étant de son côté et les éleveurs s'étant nouvellement voués à la conservation, CNC proclame la protection d'un territoire unique avec une abondance d'espèces emblématiques.

Cette thèse démontre que, à part le rassemblement de protagonistes improbables, les résultats concrets de cette alliance ne tiennent pas du tout les promesses de la publicité. D'abord, il n'existe aucun consensus parmi les experts sur la viabilité de la conservation lorsqu'un mode de vie axé sur l'élevage des animaux doit coexister paisiblement avec de grands prédateurs comme les grizzlis et les loups. Je précise comment les dispositions et les affinités des chercheurs compromettent les résultats scientifiques et explique qu'à la

fois les éleveurs et les personnes qui travaillent pour la conservation effectuent un choix stratégique parmi ces résultats afin de promouvoir leurs intérêts respectifs.

Je soutiens que la façade de la conservation dissimule des contradictions de plusieurs manières. Le déguisement s'avère la stratégie par défaut lorsque l'entrée d'argent dépend de la rapidité avec laquelle les dons produisent des résultats selon la perception du public. Par conséquent, CNC promeut l'idée qu'accumuler les droits de propriété constitue ipso facto une garantie de conservation. Il est possible que cela soit le cas lorsqu'il est possible de restreindre les activités humaines sans créer de controverse, mais pas quand ces droits imposent la coexistence entre bétail et grands prédateurs. Néanmoins, des pratiques novatrices émergent malgré cette impasse; la présente ethnographie multi-site révèle la dynamique des lieux qui étouffe l'innovation dans certains lieux et qui la favorise dans d'autres. Parce que dans le milieu très politicisé de la conservation, la prudence semble être mère de sûreté, CNC s'est soumis à un rôle d'associé local tacite, mais il garde néanmoins un pouvoir qu'il pourra réactiver au moment propice. Je maintiens que les circonstances fâcheuses de ce « territoire en exploitation » (« *working landscape* ») sont si bien enracinées que la gentrification pourrait être le résultat éventuel de cette initiative de conservation.

Acknowledgements

It was an entirely different challenge when I chose to examine ranching in the First World for my doctoral studies instead of returning to Africa to pursue my Masters research with pastoralists. Ranching had been my livelihood for nearly two decades, so I was already very familiar with the milieu. And I had selected for my fieldwork an area which had been my home and workplace for over one decade during the 1980s. Then, only to be expected, from several quarters came questions about my allegiances. My predicament was apparently worse than that of 'going native'. As an insider taking up the role of observer, my ability to transcend my affinities for a familiar livelihood was somewhat questionable academically. Conversely, as someone who was already privy to insider information yet had returned with an outsider's agenda, my purpose was suspect from the perspective of those who were the subject of my inquiries.

To put this to rest, I suggested that I was committed to be most explicit and to leave no stone unturned to answer questions that were already on the minds of people involved in the affairs of the present landscape. I deliberately delved into contentious issues in dialectical fashion, aiming to reveal a full spectrum of positions instead of highlighting some unduly at the expenses of others.

I contend I was not mired in this kind of obvious 'emic' or 'etic' entrenchments. Instead, I would rather disclose that my allegiances derive from a lasting engagement deeper than a social affiliation of the sort. Hence, my first acknowledgement I direct towards the landscape constituency I have lived with during a significant part of my life, its

nonhuman membership so varied that I can only attend to a small part of it in this thesis. It has been my intention to unsettle conventions pregnant with much prejudice.

Suffice it for now to state that this endeavor has demanded constant self-examination from the time spent gathering data to the latter part of my stay when I drafted the first chapters – several versions of which did not survive. Therefore, while I take full responsibility for the content of my thesis, I credit my committee for addressing several issues that required some severe culling, helping me realize when I belabored some arguments and warning me when I addressed too narrow an audience. My supervisor, professor John Galaty, has assisted me all along to improve my scholarly approach, and Colin Scott was invaluable for helping me narrow down my avenues of inquiry when at times my project swelled at such rate it threatened to burst asunder. And with each version of my writings, members of my committee were very generous with copy editing and making useful requests for clarifications. Given the long time it took me to bring this to term, I am most grateful for their patience.

The task of answering questions asked by people in the field about my perspectives and allegiances, I was able to attend in person since I did much of my writing on site. The transition between data gathering and the actual ethnography felt seamless. I had many opportunities to test my ideas during discussions in informal settings, which ranged from discoveries of mutual understandings to tempestuous disagreements. Regardless, all discussions were wellsprings of insight throughout the process of putting pen to formal paper, and for that I owe many thanks to a lot of people. To begin with, those who extended generous hospitality at their respective places, John, Gordon, and Charlie Russell,

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Acronyms:

ACA:	Alberta Conservation Association (ACA).
ASRD	(Ministry of) Alberta Sustainable Resource Development
AUM	Animal unit / month
BC	British Columbia
BINGOs	Big NGOs; Big Non-Governmental Organizations
BLM	U.S. Bureau of Land Management
CCEA	Canadian Council on Ecological Areas
CEC	Commission for Environmental Cooperation
COWS	Community Oriented Wolf Strategy
DYCP	Drywood Yarrow Conservation Partnership
ENGO	Environmental Non-Governmental Organization
EPA	Environmental Protection Agency
GPS	Global Positioning System
MOS	Measure of success
NACP	Natural Area Conservation Plan
NCC	Nature Conservancy of Canada
PTSD	Post-traumatic stress disorder
SALTS	Southern Alberta Land Trust Society
TNC	The Nature Conservancy
USFS	United States Forest Service
WLNP	Waterton Lakes National Park
WNA	Waterton Natural Area
WPF	Waterton Park Front project

Introduction

The title of my thesis forewarns that what follows is unsettling. A conservancy organization is not expected to go ranching. That is what the Nature Conservation of Canada (NCC) did, however, when it bought several ranches near the Waterton Lakes National Park in the southwestern corner of Alberta. Granted, there were extenuating circumstances. The area was threatened with residential development when several ranches had come up for sale at once. And the purchase agreements encompassed partnerships with sellers who continued ranching as tenants or co-owners.

Also, conservation does not evoke cosmetics, given that its purpose is to safeguard what is natural. Here the cause for dissonance is more ambiguous, for embellishments are to be expected on the part of an organization canvassing the public for financial support. And yet, it also begs the question: what genuine kind of conservation can a partnership with ranchers deliver?

Official news came in 2007 with a press release that the Nature Conservancy of Canada was inaugurating the largest conservation project in Canada, the Waterton Park Front Project, a joint venture with local ranchers that would secure a key portion of the Crown of the Continent Ecosystem.

It was intriguing to me, as I was very familiar with the area having ranched there several years, and of all the places where I had witnessed – or practiced – ranching, this was not one that stood out as friendly to conservation.

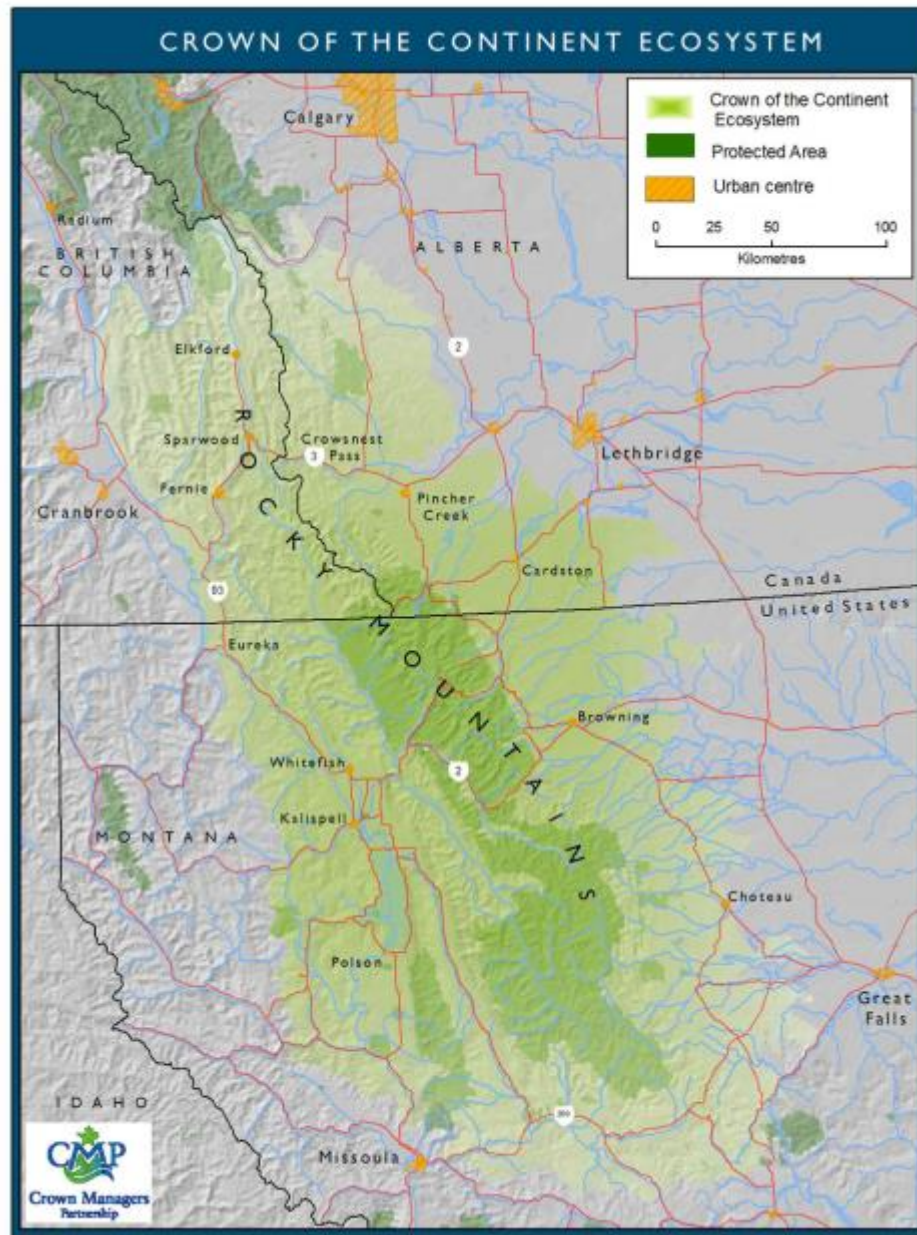


Fig 0.1 Map of the Crown of the Continent Ecosystem, created by the Crown Managers Partnership: <http://crownmanagers.org/> accessed June 3rd 2016

Most local ranchers in the vicinity of the hamlet of Twin Butte in Pincher Creek Municipal District, and across the Waterton River in the hamlet of Mountain View in Cardston County, did not know such a thing existed as a Crown of the Continent Ecosystem – a recent

conservation innovation – nor were they sure where the Waterton Park Front Project began, where it ended, and if their ranch was in it. But it did confirm for them that they had been right about the land buyer who had been snooping around paying top dollar for any real estate near the national park and trying to find out which ranches were in trouble. The writing was on the wall, it was said, that some outsiders were trying to change how things were done in that part of the foothills.



Fig 0.2 Map of Waterton Park Front Project in (Pearson 2007b).

The south-westernmost corner of Alberta is a peculiar kind of ranch country. To the north of Pincher Creek town and the Oldman River, there is the famous foothills big ranch country and to the East is mostly prairie farmland, much of it irrigated. But the land at the very corner was so forbidding as a place to make a living that the last of its open range was

claimed by settlers only at the tail end of the homesteading rush of the early 1900s. Tucked up against the national park, which was founded in 1896, it stands where the prairies meet the mountains with almost no transition before the alpine zone.

Local people warn that the biggest snowstorms come in June and sometimes begin again in August. A rare occurrence this is, but when it happened in the early days of ranching, the death toll on cattle was so memorable that big ranches never became established there, leaving it for homesteaders to eke out a living. In due time, once most homesteaders had also vacated, their land was conglomerated into small ranches, their owners considering themselves members of the enviable social station of ranchers thereafter.

Besides the striking panorama of the looming Rockies that give it a pristine complexion, this ranch country is known for its wilderness. For that reason alone, it is not surprising that conservationists covet it. What is not so well-known, however, is that until recently, most of the wild animals that make the reputation of the area had been extirpated, having been displaced, shot, trapped, or poisoned. A ground-zero baseline had become the norm over the last hundred years for any ecological order to come. Therefore, when elk, mule deer, cougar, grizzly bears and wolves began infiltrating the lower country again, most descendants of the first settlers saw them as newcomers, if not intruders. This is also why it was surprising that both the Nature Conservancy and the ranchers made the joint venture look like such a natural fit, at least for the benefit of their public audience.

The foreseeable future for the area was quite likely the kind of gentrification that has occurred in parts of Montana across the border, where “post-cowboy economics”

displaced primary resource-based industries with people bringing their own wealth or earning income from their desk (Power 1996; Power and Barrett 2001). On its own merits, however, ranching has been deemed compatible with conservation, especially if it spared a landscape from residential development (Knight, et al. 2002; Maestas, et al. 2002; Maestas, et al. 2003). And by other measures, a recent study estimated that the NCC's Waterton Park Front Project was becoming an exemplar of "place-based environmental governance" (McCuaig and Quinn 2011), operating under principles of transparency, inclusiveness, and ecological accountability.

The national conservation organization, now principal landlord of a ranching landscape, was also building up high expectations beyond intervening to prevent the encroachment of residential development. It was to steer ranching into a science-based enterprise in conservation. Therefore, when I set out to evaluate how conservation is done when its professionals get involved in the conduct of ranching, many of the criteria appeared to have been laid out already. My inquiries were to focus on how conservationists could harmonize the interests of cattle ranching with the protection of plants and animals deemed significant for conservation in that particular area. To elucidate this, it was necessary to unpack common understandings about the respective conducts of ranching and conservation. Given that the scientific literature is a constant interlocutor in the context of a thesis in anthropology with an ecological theme, the prospects were good of striking solid analytical grounds. Unexpectedly, however, the task turned into a comprehensive conceptual retooling, and the tinkering continued all along as I proceeded to uncover inconsistencies in the making of so-called 'hard sciences'.

A meta-theory for ranching

When dealing with ranching as theoretical subject in anthropology, there is no avoiding the elephant in the room, Tim Ingold's early work on the social evolution of ranching as a mode of production (1980; 1990). Although Ingold has since made a radical departure from the kind of theoretical work he did at the time, the elephant still stands, making rare but notable appearances. It was lately reintroduced by another anthropologist, Thomas Sheridan (2007) as a key reference for the framework of a political ecology of ranching. I will therefore begin my journey in academic literature by focusing directly on the theoretical 'big picture'.

The evolutionary theory of ranching concurs with other academic disciplines that ranching is a model of conservation in parts of the world. Relying on ethnographic material (including his own) Ingold argues that: "modern ranchers are of necessity more concerned with the optimum use and conservation of natural resources than hunters and pastoralists have ever been (e.g. Bennett 1969:88-9)" (Ingold 1980:262).

The theory borrows from Marx the notion that social evolution unfolds as a series of transformations arising from the dialectical interplay between social and ecological relations of production (Ingold 1980:9). Accordingly, ranching improved radically on pastoralism in several respects. The principal dilemma of pastoralism is that it values livestock as the primary form of wealth and seeks unlimited access to forage. Access to land for pastoralists is thus *undivided*, which invites the proliferation of livestock beyond the carrying capacity of the land (Ingold 1980:202, 451). The ranching mode of production, on the other hand, allocates exclusive rights to land for individuals to use privately at their

discretion. Access is henceforth *divided*. Ranching would eclipse pastoralism on that account alone, but it also alters other social objectives to achieve its paramount goals. For ranching to fully function, the means of accumulating wealth has to be diverse, relying on money and market transactions to accrue capital in any fungible form, including land (Ingold 1980:3, 231-232).

Thereby, a reform of social objectives pertaining to the objects of property is what inspires a novel way of coping with ecologic limits, which is in full agreement with the logic of resource economics. Succinctly put, self-interest suffices from that point forward to motivate resource users to internalize the externalities of their economic activities (Anderson and Hill 1975; 1998; Behnke 1985; Demsetz 1967; Hardin 1968). In other words, landowners are forced to contend personally with the side effects of their own use of land for grazing, and thus the full privatization of relations of property is the best policy for transforming livestock owners into careful stewards. Grazing activities are well supervised thereafter and livestock herds are culled at regular intervals, which, as Ingold puts it, mimics the effects of large predators to “stabilize prey numbers around an optimum defined by the food supply of the prey” (Ingold 1980:29).

Dubious premises for evolution

The theory is in keeping with the arguments of private property rights advocacy like those recently espoused by the federal and provincial governments in Canada to divest the state of public grazing lands. Large tracts of native grasslands the Crown has held in trust since the time of colonization, and later when governments recovered land titles after droughts

forced most prairie homesteaders to abandon in the early 20th century (Jones 1987), have been put up for sale, most recently in Saskatchewan.

Resource economists have given these measures considerable traction. It is not within the purview of my analysis to tackle this at length, but it suffices for the present purpose to point out flaws in the pastoral evolution theory, partly due to misconceptions and partly as a function of the choice of ethnographic sources. To begin with, the theory conflates several axes of reference. The opposition between ‘divided \Leftrightarrow undivided’ is confounded with the ‘regulated \Leftrightarrow unregulated’ opposition. Consequently, it infers that individualized property (as in ‘divided’) has the sole capacity to properly exert control over land use although there is no such monopoly over regulatory processes. Privately operated ranches with an enviable ecological track record are numerous, but land privatization alone does not carry any guarantee of favorable ecological outcome. The same, conversely, for its corollary, which dismisses communally held property (or ‘undivided’) as doomed to fulfill a Malthusian prophecy. Suffice it to point out that other theorists have demonstrated the effectiveness of communal regimes for regulating resource use (Bromley 1989; McCay and Acheson 1987; Ostrom 1990). Case in point, some pastoralist groups closely regulate access to their communal resources (McCabe 1990).

Communal property theorists propose, however, that the disregard for regulation is rather a symptom of ‘open access situations’, precisely the kind that was prevalent in the ranching heyday of the Great West (Sheridan 2007). Granted, as Ingold noted in that respect (1980:244), there were attempts to regulate access to the open range according to the principle of ‘accustomed range’ – which circumscribed areas that individual herds grew

accustomed to and adopted as home range (Osgood 1929); as well other social arrangements that suggested the informal partitioning of the range (Rivière 1972; Strickon 1965). Exclusive access was also enforced by illegal means and fought over during range wars (Clay 1962; Elofson 2004). But for the most part, the open range principle had primacy, both *de facto* as preferred practice and *de jure* in places like western Canada, until the end of the 1800s, even after the government had allocated large grazing leases in 1882. Canadian law sanctioned the use of open range, notwithstanding that fees usually went unpaid and grazing was unregulated (Elofson 2000; 2004; 2009; Evans 2004; 2007a; MacLachlan 1996). Be that as it may, it was not a pastoral but an *agrarian* reform that came along with fence-in laws to enforce the privatization and enclosure of land – cattle owners thereafter had to *fence in* their herds. Before that, free-ranging livestock had to be fenced out.

Given this kind of history, which was similar in most parts of the world where ranching emerged or diffused, I will argue that there is no comprehensive ethnographic ground to theorize that ranching grew out of pastoralism other than in some circumpolar regions where erstwhile pastoralists and reindeer became ranchers and livestock under the circumstances described by Tim Ingold (1976) – perhaps, arguably, with the exception of Navajo people.

Regardless of flawed theory, policies for the use of rangelands have been framed in ways that cater to the prerogatives of private individuals. In view that the latter have a broad range of discretion over vast areas, including on public lands, I submit that it is imperative to further scrutinize the premises of such social theories. The oversights

become more critical here when it becomes apparent that they mask what is going on in the current conduct of ranching. And in terms of the advantages of privatization, they are further suspect since private property prerogatives are acquired through inheritance or outside wealth, and not remotely as a function of ecological merit.

A star is born

The thesis of cultural geographer Terry Jordan (1993) rather favors diffusion over evolution. In a nutshell, cattle and cattlemen from Europe landed first in the West Indies then radiated out from several beachheads towards every corner of North America. The proliferation of livestock, mainly of cattle, spawned several regional variants of livestock-based livelihoods. Hence not entirely ephemeral, for cattle rearing persisted in many areas East of the Mississippi River, the cattle frontier acquired along the way all the cultural traits for trademark ranching, which, according to Jordan, occurred in Louisiana, at the mouth of the river, where Hispanic, French, 'Indian', and Anglo cattlemen mingled. Cultural production aside, what disseminated alongside was a particular brand of ecological aftermath. As Jordan (1993:9-10) puts it, wherever cattlemen went, livestock "invariably caused habitat modification and damage".

Anthropologist Thomas Sheridan challenges this legacy, in concert with geographer Nathan Sayre:

...historians and geographers have persistently misidentified ranching as "capitalist range livestock production," conflating the history of ranching with the history of

cattle in the American West. In [Sayre's] words, "the question of where pastoralism ends and ranching begins goes unasked" (Sayre 2002, p. xxxvi). The confusion can be cleared up by introducing a third term, grazing, to characterize "capitalist range livestock production" (Sayre 2002, p. xxxvi) dependent on free grass on the open range. Graziers [is] a term sometimes employed in the literature (Rowley 1992)(Sheridan 2007:124).

This theoretical proviso introducing 'graziers' who perpetrate 'grazing' is supposed to suggest that genuine ranching originated when the grazing offenders were banished from the range. Quite a theoretical *tour de force* it is to conjure up a miscreant character for the diffusionary plot. But under scrutiny, it betrays a post-Frontier spin on the old Great West theme which, I submit, happens to conveniently safeguard the good reputation of the new-age rancher. It also obfuscates much of what is still going on.

Distinguished Texan historian Walter Prescott Webb (1931) had already circumvented the problem with a spontaneous generation thesis for ranching, which he derived from the classic Frontier theory of Frederick Jackson Turner (1962 [1928]). Webb thus dismisses any dubious genealogies, declaring ranching legitimate by birthright, the work of serendipity at it were, when the inventions of barbwire, windmills and six-shooters converged on Texas with a Manifest Destiny to bring order at once to the 'Indian infested' Great Plains. The blueprint for ranching was circulated soon thereafter, west and north.

By such account, Patrick Burns, Alberta's first business tycoon, is one of the first converts north of the international border. He amassed a fortune from livestock, then

founded the Calgary-based P. Burns & Co. food empire and was immortalized as one of Alberta's 'Big Four' once he acquired most of the famous ranches from the early days of the Canadian Cattle Kingdom. It was said he could travel south from Calgary to the international border without stepping off his personal real estate.¹ His grazing antecedents went unheralded, however, perhaps due to a shady past. He did not buy these ranches until *after* he had already made a fortune selling beef from cattle which, in many instances, he had fattened on the open range without paying any government grazing fees (Evans 2004). His career vindicates the proposition that the conjuncture of entrepreneurship with livestock can provide the means to accumulate wealth indefinitely. Never mind that to very few victors go the spoils of capitalism, the ranch tycoon spent vast sums on philanthropy to polish his reputation and was applauded for the way he looked after his vast estate. Ranching, in that respect, appears salutary. This said, it has been argued elsewhere that the compulsion to overlook ecological thresholds is inherent to the conduct of such business, and this alone presages the downfall of capitalism (O'Connor 1988; 1994).

Throughout my thesis, I bring a sobering counterpoint to the praise of ranching. I submit that to ascribe an exemplary ecological scorecard based on a dubious birthright is a kind of theoretical exceptionalism which, in the end, does disservice. I take the position instead that contemporary ranching has yet to come to terms with its history of bovine supremacy over landscapes that began with the turnout of domestic animals to scrape a

¹ See: "Patrick Burns: A Man of his word". Calgary Herald. September 13, 2008. Retrieved July 16, 2015.

living from the wilderness (See Chapter 1). It was while at the service of the bovine cartel in the Southwest U.S. that Aldo Leopold, perhaps the foremost 20th century American conservationist, was confronted with the problem of environmental ethics. His famous essay about 'thinking like a mountain' that is deathly afraid of its deer invites his readers to share in his personal epiphany. His parable was also a politically correct way of eliciting awareness about the scourge of cattle and the importance of wolves. Other than by allegory, it was unthinkable to broach this delicate subject when the U. S. Federal government, his employer, had just finished eradicating the last wolves from the recently created Yellowstone National Park. The government campaign had appeased ranchers. But that was only until the table of ecological ethics turned when in 1997 wolves were released in the same park, reawakening the wrath of ranchers.

So I leave it to others to continue defending the notion that ranchers are born environmentalists, reformed pastoralists or distant cousins to unscrupulous graziers. With that, however, I do not imply that ranching is intrinsically bereft of environmental ethics or discipline in ecological matters. Quite the contrary. But my case studies show that self-regulation does not apply uniformly any more than the prerogatives afforded by relations of property are any guarantee of upstanding ecological denizenship. There is not even such a thing as a longstanding profile for an ecological morality of the kind. I therefore invite the reader to join me on a historical tour and then an ethnographic tour to find out what has gone on and what is going on in particular landscapes, to witness how ranching and conservation are done – and not focusing only on exceptional cases.

The reproductive hazards of ranching

It stands to reason that by necessity a mode of production must be reproduced. Yet, according to Tim Ingold, ranchers are expected to forfeit such aspiration:

If some other form of land-use, such as agriculture or mineral extraction, were to yield higher profits, the erstwhile rancher would not hesitate to reinvest his capital in alternative operations (Ingold 1980:239).

Ranching is therefore vassal to capitalist aspirations. A peculiar twist of Marxian logic it is, however, to envisage that by dialectical interplay a mode of production hurries to scuttle itself. I submit that the logic of the above formulation goes the other way around and that ranching is not a standalone mode of production at all but a livelihood that *articulates* with capitalism, for better or worse (see Rey, et al. 1971). Otherwise, if it is expected that a rancher waits for the opportunity to liquidate his ranch to reinvest in another venture with higher returns, it appears that generations of ranchers have proven to be unfit capitalists. That is, unless they were unfailingly confident that the value of ranches would rise indefinitely, which, in some places, seems to have been a very good bet.

The inflation of ranch values has indeed been constant in Alberta. And outcries about the breakup of ranches signal that ranching has begun to cannibalize itself in earnest. Of course, a much-revered contingent of ranchers draws considerable attention by putting emotional attachment over profit. That, in turn, hinges on the solidarity of household members. And therein precisely is the seed of dissolution. Chapter 1 reviews the outcomes of intergenerational crises over the last two decades that betray internal discontent amongst heirs when land ownership becomes a more profitable venture than growing

livestock. Of course, from a capitalist vantage point, that turn of events brings a windfall. From a livelihood perspective, however, the legacy of relations of property suggests that ranches are more likely to remain intact if, by law, they only have usufruct of an indivisible collective asset like government grazing leases. And conversely, it suggests also that ranching, as a mode of production, fares worse when ranches are made up of multiple private land titles that can be extricated and sold separately as parcels – a joint legacy of private land tenure and the Dominion Land Survey. Chapters 2 and 3 explain the domino effects of quandaries of that kind, which brought ranchers and conservationists together at the negotiation table in the Waterton Lakes area – as unlikely a set of partners in social reproduction as this particular place had ever witnessed.

An auxiliary economic sector

For decades, North American ranching has not been a standalone economy either but an auxiliary sector to the larger beef production agribusiness. The distinction is important given that by definition agriculture converts landscape into featureless land. Beginning in the late 1800s, over 80% of the original grasslands in Canada – and a similar proportion in the U.S. – became grain farms in the short span of four decades and the trend has picked up again recently (Bailey, et al. 2010:7, 18; CEC 2015:25). Furthermore, the livestock economy, especially beef, is the primary consumer of the grain production in Alberta and the U.S.² Indirectly, then, much of the most arable land is also used to grow livestock. The function of ranching is thereby to supply young stock for the feedlots of industrial cattle

² See the USDA statistics: <http://www.ers.usda.gov/topics/crops/corn/background.aspx> accessed April 12th 2016.

feeders. If it were not that ranching survives despite marginal receipts from cattle sales, the family-unit ranches of the ‘cow-calf’ sector would have already succumbed to the competition from agribusiness. But maintaining brood cows under confinement has proved too costly for feedlot operators, contrary to breeding for the production of poultry, eggs, pork, and dairy goods.

The unexpected upshot of this economic demotion, however, is that the social status of ranching remains intact and it remains *by far* the most land-extensive economy in the western U.S. outside Alaska. The Center of Biological Diversity reports: “Approximately 229 million acres of federal public lands in the western United States are used for livestock grazing for cattle and sheep” (Glaser, et al. 2015:1).

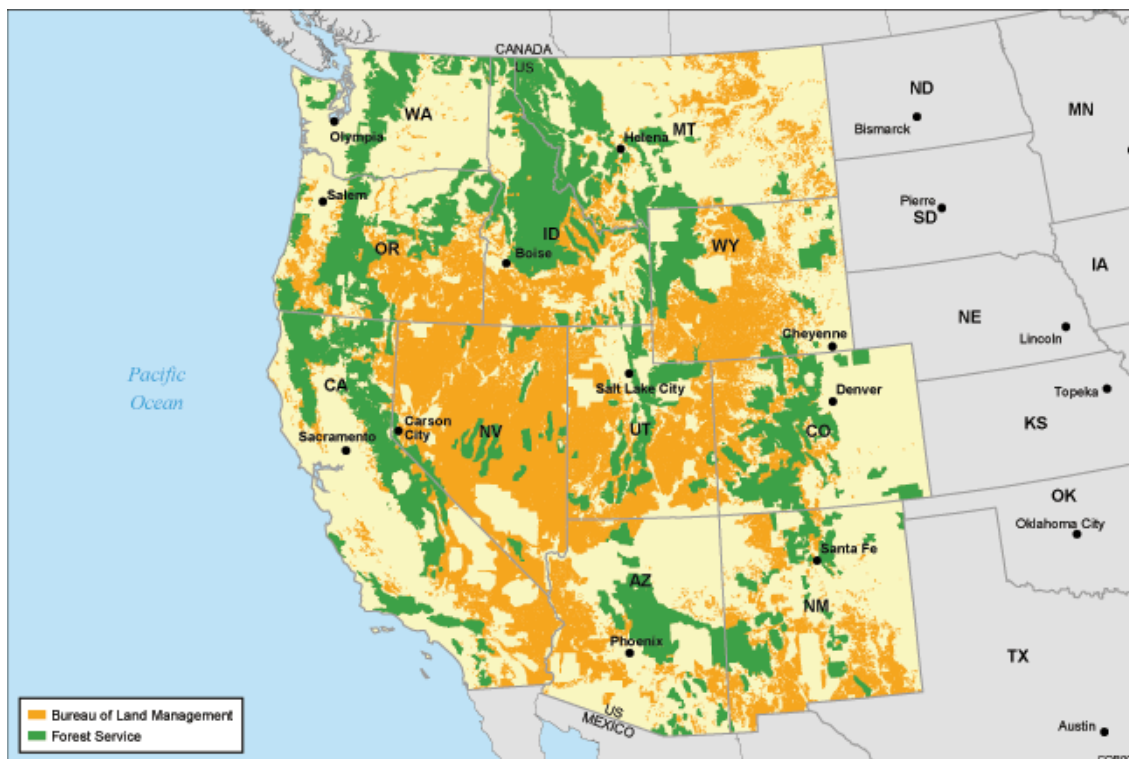


Figure 0.3: Map of public lands in western states administered by the Bureau of Land Management (BLM) and the United States Forest Service (USFS). Source: The Environmental Science Division, Argonne National Laboratory, Lemont IL.

The colored areas on the map above cover most of the surface of eleven western states: 65% of the area colored in green is grazed by livestock under U.S. Forest Service jurisdiction, along with 79% of the area colored in orange for the lands under the Bureau of Land Management (BLM) (Glaser, et al. 2015:9, 10, 36).³ Most of the surface area of these states is under the jurisdiction of two Federal agencies whose mandate is, in part, to provide grazing subsistence for domestic bovines. The principal benefactors who have grazing access to these public lands are limited to a small number of permittees (21,540), less than 2.7% of approximately 800,000 cattle producers in the United States (Glaser, et al. 2015:6). Ranchers are overwhelmingly private landowners and the vast majority have access to almost 62% of all rangelands in the U.S. (CEC 2015:15).

In Canada, large tracts of Crown Public Lands in the western provinces are also dedicated to livestock grazing: about 11 millions acres (4.451 million hectares) in Alberta (Adams B. personal communication 2012), amounting to 68% of all rangelands in Alberta; and 21 million acres (8.5 million hectares) in British Columbia (BC).⁴ Other statistics suggest that, proportionally, cattlemen own title (in fee simple) to 79% of the rangelands in Canada (CEC 2015:15).

However big it appears from the outside, however, ranching is small from the inside. In terms of herd size, most of the Canadian cattlemen (61%) have fewer than 47 cows; these herds make up a fifth of the country's beef cattle inventory; another 26% of

³ See: <http://corridoreis.anl.gov/guide/maps/map2.html> accessed April 12th 2016

⁴ See: B.C. Ranching Task Force, Report to Government, 2009.

cattlemen own between 48 and 122 cows, making up 33% of the total cattle inventory; a small minority (13%) owns more than 122 cows, holding half of the cattle⁵; and ranchers owning over 1,000 animals are relatively few (not to be confused with the feedlot agribusiness of 'finishing' cattle for slaughter where operations commonly hold several thousand head of cattle at a time). In the U.S., the ratios are even more asymmetric: in 2011, 80% of cattlemen (99% in 2004) owned fewer than 50 head, whereas relatively few ranching estates owned the largest herds and enjoyed exclusionary access to much of the ranching landscapes. All told, the average herd in the U.S. has 40 head and in Canada it has 63 head (CEC 2015:15).

As for the source of grazing subsistence, the available forage in the country, according to Agriculture Canada, is made up mostly (72%) of native rangelands (26 million hectares or 64 million acres), 11% from cultivated pastures sown with introduced perennial grasses (4 million hectares or 9.9 million acres), and 17% from crops planted annually (6 million hectares or 14.8 million acres) (McCartney and Horton 1997:1). On the other hand, the Government of Alberta estimates that native rangelands provide only 14% of the total grazing forage in the province, a small proportion considering that Alberta (which has the largest herd of any province) has made available to ranchers the second largest area of public rangelands after British Columbia.⁶

Ploughing under hallowed native rangelands was a radical departure for ranchers.

⁵ See: <http://albertabeef.org/uploads/CanadasBeefIndustryFastFacts-91.pdf> accessed April 10th 2016.

⁶ See: http://www.albertapcf.org/rsu_docs/range-management.pdf accessed March 31st 2016.

But storing hay was a lesson learned the hard way after a series of lethal winters in 1886-7, 1896-7, and 1906-7 that decimated cattle herds on the northern plains, both in Canada and the U.S. The aftermath, as Wallace Stegner (1955) put it, forced ranchers to become stock farmers. Terry Jordan (1993) suggests that the herds in Montana were vulnerable to winter die-off because of overstocking, but most of the rangelands in the Canadian Prairies were not stocked nearly to capacity when came the fateful winter of 1906-7. Furthermore, one must bear in mind that those are regular non-biological or 'abiotic' events (extreme drought, fire, freezing temperatures, snowfall, etc.) that thin the ranks of wild herbivores populations as well. In other words, the die-offs do not necessarily derive from a Malthusian chain of ill-fated practices like overstocking.

By safeguarding animal inventory thereafter, the diversification into farming provided a margin of security for supplementing forage during winter and at other times of need. Also, it potentially harmonizes supplementation with the balanced allocation of the range, ostensibly the strong suit of ranching. But that is only an option.

In some types of ranching country, as I explain in Chapter 1 and Chapter 2, these measures of feed security also disengage ranching from conservation in nearly every respect. First, it is now conventional on private ranches in some areas to postpone feeding livestock hay until pastures are depleted or snow-covered, whichever happens first, a grazing practice that degrades the health of rangelands according to the tenets of range science in North America. Chapter 1 explains the range of practices in a regional context with a contrast between small ranch country and big ranch country. Second, hay is the

second largest crop in Canada, fast gaining on wheat.⁷ This, in turn, compounds the conversion of rangelands: a recent survey submitted to Agriculture Canada found that “the natural grasslands [of several] prairie ecoregions are considered endangered, rare, or threatened ecosystems” (Bailey, et al. 2010:iv). Overall, cattle operations have intensified the use of land by diversifying into agriculture, and yet the average ranch has not acquired farmland but has farmed instead a portion of the home place and stayed small, especially in areas where the history of land tenure has favored homesteading – like the principal area under study here.

Also, due to the long decline of ranching revenue vis-à-vis inflation in the economy at large, there is not enough to meet household needs: in 2011, 75.6% of Canadian farm and ranch income came from off-farm/ranch activities (CEC 2015:19). Consequently, between time attending to ranching and farming chores (unless that work is contracted out) and time spent earning the principal household revenue, there is little to spare for supervising directly what is happening on the range, a situation made worse by the difficulty of retaining hired hands for that task.

Another upshot is the aging of the workforce. The average age of a rancher in Canada is 54 years (59 years in the U.S.) (CEC 2015:16-17). In view of the inflation of rural land values, selling out is an attractive option (CEC 2015:21). The rate of attrition has indeed been high: the last eleven years saw a 25.6 per cent reduction in the number of

⁷ See: <http://www.statcan.gc.ca/ca-ra2006/articles/snapshot-portrait-eng.htm> accessed April 8th 2016.

cattle producers in Alberta.⁸

Put together, these factors speak of crisis, not merely imminent but *ongoing*, which begs the question: what can this superlative mode of production promise to achieve now that it is in the hands of an aging population of part-time ranchers who have to resort to farming and procure most of their income from sources other than ranching? If the ranching economy is struggling to reproduce itself, which is the case in every respect, social, economic, ecological, and political, then what are the ecological implications in store for much of the continent given that it is still occupied by grazing domestic animals?

The odds are that practical responses would be framed in terms of ‘adaptive management’. Invariably, this superlative quality of management arises at the interface between livelihood and conservation such that whatever approach is contemplated must be ‘adaptive’ to be sound. But again, by what standards is adaptation measured? And to whom does it answer?

The cultural ecology of ranching

In his study of agrarian development during the mid-1900s, anthropologist J. W. Bennett (1969) compared four rural ‘culture types’ found in the Cypress Hills of Saskatchewan: farmers, ranchers, Hutterite colonies, and Cree indigenous people. Unlike Cree, ranchers stood out in Bennett’s assessment as exceptionally able, keeping pace with agrarian

⁸ See the publications of the Government of Alberta:
[http://www1.agric.gov.ab.ca/\\$Department/deptdocs.nsf/All/anim14733](http://www1.agric.gov.ab.ca/$Department/deptdocs.nsf/All/anim14733) accessed April 10th 2016

development while contending with the marginal and uncertain conditions of the area. Within three generations since the first cattlemen had arrived trailing their herds across the international border from Montana, they had settled, become *bona fide* ranchers, secured prosperity and had achieved high social status, having heretofore inherited fame from the days of the frontier. In roughly the same span of time, Bennett estimated that Cree had gone in the other direction all the way down from skillful bison hunters roaming the plains to despondent ne'er-do-wells stuck on a small reservation. In short, these two culture types had proven variably adept at 'adaptation'.

By Bennett's (1969:18-19) definition, adaptation is "the problem-solving, creative, or coping element in human behavior that permits a dynamic approach to environment". Its purpose derives from particular goals and specific needs, and the chief measure of its success is the sustained yield of resources over time (see Bennett 1969:13; 1976:298). In later work, J. W. Bennett's (1976) further exposition of the adaptation concept gets rather convoluted as he attempts to harmonize ecology and cultural anthropology. Goals and criteria for success are defined according to social scale, beginning with the individual actor. Yet, performance is framed internally by "cultural givens: the perceptions and wants of humans as conditioned by their social milieu" (1976:162), and externally by "institutions and bureaucratic assemblages" (1976:297). All of it is, of course, subjected to natural laws devised by scientists. Any dissonance between the goals of economic actors and the ecological, cultural, and social prerequisites as defined by societal standards makes for maladaptive strategies.

By these terms, the outcome of adaptation is unequivocally normative, and through

sanctions it penalizes or gratifies practitioners according to criteria deemed appropriate for the public good. The function of culture is to leverage the latter, according to Bennett, with “a supply of *moral precepts*, which function as constraints on free choice of models for action” (Bennett 1976:273 italics the author's). And it is thereby the cultural ecologist's role to assess this state of affairs and make recommendations accordingly (see Bennett 1969:328-333). In this case, Bennett saw it fit that adaptation spearheaded an agrarian transition for every ‘culture type’ he had encountered in his field study.

An essentialist slippage

By these terms also, it is noteworthy that ranching has since been failing the tests of adaptation, both internally and because of external factors. Economically, the value of its production has lagged behind miserably. One rancher put it this way, that selling two steers in the 1960s bought a new car, and now despite a sharp upsurge in cattle prices, it takes almost ten times as many to match the same exchange value. Unlike those days, too, the opportunity costs of ranching are high and outside employment yields much higher returns even for the uneducated, therefore luring young men away from ranching (see Bennett 1969:199, 311; 1976:283). Socially, the erosion of household solidarity has compromised the integrity of ranches. But all factors considered, it is the ecological domain that has pushed ranching – including its theories – into a totally different world of ‘cultural givens’. This is especially the case as it pertains to conservation. Then again, what is that?

It is obvious that the above theories customize the meaning of conservation for their respective purposes. But when theorists couch arguments in their own brand of absolute

terms, there is little of relevance to distil out of them. Bennett argues that the defense of wilderness by conservation professionals is unconscionable, whereas ranching embodies conservation to begin with: “the rancher sees himself as a part of ‘unspoiled’ nature, a partner with the coyote, the grass, the coulees, and the open spaces – however much he may in practice have to modify this approach” (Bennett 1969:94). For his part, Tim Ingold opines that conservation advocates who accuse ranchers of wreaking ecological mayhem peddle a “bourgeois conception of nature as something that has to be kept in its pristine form for human enjoyment” (Ingold 1980:262). “Little understanding may be gleaned from such judgments”, he adds, “except for the ideological predispositions of those who make them”.

An ideological predisposition for unitary profiles is also a sure way for a theorist to paint himself into a corner. It is rather apparent, I submit, that, given the diversity of behaviors, dispositions and attitudes, the very notion of a paradigmatic rancher is a contrivance, for it is commonplace for a rancher who finds kinship with wild animals to live across the fence from another rancher who at every opportunity shoots his animal partners, coyote, wolf or bear. Here I use labels not to denote some contrived ‘culture types’ but to capture the variability in social and moral types of interspecies relations. The label of bovine fundamentalist I attribute to the cattle owner who is averse to sharing a landscape, especially the one he owns, with any wild animal – Chapter 5 witnesses several ranchers of that disposition monopolizing the stage at public meetings. Conversely, to those ranchers who beyond the call of tolerance make sacrifices to accommodate wild animals, those who welcome the return of large carnivores, and those who object to their persecution (see Chapters 4 and 7), it would be absurd to attribute a bourgeois conception

of pristine nature for their efforts to get along with the kind of wildlife, like grizzly bears, that J. W. Bennett foresaw never would – or should – come back (Bennett 1969:93-4).

Ideological predispositions haunt the zone between livelihood and conservation. As the above attests, it is not exclusively a shortcoming of advocacy. I use the above illustrations to signal that when I cast my net wide to discern the range of dispositions of people who make a living on a particular landscape, I also probe those of the knowledge professionals involved there as well. I recruit evidence from the relevant literature, of course, and frame the thesis thematically to relate my findings with those of anthropologists, geographers, historians, political scientists and natural scientists preoccupied with the same area and subjects. In the process, I strive to convey the most current information available, of course, but I also invite the reader to ponder both the findings *and* the predispositions therein. This was implicit at the onset, given that the presence of accredited knowledgeable people is not some inconsequential silhouette appearing on television, online, in newspapers or magazines, or somewhere else in the remote background – let alone academic journals. But the task became more imperative once I found out that people ‘in the field’ were skilled at observing observers, as it were, and on the lookout for scientists, researchers and members of expert committees; debunking or championing their handiwork, as the case may be, disgracing or else recruiting them.

When I asked about this, answers varied considerably: some wish to foster cordial relations with accredited knowledge makers; others find annoying the buzz from the research grandstand; and overall most are ambivalent: it depends on *who* and for *what*

purpose. But they all acknowledge the indelible marks the knowledge profession makes on the bureaucratic apparatus responsible for ecological affairs. And from that standpoint, the aftereffects of scientific knowledge-making are very much part of my inquiries. Suffice it to say for now that its flaws are thoroughly exploited.

A phenomenological epiphany

It is at the juncture of ranching and ecology that I am compelled to unchain the elephant from its theoretical moorings. And given that I could be suspected of tackling a strawman in releasing his elephant, it is my great fortune that the trailblazing mahout is Tim Ingold himself whose own trajectory has been inspirational for my own.

More to the point: decades after elaborating his meta-theory for the evolution of ranching, Tim Ingold argued that ‘culture-types’ “are models built up after the fact, constructs of retrospective analysis” (Ingold 2013:6) in the same way that “[cultural] evolution can only occur in the space of abstract representations”.

He thus challenges the neo-Darwinian paradigm of cultural evolution at the 2010 Royal Society symposium entitled *Culture Evolves*:

“the fallacy of this way of thinking lies in supposing the form miraculously precedes the processes that give rise to it (Oyama 1985)” (Ingold 2013:7; Worster 1985).

Ingold proposes instead that

“Forms of life, then, are neither genetically nor culturally preconfigured but emerge as properties of dynamic self-organization of developmental systems. And evolution

is their derivational history” (Ingold 2013:8-9).

The phenomenon is consistent across scale, from systems to individuals:

“Each of us is instantiated in the world along a certain way of life or ‘line of becoming’ (Deleuze and Guattari 2004:323)” (Ingold 2013:8).

It follows that phylogenetic tree notwithstanding, “the first step . . . is to think of humans, and indeed of creatures of all other kinds, in terms not of what they *are*, but of what they *do*”. It therefore becomes imperative “to think of ourselves not as beings but as becomings – that is, not as discrete and pre-formed entities but as trajectories of movement and growth” (Ingold 2013:8).

Between what actual people actually do and how prefigured profiles of ranching and conservation define them, there is not much traction to be found with the premises offered in social meta-theory. On the other hand, Tim Ingold’s theoretical *volte-face* helps to make sense of the discrepancies between my case studies. Furthermore, about the obfuscation of pre-figured phenomena, it is vital to acknowledge that non-human entities participating in these co-constitutive relations also have individual and collective histories: grasses have both plant and sward histories, and the same goes for herd histories, pack histories, and so forth. Put together, it follows that landscapes hold shared social happenings that populate the living memories of those – human and nonhuman becomings alike – circulating within them. Hence, there is more coherence to be found in their layout if, instead of cultural or taxonomic displays, landscapes are apprehended as ‘*ways of engaging*’.

Then again, it is also apparent that those human ‘becomings’ are committed to

securing and safeguarding well-trodden trajectories. And if a map appears misguided in indicating what lies ahead, it is just as likely to ditch it and look for another lead. Thus about the subsequent proposition that “life unfolds as a tapestry of mutually conditioning relations” (Ingold 2013:9), those involved try to ensure that incipient life does not relentlessly offer up random surprises. To follow up on the convoluted metaphor, it is the loose ends at the leading edge – which Ingold says are the condition of existence – that human becomings try to tame and hold in place (see Chapter 8). And therein lies the moral tension in the fabric that my ethnography of ranching landscapes also aims to reveal.

Totalizing conservation

Academic discussions about ranching converge invariably towards the platform of property relations. The same goes for conservation. And as it should do, argues ecology professor Bill Freedman (2013:2) in his History of the Nature Conservancy of Canada; “walking the talk” in direct-action conservation, he writes, means “acquiring and conserving natural habitats”.

When I met with a committee from the NCC National Board after it toured its large domain of ranches, there was exhilaration – they had seen a grizzly bear. But there was also a palpable discomfort about the implications of the project: “Do we actually have to *manage* this?” an incredulous committee member ventured to ask. I had already inquired with others: “What is it you actually want to see *happen*?” Other than provide a safe place for nature to take its course, they had no specifics in mind.

I begin my coverage of the situation at hand, that is, ‘Where the Nature Conservancy of Canada goes ranching’, with a focus on land transactions and the fund raising that

underpins it. Broadcasting the arresting beauty of landscapes under imminent threat is the chief enticement that appeals to the idea of nature as object of contemplation. Chapter 2 goes into details about the notion of landscape as a way of seeing nature, itself a way of engaging, of course, but from the outside looking in.

The principal preoccupation with conservation in the anthropological literature boils down to purpose and method. The movement never had the intention to extract conservation from capitalism: such is the principal indictment of its critics (see Castree 2003; Garland 2006; 2008). Conservation belongs to the capitalist underworld and it has been tried and was found wanting on these grounds. The 'conservationist mode of production' theory proposes that conservation is both a means and a pretext for appropriating nature by intertwining wildlife and biodiversity with capitalism (Brockington and Scholfield 2010:552; Garland 2006; 2008).

The presumptions nested in such metatheory once again do not hold up well under scrutiny. It pronounces a reified kind of conservation, sinister and omnipotent. I found instead that the visage of conservation as embodied by environmental non-governmental conservation organizations (ENGOS) depends on social and macro-political context, and it also varies considerably on a case by case basis. In the theorists' case studies that were oriented towards the mode of production, big ENGOS capitalize on land tenure laws and the vulnerabilities of land users in Africa; what is most salient in my case studies is the position of these organizations on the map of nature politics at multiple levels, from local to national governments.

To elucidate this, I find it necessary to steer away from the mode of production mindset, which frames the problem at the macro-institutional scale and orbits solely

around capitalist entrepreneurship. This analytical mode yields bundles of abstractions that have to be unpacked to expose the concrete relations people entertain with the teeming worlds around them. Whereas conservation is said to buy, produce and sell virtual nature, in Chapter 2, I detail the actual transactions that entangle a particular conservationist bureaucracy with landowners in individual real estate deals, one at a time; I later expound on the cumulative result before comparing it to a completely different set of transactions between another Nature Conservancy and a similar ranching community plunged into the same kind of ecological and social circumstances across the border in Montana. But throughout I also focus on how people express and experience interspecies relations. Those run the full gamut from a discipline of co-existence founded on accommodation to the radical segregation of relations for human gratification alone.

As for omnipotence, the Nature Conservancy of Canada (NCC) had entered forbidding territory in 1997 when its southern Alberta project started. The Tory Alberta Minister of the Environment of the time scaled down the Special Places protection program on the pretext that putting limits on land development was not an option: conservation is bound to “sterilize” the land, he concluded (Nikiforuk 1998a).

Across the border, the twin community took charge of conservation at the bidding of The Nature Conservancy (TNC) – one of the worst culprits in anthropological conservation theory (see Chapter 2) – which donated afterwards a substantial endowment fund to finance local stewardship initiatives. The community board thereby built an alliance at the upper political echelon with a state senator who brokered the transfer of a large corporate estate into community-managed land. As community spokesmen put it, a “coalition of the unlike” was born (Burnett 2012). On the Alberta side of the border, however, the micro-

and macro-layout of nature/grass/animal politics was diametrically different. Under the guise of community and inclusivity principles, a faction gained prominence, gagged potential dissenters and subverted conservation-oriented initiatives while at the same time adopting a discourse *identical* to that of the Montana community – hence the explicit theme of ‘cosmetics’ in my thesis. Although the NCC intervention had afforded the local ranching economy a second lease on life, it gained no ideological leverage whatsoever and as principal landlord has yet to influence the interspecies mindset of the local people leasing its ranches. Those who were bovine supremacists remain convinced as ever about their prerogatives, and those who ranch uneventfully alongside wildlife have yet to be recognized by the NCC in a meaningful way.

The big international ENGOs have not been granted a universal license for defining what fauna deserves protection or what biodiversity is valuable. Try as they may to set land aside for conservation, other people respond in kind, like the militants who, in January 2016, seized and occupied the Malheur National Wildlife Refuge in Oregon in defense of local ranchers. My case studies attend to a more subdued kind of undercurrent. Several chapters inventory local sources of legitimacy: the ‘Law of the Land’ that entitles anyone to destroy pests regardless of charismatic status; democratic principles that dictate that wild places must be made accessible to all-terrain vehicles. There are also those who value kinship with that which is wild – not *the* Wild as I will explain later. And this is aside from outliers in ranch country whose ‘Law of the Wild’ calls for radical ‘rewilding’.

The making of the environmentalized subject

In his theory of ‘environmentality’, Arun Agrawal (2005b) describes subjects who have

undergone a radical transformation:

I use the term *environmental subjects* to nominate those who thus care about the environment. More precisely, environment constitutes for them a conceptual category that organizes some of their thinking: it is also a domain in conscious relation to which they perform some of their actions” (Agrawal 2005:165).

Throughout Agrawal’s lengthy exposé, the notion of the environmentalized subject, that is one who has learned to care for the environment, connotes the *emergence* and *creation* of a phenomenon (ibid. 97, 165, 170, 171, 226). Cognition is its wellspring and, as the above description shows, it proceeds in precise and orderly fashion. The transformation begins when the candidate gets introduced to the conceptual category ‘environment’. The category thereafter *organizes his thoughts* in a new way. His actions he then *performs* in conscious relation with the conceptual domain. And in due time, the candidate morphs into a subject that deserves to be nominated as someone who cares for the environment. And that is just for the mainframe. The mind of the environmentalized subject keeps receiving outside beliefs and discourses that “colonize the very imagination” (Agrawal 2005:168, 170, 225).

This is a boon for social scientists delving into the genesis of subjects. The process has “the potential to lead analysis toward the *mechanisms* involved in *producing* differences in the way subjects imagine themselves” (Agrawal 2005:171 *italics mine*; see also Agrawal 2005: 98, 125-6, 169, 172, 217, 221). Mechanisms are thereby the avenue of predilection for social scientists dedicated to decrypting how the operation of the social machinery drives the cognitive wheels in everybody’s head.

Yet the formulation is also reminiscent of a Frankenstein experiment. Should its

internal wiring begin to spark on a dark and stormy night, the creature might break out and go on a rampage. Thankfully, however, it would not get very far for the social engineers in charge have already foreseen this kind of mishap. Government technologies ensure that “subjected people are also subordinated” (Agrawal 2005:165). And the penultimate mechanism entices subjects to become accomplices to their own subjugation: the panopticon is

...a machine ‘to train and correct individuals’ and a laboratory ‘to perfect the exercise of power’ (Foucault [1975]1979:205-6). Here then is a mechanism – the gaze – that acts as a sorting device (Agrawal 2005:171).

Sorting what? And who? Gazed-upon subjects from subject-gazers? Dissenters from accomplices? Subversive ideas from conformist behaviors? This kind of theoretical tinkering with the mental superstructure has gone astray, and I defer to Tim Ingold when he rejects the notion

...that the thoughts and actions of living beings are orchestrated and controlled by programs assembled from particles of transmitted information carried around in their heads (Ingold 2013:3).

Such language, he deplores, “belongs, in the annals of the discipline, to a bygone era” (ibid; see also Ingold 2004:216).

But Agrawal parries the criticism when he asserts: “I highlight the role of practice and regulation. I will show how [people] differ in their beliefs. . . and how these differences are related to their involvement in regulatory practices” (Agrawal 2005:166). What an entirely different language he uses this time about people making coherent choices,

whether they decide to adopt collective rules *or* to defy them. Yet in rapid succession, Agrawal keeps rearranging what appears like a troubled marriage between body and mind: ‘actors’ go about “incorporating into their mentalities new propensities” while concurrently “only a very small proportion of one’s daily experiences undermine existing understandings, over a very short period” (Agrawal 2005:167). It is a wonder that a subject trying to hold body and mind together under the same covers could get any sleep.

I take this to be a roundabout way to speak about co-constitutive process, which Tim Ingold at first described as “mutualism of persons and environment” (Ingold 1992:40). Discarding dualist approaches, of mind vis-à-vis body and persons vis-à-vis environment, Ingold foresaw a participatory kind of world-making (2000:20). Free of “operations of the mind impregnated by culture” (2004:218), this process engages instead with “the dynamic properties of relational fields” (2004:220).

“What I offer”, writes Tim Ingold (2004:220) about the orthodoxies of anthropology and biology – specifically about evolution – “is something different, not a recycling of tired preconceptions but a genuinely new way of thinking about human beings and their place in the world”.

An exciting manifesto it is, but the very allusion to a worn doctrine that endures attests that the coming-of-age he advocates confronts a history of ideas his protagonists defend vigorously. Hence, there is nothing immaculate about the effervescence of this or any other relational field. And if it signals that subjects do not just emerge *with* or carry in their head colonies of transmitted precepts, where does that leave my notion of landscape as way of engaging if people are thus bereft of culture? I have no metatheory to offer on the subject. Of course, the treadmill of encounters informs convictions, and people often act in

concert. Yet, about-faces do happen. I take from all this that there is no relational *terra nullius* to annex, in one's head or on a landscape; also no freestanding essentialist concepts apt to effect a propitious landing; and especially no tenable delineation between subject-makers and subjects-in-the-making. What is unmistakable, however, is the social tension between stasis and emergence that could turn the place into a battlefield – or a lovefest – but usually somewhere in the middle is a gravitational field of social connections fraught with attractions and *resistance* (Agrawal 2005:167, 170). As the latter attests, allusions to mechanisms toying with subjects are difficult to circumvent. Hence for my case studies I re-calibrate the lens of politics, shifting from the individual subject towards the collective endeavor of place-making.

The making of place

I will return to the theory about place-making in Chapter 8. But for the moment I will spell out my own definition. Place-making is first about brokering reality and knowledge; second, it is about the concrete arrangement of landscape, sorting out what to keep from what must be discarded. As Mary Douglas ([1966] 2013:36) famously put it, dirt is matter out of place. As in sweeping, then, the motions of place-making bring about the kind of order it is supposed to have.

Place, then, is landscape pregnant with moralities – many of which do not get to see the light of day for very long. Therefore, like landscape, place is a way of engaging, albeit one that recruits people first and foremost, as protagonists for ordering its relational and concrete constitution. Whereas Bruno Latour (1993) evokes a Parliament of Things, place-makers, I submit, monopolize its House of Commons, place being purposefully people-

centered, anthropocentric, ethnocentric, and so on in ever smaller circles (see Chapter 8).

On the register of landscape, my ethnography seeks to elucidate how people and scores of other entities partake in what is happening while participating in knowledge-making. In the latter sense, it is also part historiography of knowledge-making. And on the register of 'place', I document how people engage with each other *about* what is going on, and how they proceed, at various social scales, to broker knowledge and sort out realities among themselves, which, in my case studies, concern its many natures. The two registers are not separate but nested, and in terms of the involvement of the respective bodies politic they differ considerably.

To illustrate the scope of these registers, I point out a contrast between expectations derived from place-making and what is actually happening in the landscapes in question. The recurring theme in ranching and conservation is the problematic interface between human and nonhuman spheres, to sort out what entities belong specifically in one or the other, and designate those that can share the same space. Private ranches are of course part of the sphere marked out for human handiwork, with domesticated plants and animals, machines, and so forth. Conversely, the vast adjacent landscapes are designated as either national park, forestry reserve, or other public lands, all part of the sphere where wildlife belong which is expected to remain relatively unscathed – although some of these landscapes are designated as cattle range too. Such is the intended spatial ordering and attribution of status for belonging in terms of the respective makeup of place. In terms of what is happening on landscape, however, human presence on ranches has continued to be negligible and intermittent whereas in wild places it has augmented exponentially, sometimes overwhelming wildlife with human traffic, often motorized. It is hardly a

coincidence then that domesticated plant species colonize wild places (transported by people and vehicles), thus becoming invasive noxious weeds, and wild animals infiltrate private ranches, becoming pests or lethal threats in the process. And beyond the spatial sphere that influences the attribution of status, there is the variability in the ways that entities are apprehended, including in science-making (more on that shortly).

Landscape and place are therefore wrapped in what Anne-Marie Mol calls ‘ontological politics’ (Mol 1999:74-5). The character of what happens is defined in terms of the circumstances where it is happening. Thus what passes for reality is always mediated, which, in effect, multiplies it, hence the plural in which Mol poses *multiple* ontologies.

The challenge inherent to the interface, then, is to somehow reconcile places that hold different realities into an integrated landscape of joint happenings (recalling that landscape and place are both ways of engaging), all of which is bound to be very unsettling. It is the controversial part of political ontologies that rattles the focus on a single reality, what Mol (1999:76) refers to as the “monopolistic view of truth”. The unsettling of this monopoly also exposes contradictions in the attached epistemologies. In this case, it sheds light on the meanings/realities underlying the notions of modes of production, adaptation and their respective entanglements with capitalism, as well as the kind of caring for the environment that environmentalized subjects get inducted into.

So, what norms and moral precepts get to rule? And according to whose authority? For Mol (2002:166) the question is “about *who* is being put, or should be put, in the position to decide what is good”.

In my Alberta case studies, the locus of authority is seldom explicit – whereas it was spelled out clearly for the Montana coalition of the unlike. It is rather the stuff of

conjecture that emanates from some dark recess of place: the “Twilight Zone”, one biologist called it when he was confronted with its invisible protagonists (Van Tighem 2013a).

Real wolves travel by helicopter

In his wonderful little book, *The Homeward Wolf*, Kevin Van Tighem (2013a), retired superintendent of Banff National Park, relates his experiences with wolves early in his biologist career in the area of Waterton Lakes National Park, my field of study. But he has more to say about the relations ranchers of the Alberta Foothills had with wolves and also amongst themselves and towards other people – like himself – who might possibly interfere with their business.

In a nutshell, after wolves recolonized the southwestern corner of Alberta in the early 1990s without casualty on ranches, concerned biologists and environmentalists tried to pre-empt the next round of extermination by offering a compensation package to ranchers. Several public meetings were called to announce this, and the organizers were astonished soon afterwards to hear that their proposals had been completely misconstrued. The word had gone around that environmentalists were bringing wolves back from Montana by helicopter. And after the first inevitable loss of livestock to wolves did occur, the rancher who had been offered a very generous compensation declined, under pressure from the detractors of the program. Environmentalists, it was said, were buying the silence of their victims one by one. Van Tighem and his colleagues concluded that public consultations did not work but it seemed much more promising to cultivate individual relationships between some of the practitioners and the parties advocating a more tolerant regime of interspecies relations. The wolf packs in the area were

nonetheless decimated again by the late 1990s regardless of their particular histories of killing or not killing cattle. Granted, other wolves soon re-colonized the empty territories.

What Van Tighem and his colleagues had witnessed was not the kind of persecution that is destined to happen because of the atavistic antagonism of paradigmatic ranchers, although it has long been the norm. The Montana ranching community across the border decided otherwise to refrain from killing wolves indiscriminately and adopted other precautions instead. And the same goes for grizzly bears: while ‘bear problems’ were escalating in Alberta and problem bears were multiplying, the Montana initiative reduced conflicts by 95% within a decade (See Chapter 7).

Rather, what Van Tighem had witnessed was the ongoing exercise of influence to secure the endorsement of a particular moral regime for specific interspecies relations. Granted that wolves have been systematically persecuted on the western part of the continent until very recently, the map of relations with wolves has now become very complex. Wolves that in the early 1990s had infiltrated south of the 49th parallel from British Columbia, getting along with *some* human communities in Montana, but becoming ‘problem wolves’ again upon returning north – without the help of helicopters. Problem grizzly bears are also said to be returning from Montana to recolonize the southwestern corner of Alberta. Then, again, moral standings go both ways across the border, good and bad, and ontologically species can appear genuine or not. Wolves in the U.S., for instance, are not equally protected by law. The article 10(j) of the Endangered Species Act (ESA) states that the real wolf (sub)species of the Greater Yellowstone ecosystem is the Northern Rocky Mountains wolf, *Canis lupus irremotus*, whereas the current substitute, the northern timber wolf *Canis lupus occidentalis*, which now makes up most of the population, is

considered experimental and non-essential. These aliens with foreign pedigree are therefore conveniently expendable whereas a reinstated *Canis lupus irremotus* would be untouchable, all of which, of course, constitute crucial distinctions in the negotiations about a place for wolves in these international landscape affairs.

As for the locus of authority over classifying animals and people, it is not prearranged nor is any entity predestined to be a subordinate subject or subject-maker. This is not to minimize the overarching economic/political factors elsewhere that preclude the exercise of any rights to that effect. In the context of my case studies, there is no ascription of the sort, nor is it predictable to which camp anyone belongs, for ranchers, scientists, bureaucrats, policy-makers, conservation officers, activists, politicians, and so forth, are just as likely – and certainly not bound by social position – to be instigators or at the receiving end of place-making disciplinary actions. But reaching across both ontological and epistemological axes (see below) are pathways where moral alignments, joining people from all walks of life, mesh with scientific disciplinary clout. And to make sense of courses of events like the above, it is necessary to discern how ecological moralities, multiple too, align with disciplinary powers. In other words, it is sometimes possible to trace the moral compass back towards the source of momentum of place-making. But discerning these alignments does not necessarily reveal *who* collectively is in the position to decide what is good.

The politics of what

As illustrated above, the relations of place-making are concerned with negotiating or imposing authority over what is happening on landscapes. And, as mentioned earlier, with

brokering reality and knowledge, place-makers – those with clout – attempting to define and enforce rules accordingly. And since many definitions circulate about the nature of these happenings and of the entities partaking in them, science, in most milieus, is represented as the paramount arbitrator and curator of reality. Scientists in any case participate directly in the subset of ontological politics that defines *what is what*. In that respect, Mol (2002:viii, 32, 33) explores the way science “*enacts* the objects of its concern”. I emulate this approach by presenting fact-finding records of scientific knowledge, first about the grazing relations of plants and cattle (Chapters 1), and about the nature of bears (Chapter 5) and wolves (Chapter 6). Epistemology, on the other hand, “is concerned with reference: it asks whether representations of reality are accurate” (Mol 2002:viii). Both are nonetheless wrapped together such that, as Latour and Woolgar (1979) demonstrated, “laboratories secrete reality” (Mol 2002:33). I propose that agricultural research stations that have operated for over half a century studying the effects of grazing do the same. And so does field ecology, with biologists interpreting the behavior of wildlife to fit a broad diversity of theoretical and methodological frameworks. Thus, at the same time that I underscore the variety of scientific reports along with parallel ones based on the practical knowledge of practitioners, I also record other streams of ‘becoming’ that its objects, be it grass, cattle, bears, or wolves, and their respective bundles of ecological relations, adopt as patterns of their own. Scientific reality may well be enacted, but they, the *others*, do not just follow the discipline of disciplines.

O Science, O Thou Who hast cast Thy splendor

The legitimacy of the Nature Conservancy by its own account is that the conduct of its mission is science-based. I did set out to find out how science informs its policies and found out there are many variations on that scientific theme to select from. And I keep a close watch for the NCC's theme of predilection, what I will refer to as 'nativism', for its quest to restore the original array of native species. As it turned out, the organization eventually retreated and cherry-picked choice bits of knowledges according to which were most expedient.

For a preview:

The roots of grazing

Chapters 1 and 4 are about the uneasy relationships between native plants and domestic grazing animals, especially uneasy given the ways that scientists and practitioners enact them in their respective milieus. I spell out the insights of range science elaborated at the regional research station, and I observe on the range the effects of practices that run counter to received scientific wisdom. The expert committee of the NCC is divided over the possible courses of action. Between experimental evidence and practical outcomes, its commitment to science is in the balance. The case studies of Arun Agrawal (2005a) in the communally-managed forests of northern India demonstrate the value of monitoring programs, but here the NCC is more preoccupied with honing its conservation discourse than tracking the ecological performance of its own ranches.

A noteworthy nexus of cooperation is the terrain of 'riparian areas', the analog of Agrawal's conceptual category 'environment'. Its importance having been recently discovered, an ENGO called 'Cow and Fish' was created to instill public awareness about

this vital part of rangelands where most species of plants, invertebrates and insects congregate and, of course, cow and fish get to meet. A small revolution on the range it has been, and a public relation stroke of genius it was to introduce fish as the main protagonist to cow. Ranchers are learning how to care for the areas in question, with the help of subsidies, and also as a product of coercion, given the poor track record of ranching and the tightening of government rules over water quality.

The beef about bones

Unlike fish whose presence was finally detected in a way that recognizes their importance, some other wildlife get a very different kind of reception upon physically returning to the range. Chapter 5 is about grizzly bears. One of the most influential scientific work on the subject of grizzly bears in Canada is a forensic account of bear attacks. In the statistics of the Alberta Fish and Wildlife Division, reports of bear sightings are categorized as ‘occurrences’ that go under one of the headings for public threat. Scientific studies of bear habitat in Alberta designate ranches as ‘non-habitat’ and ‘ecological traps’ for grizzly bears. It is now official policy to remove attractants and enforce segregation in every possible way. To deal with the high incidence of property damage committed by bears, grain storage bins are reinforced or else replaced with heavy-duty steel shipping containers. All hands, ranchers, conservation officers, biologists, welders, truckers, backhoe operators, carcass composting technicians, converge to eliminate carcass bones from landscapes and to garrison ranches against intrusion. Unfortunately for this campaign, rangelands on private ranches also grow a variety of plants and insects that make up the bulk of the bears’ diet, and barbwire fences are not bear-proof. What bears are doing is returning to their

primary habitats of yesteryears.

The door of perception

Yet, as mentioned earlier, bear problems have faded in some of the case studies south of the border where the deployment of technologies (to fence off depredation hotspots like calving fields and composting bins) follows the principle of ecological connectivity (Chapter 7). It is also longstanding practice on the Rappold ranch near Dupuyer in the heart of Montana grizzly habitat to ensure that the bears are well fed by bringing carcasses of dead livestock to the high country and in the country below opening the door for bears to access grain in its granary. It is much cheaper and less stressful on people, equipment and buildings that way, decided the father of the current rancher fifty years ago. There has been nothing remarkable to report since then, other than that the resident cattle and bears are thriving at very little cost. On the other hand, many ranchers in the same area feel besieged by bears, and the reopening of the trophy grizzly bear hunt appears imminent.

What transpires here is that the decisions to fortify a landscape or connect it with multispecies pathways, have nothing to do with pre-given biological realities. Rather, a landscape gets set up to enact particular kinds of nature. And not only discursively: these are choreographed in concrete ways with the collaboration of knowledge-makers partaking in one moral alignment or another, usually in line with what happens to be *de rigueur* at the time. Whether a kind of animal is bad or good first gets framed by place-makers who select particular pieces of knowledge to suit their purposes, with an array of chosen experts who, like “practicing metaphysicians” (C. Thompson in Woolgar, et al. 2008), invoke evidence like forensic records, dangerous occurrences and ecological traps artifacts.

And it follows, as corollary, that to every ontological politics correspond certain histories of enactment. Chapter 7 reviews the history of conservation at the nearby national park, which began with the elimination of inconvenient wild animals to make more room for those valued by sportsmen. Most of the fiends eliminated have since been recognized as icons.

Hence I write about my research as an ethnographic account in part only. I also have recourse to other genres of written accounts, like in historiography, to report on how landscape was devised and how places were made both for ranching and conservation. Writing about the predicaments of ranching, anthropologists Brogden and Greenberg (2003:231) point out that ranchers are vulnerable to the discourse of environmentalists that ‘reterritorializes’ their livelihood. They argue that ‘pluralistic politics’ operate to reassign ‘resource access rights’, and consequently dictate how in “this interface between state and civil society, some actors achieve voice and some do not” (2003:291). But case studies here and associated histories show that the assignment of legal rights to access may be only a small part of the explanation – especially here where conservationists own the landscape and yet remain mute in the policy-making sphere. To find out why this is happening requires unpacking abstractions like ‘state’, ‘civil society’, and science. What games are being played therein can perhaps be revealed, especially along the lines of an ecological morality play (See Chapter 8).

A purgatory for dark angels

Chapter 6 is about wolves: scientific accounts and place-making about wolves are even more tightly wound together and yet polarized. One prominent wolf biologist in the U.S.

deplores the trend in the scientific literature that alternately sanctifies or demonizes ‘the wolf’. Some scientists emphasize the apex role of these large predators in the cascade of ecological effects, especially to prevent the irruption of wild herbivore populations. But other effects are manifest in the ways that prey are cautious about remaining in certain areas of predilection. Hence the role of keystone predators, who by their mere *presence* are potentially vital to landscapes populated by large herbivores. Other scientists, however, emphasize the necessity of culling the wolf *population*, from 25% to 40% yearly (Boyce 2008), to keep it in check, in some instances even removing them in a way that is compatible with the conservation of species. Conservation is thus understood in various ways, sometimes relationally, as a means to maintain the ecological *functions* (of trophic cascades, food webs, ecosystems, etc.), sometimes to keep alive particular *inventories* of species in special places set aside for custody.

The friction is therefore at the landscape interface with other kinds of important functions and animal inventories. A high profile research project conducted in the Alberta foothills concluded that an unexpectedly high proportion of the diet of wolves was beef (see Chapter 6). The lead researcher, a world leader in conservation biology and now a spokesman for ranchers, warns that “wolves are the real culprits and have been the biggest problem as it relates to beef producers”.⁹ The study was conducted mostly through remote-sensing technology (tracking radio-collared wolves with Global Positioning System (GPS) data); the study did not record any other type of landscape activity nor did it inquire about the ways ranchers engage in landscapes. After wolves were collared, researchers

⁹ See: <http://www.albertafarmexpress.ca/2015/12/07/wolves-filling-up-on-cattle-in-southwestern-alberta/> accessed January 16th 2016.

showed up mainly to ascertain that clusters of GPS readings corresponded to the leftovers of a carnage. This way, with the help of forensic evidence they apparently verified what wolves were really doing.

At the same time, another study was conducted by wolf biologists from the U.S. at the request of the *same* community of ranchers that involved them in the implementation of direct surveillance. Over several years, the study monitored the effects of a particular kind of human presence (a mobile type of surveillance) on the incidence of depredations, demonstrating that it was possible with a modest investment of labor to deter wolves from killing and harassing cattle (see Chapter 6).

As for the subsequent making of place vis-à-vis wolves in the region, the scientific report that demonstrated that wolves were inveterate cattle killers has become an enduring reference. The community project of surveillance, on the other hand, was discredited and shelved. And when the municipal council hired a local cowboy to track and record the whereabouts of the wolf packs, the chief biologist at the regional Fish and Wildlife Division notified the councilmen that, short of getting a permit, the ‘research’ (horse riding with a notebook in this case) could not proceed. Permits for hunting, trapping and snaring, however, were readily available from the same bureaucracy. And those with the permission of landowners did shoot wolves during that winter on the same paths where the rider armed with a notebook was officially prohibited from recording their whereabouts.

Given this kind of animal politics, the NCC is in something of a bind while serving as a local landowner. This is the case unless it fully utilizes the versatility of science-making when confronted with the imperatives of place. That is what one upper echelon NCC

spokesman demonstrated after consulting with the NCC in-house biologist, who explained that “wolves are by nature ephemeral” – those were the exact words. The organization allows for (or turns a blind-eye to) the killing of wolves on its ranches.

Like this chain of events illustrates, interventions in the affairs of place go hand-in-hand with science-making in ways that sometimes betray epistemic gate-keeping. Yet if it can also be apprehended as an offshoot of the prevalent ontological politics, science-making need not be dismissed as its artifice. It rather points out that science is a wellspring for “new ways of *doing* reality” (Mol 1999:75). ‘Wolf’, for instance, has many incarnations, as do bear, cow, fish, grass and so on. With knowledge mediating reality that way, science also has multiple constituencies for each kind of place, with fellow scientists, ENGOs, policy-makers, bureaucrats, journalists, and the public at large, either assenting, lamenting, dismissing, or quarreling about its makings.

Looking for moral compass

This introduction has been a lengthy briefing for the historical and ethnographic accounts to come. It serves also a warning that I disassociate my work from the assumptions discussed earlier about ranching, conservation, and their respective official histories. I seek instead to present several points and counterpoints to the discourses and practices concerning particular landscapes and places. For that I go rummaging for moral compasses and other clues, while trying to get a glimpse of what horizons lie ahead. The reader must be aware that, with over two decades of ranching for a livelihood under my belt, I also happen to be very familiar with the immediate milieu of my ‘fieldwork’ – which used to be home and, to an extent, still is. Yet, I am not using that *a priori* to wield authority in

ranching matters. Rather, I like to think I keep my distance, having approached it anew after much time spent elsewhere, with ranchers, conservationists, and pastoralists of several continents. Upon returning, I have kept looking over my shoulder to sight again (or listen to) what I thought I had seen or heard before. In that respect, I follow the formulation of Tim Ingold (2008a:84) that the anthropological attitude lies in the “sideways glance”.

So what is in store for the flagship project of the Nature Conservancy of Canada? The effervescence of what is happening on ranching landscapes shows no sign of abating – in the U.S., some ranchers and their advocates have now taken to occupying the likes of wildlife refuges, ostensibly to assert their legitimacy. The same goes for the fractious centrifugal forces threatening the social integrity of ranches: they are going apace towards the fragmentation of family units, perhaps to coalesce again later under a different corporate banner. But about the political clout of place-making, there are now hints that the balance of power in Alberta is shifting from the rural to the urban sphere for deciding what is good for landscapes, especially those owned by the state.

I invite the reader to momentarily suspend what Ingold (2013:8) refers to as the “anthropological machine” (see Agamben 2004) churning out meta-theories and to go on a tour of a few landscapes and places. After this long prologue, I will provide more room for describing and discussing what landscape dwellers, conservation champions, and science-makers are doing.

Part I A Livelihood Subtext

Chapt 1 The ranching livelihood

1.1 What is ranching?

Conceptually, I will approach ranching foremost as a livelihood. But as a matter of dialogue with existing theory, I will use analytical tools that categorize livelihoods as modes of subsistence and modes of production (Ellen 2003 (1994)). Also, whereas the analysis of a livelihood assesses the means of its economy to sustain and reproduce itself from the perspective of its unit of production, in this case the nuclear family, I project beyond that to encompass a larger entity, using 'community' as a convenient concept, to convey the idea that the economy of rural communities in many parts of the world, and their respective collective identities, are built on livelihoods like farming, pastoralism, or ranching. In the context of the present problematique, I contrast livelihood with conservation, which, as a form of relation with the environment, is the flipside of the extraction exerted by such livelihoods and the attendant environmental transformations they impose. Granted that conservation, as of late, has also been a source of income for producers, it is foremost an endeavor and a social movement that aim to correct trends of environmental degradation. To be significant, a change of protocols has to apply on a large scale, landscape, bioregional and beyond. Given that rural livelihoods are embedded in longstanding social and ecological relations, however, attempted change can come at great personal and social cost, if put into effect by individuals in isolation. Yet changes in the context of an economy that is based on autonomous units of production – namely ranches – are operationalized at the

individual level to begin with. And the relationship with one's immediate living environment – in this case a home ranch – is obviously a very personal affair that confronts everyone privately. I will attend to this tension between collective and private spheres by exposing a vast spectrum of personal responses and how these may converge, or get weeded out, and at any rate jostle one another into a collective – albeit not necessarily common – profile that undergirds the 'sense of place' of a community.

I do not have as an objective to engage in a semantic debate about what constitutes ranching, pastoralism, and agriculture. In parts of the world, units of productions like 'stations' in Australia, 'farms' in southern Africa, or 'estancias' in Latin America have the same paradigmatic ranch profile I define as ranching here. Rather, I intend to make distinctions that I deem to be essential for understanding the problems at hand, and for the sake of helping the reader navigate throughout my accounts, for which clear labels charting my theoretical course are necessary. I otherwise have found that discussions about ranching invariably begin with many presumptions about what it entails, and thenceforth the sources of confusion multiply.

Ranching notoriety: the good, the bad, and the ugly

There are two distinct kinds of literatures about ranching. One is rather dithyrambic, found in popular western history, of course, but also in the works of academic researchers, historians, geographers, ecologists and others, who study the kind of ranching done in the developed world (see for example Knight, et al. 2002; Starrs 1998). Another kind of literature denounces ranching especially for its destruction of tropical forests in the

developing world and its persistent colonial excesses, beginning with the displacement of earlier land occupants, Amazonia in Brazil and the Chaco in Paraguay being high profile cases (Fearnside 1997; Hecht 1985; Hecht 1993). One must be very aware in reference to ranching that specifying where it is taking place makes a big difference in terms of reception. This begs the questions: does research in these matters apply different criteria according to geopolitical hemispheres? Other than involving livestock, in what respect are these forms of ranching similar? Conversely, how are they different? Is it a matter of ecology and livelihood practices? Or is it a function of their respective historical trajectories as economies that spearheaded colonization in various continents? To that effect, ranching livelihoods have become more or less integrated socially with the economies of earlier inhabitants depending on region. In North America, while the economies of indigenous nations in the U.S. typically collapsed with settler colonization and many nations were displaced, some, like Navajo, Choctaw and Blackfoot have participated for a long time in ranching economies (White 1988); the same goes for several 'Indian reserve' communities on the Canadian northern plains, and for Tsilhqot'in (Chilcotin) First Nation in British Columbia. In much of Latin America, on the other hand, the confiscation of indigenous lands also occurred at the onset of the colonization of New Spain (for example Sluyter 2012:37, 59) but it has continued apace on the southern continent, especially in Brazil, and it is presently unfolding in the Paraguayan Chaco (Hazelton 2011; Killeen 2007; Redwood 2012; Romero 2012). Variations on these patterns have unfolded also in Australia and Africa. Several factors come into play in the way ranching livelihoods have diffused, I submit, but the confusion about the nature of ranching also derives in large part from using the same vocabulary to describe very distinct livestock economies. I will examine these

contrasts, especially in regard to ecological relations. Some forms of ranching are highly transformative, resorting to agriculture, and some were very destructive, having destroyed forests, while others tend to be minimally disruptive; then again these types have perhaps existed at different times on the same continents, or co-exist still.

The habitus nexus

To convey the implications of this variability adequately, I will clarify when necessary terminology that otherwise passes as self-evident. In that vein, there is hardly a profile of cowboy *tout court*, for example, that fits a universal profile for ranch work. Beginning with distinctions in praxis, or work 'habitus' as Bourdieu put it (1990), it is apparent that the term 'herding', for instance, denotes very different activities whether it is undertaken by cowboys or pastoralists, inasmuch as very few cowboys have ever herded. 'Day herding' was done occasionally in the 19th century by 'cowpunchers' of lower status during intermissions in the long cattle drives (Abbott and Huntington Smith 1939). Nowadays, very few tolerate the drudgery of 'day herding', namely the everyday daylong supervision of grazing *in situ* or on a slow trek. However, most professional cowboys are adept at 'rodeos' of one kind or another. Cowboys compete in rodeos for such championships as the World Series of Rodeo in Las Vegas. By contrast, for Hispanic *vaqueros* a *rodeo* is a ranch work-related event organized for gathering cattle – *rodeo* stems from *rodear*, 'to surround' in Spanish. Also, ranch cowboys (seldom those who compete professionally) 'round up' cattle on ranches (as stockmen and drovers 'muster' on Australian stations). For the most part, these events are occasional – they are indeed *events* rather than daily occurrences –

and they are intended to prepare cattle for shipping or to move herds to seasonal pasture, or to assemble livestock yearly for the specific purpose of branding calves. Even in those instances, it is safe to say that as a rule, when a cowboy or a rancher wakes up in the morning the ranch cattle are grazing while scattered at large, while, conversely, when the pastoralist strolls into the corral, the kraal or the *boma*, in the morning, his livestock are ready and waiting to go grazing as a cohesive herd. “Cow knows best” is an old adage I have heard many ranchers utter, whereas the pastoralists I spent time with considered that their animals would be utterly helpless without a herder seeking the best sites to graze. Therein is a fundamental distinction between ranching and pastoralism and their respective interspecies ecological relations. As will become clear, the ‘ecological habitus’ of each type of livestock economy has implications for their compatibility with conservation, especially in regard to distinctive notions about the proper place and status of all actors involved as well as the behavior expected from them.

Nevertheless, cultural geographer Terry Jordan, in his authoritative ‘North American Cattle-Ranching Frontiers’ (1993), refers to the many historic permutations of ranching as ‘herding systems’. For the above reasons, I emphasize again that ‘herding’ is hardly an appropriate term for describing these early livestock-raising systems where cattle were gathered usually once or twice yearly and remained unattended in the interim. For that matter, semi-feral cattle in the early days of ranching were hardly ‘raised’ at all but grew instead with no intervention akin to animal husbandry.

A disputed parentage

As discussed in the introduction, Tim Ingold argues that ranching *evolved* from and improved upon pastoralism rather seamlessly since ranching ostensibly emerged from the *breakdown* of pastoralism, more specifically the indigenous pastoral economy that was ailing on many fronts, especially ecological (Ingold 1980:122, 256, 258). I will make a contrary case, however, arguing that in most instances worldwide ranching grew out of agriculture although agriculture and pastoralism have characteristics in common that subsided with the advent of ranching. And whereas Ingold's assessment may fit well the reindeer pastoralists situation in the cases he studied directly, his theoretical extrapolations do not universally apply, certainly not his proposition that ecological prospects improve from pastoralism to ranching simply on account of a change in social and ecological relations of production. Of course, agricultural practices share specific aspects with pastoralist ones – namely physical closeness with domestic animals and the practice of herding. But historically, those who became ranchers were mostly of agriculturalist origins, and it is back towards agriculture that ranching practices have since gravitated in order to compensate for its failings. Furthermore, I argue that the recovery was not seamless, nor was it an ecological panacea.

The initial breakdown of interspecies relations far pre-dated the advent of ranching and really began with the alienation vis-à-vis predators at the very onset of agriculture and pastoralism. On the one hand, this rupture was social, instilling deep-seated fear and loathing towards animals that were dangerous. This, however, was nothing new to hunters and gatherers. Rather, what was more important was that large predators threatened

domesticated entities whose existence derived from human intervention and were thereby subject to proprietary claims. Nor were these claims limited to property relations amongst humans *about* the world of nonhuman entities. They rather redefined the latter altogether and recalibrated interspecies relations directly. Thus when wild animals and insects began consuming crops, they became ‘pests’ vis-à-vis plants invested with human labor. Large predators for their part became an additional nuisance, as they were liable to become thieves, wantonly stealing and slaughtering animals that were under human care, often born under the same roof as their caretakers and quite literally the upshot of midwifery. Besides, livestock eventually became a paramount measure of wealth, with the word ‘cattle’ stemming etymologically from the 13th century Anglo-French word ‘catel’, a term for ‘property’, and before that from old French ‘chatel’ which carried the same meaning as chattel for assets of movable property.¹⁰ On the other, hand the rupture was ecological: agriculturalists, like pastoralists, had set themselves up for a practical challenge once they had disrupted the ecological relations between prey and predators at the onset of these economies, as protective measures were mounted against losses of animal property. To some extent, agriculturalists circumvented this by introducing animals in a closed loop of production that extracted crops from highly modified land, working *and* fertilizing it with animal output, adding to the loop or subtracting as needed (McWhiney and McDonald 1985). Granted, agriculturalists also herded animals outside these perimeters, as did pastoralists routinely, but ranching eventually released these animals completely from the closed loops of agriculture’s ecological relations. The effects of predation still had to be replicated, but that had to wait until ranchers realized there was no endless sea of grass out

¹⁰ See: <http://www.etymonline.com/index.php?term=cattle> accessed July 2nd 2014.

there and had to internalize the externalities of their own growth, as economists explain it (Demsetz 1967). The concept of ‘carrying capacity’ was adopted in range science to help administer vast expanses of grazing lands where domestic animals had been released. It is nonetheless noteworthy that this form of regulation was implemented on North American rangelands during the 1900s (Evans 2007a; Evans 2007b; Sayre 2003), not only several centuries after the diffusion of ranching practices in North America, but also after the excesses of the open range era had been curbed. Exclusive access to pasture did not immunize ranching against overstocking either, although it made it possible to control it. Chronic overuse has continued regardless on many private ranges (Worster 1992), just as regulatory problems have been a constant worry amongst communally-minded pastoralists (Turner 1999). Predators posed a problem that required a more immediate solution.

Getting stranger and stranger

Overall, at this social and ecological nexus, the conditions for the emergence of ranching were fulfilled with the completion of a breakdown in two movements, which I adduce as evidence of interspecies *estrangement*. The breakdown was therefore cumulative, going back a very long time. The initial interspecies rupture and reconfiguration were concomitant to both the rise of agriculture and pastoralism. As mentioned above, the first order of estrangement pertained to the alienation between humans and large predators that fostered a longstanding antipathy ever since Neolithic innovators sought to tame and protect former game animals. Such had not marked the interspecies relationships of their

hunting forebears who had been more inclined to view wild canids, for example, as brothers, guides or teachers (Lopez 1978; Rose 1992; Rose 2011), an attitude that was retained by very few pastoral societies (for example Jiang and Goldblatt 2008). Pastoralists, for their part, have dealt with large predators by protecting their herds personally, dealing with predators in *ad hoc* fashion rather than contemplating how to exterminate them systematically. That was not to be an option for ranchers, and this was a function of an additional rupture that turned out to be foundational. This second order of estrangement is specific to ranching and compounds the first one with additional alienation vis-à-vis animals that had been tamed in the first place at the onset of domestication. The regression is apparent in Ingold's ethnographic exposé (1976) on the emergence of ranching amongst Sámi people in Finland, a very particular transition between pastoralism and ranching.¹¹ There, the compound estrangement is manifest especially in the aggression of ranchers towards reindeer, which has been a source of sorrow for older pastoralists of the previous generation. Ostensibly, interspecies antagonism was induced by the introduction of technologies and related practices to subdue animals:

The snowmobile, an innovation of the 1960s, did for the reindeerman what the horse had done for the cattleman: it enabled him to direct the movement of the animals from behind, by restricting their path of escape (p. 36; see also Pelto, et al. 1969). But by the same token the machine has been instrumental in the

¹¹ Unlike most cases of ranching transition, reindeer ranching was (a) adopted in Scandinavia by indigenous people who already had a long history of pastoralism, which (b) recruited animals endogenous to the subarctic region. Reindeer ranching is also referred to as an extensive system of reindeer herding, and reindeer pastoralism as intensive herding system. See: <http://www.utexas.edu/courses/sami/diehtu/siida/herding/herding-fi.htm>.

establishment of a mutually antagonistic relation between man and reindeer. The ruthlessness with which snowmobiles 'attack' the herds is a constant source of regret to ex-pastoralists of the older generation. Deer are terrified by the speed and roar of the machines, and run in panic at their approach. Their response, in fact, resembles that reported of ranched cattle to horses and riders; and, like cattle, they soon learned to seek cover in densely wooded or rocky parts of the range, inaccessible to their pursuers (compare Rivière 1972:63). In the roundups, too, deer are subjected to particularly brutal treatment, being crushed into a corral, or 'churn', so small that they can be grabbed by hand (Ingold 1976:45-6, 52). Indeed, violence towards animals appears to be a widespread feature of ranch economies, for my own observations are closely paralleled by those of Rivière (1972:71) and Bennett (1969:90-1) on cattle ranching (Ingold 1980:254).

In a ranching regime, as Ingold conceives it, interspecies relations that were steeped in familiarity degenerate and occasional encounters turn into general *battue*, whilst animals are chased towards a site of capture. This kind of protocol seems to preclude practices whereby animals may be pointed towards an habitual destination and leisurely driven there in ways not so coercive. Moreover, in this view, systematic violence replaced gentleness towards animals and is inherent to ranching practice.

The breakdown of animal husbandry

I argue that long before reindeer pastoralists became ranchers a compound transformation of interspecies relations had taken place in Europe. As Jordan (1993) mentions about the forebears of the first North American cattlemen, the method of cattle raising in the salt marshes of Andalusia involved no supervision as the livestock were left to revert to a near feral state; they grazed undisturbed other than for two rodeos yearly when they were shifted from marshes where they ranged during the dry season to the nearby hills during the flooding season. Scarcity of herding notwithstanding, the salt marshes cattle transhumance has been described as a form of “herding ecology” (Sluyter 2012:9-10), although by every account it was rather a (semi-)feral livestock ecology. Yet again, the non-specific use of the term ‘herding’ adds potential for confusion, and I emphasize instead that clear distinctions are necessary, especially since the diffusion of the cattle complex to the Americas followed a bi-modal pattern, with the absenteeism of herdsmen of one type contrasting with the broken down husbandry of another. ‘Cattle complex’ has nothing to do with bovine infatuation here or the acquisition of prestige (see Herskovits 1926); it rather implies a combination of livestock animals, related practices (of intense husbandry or lack thereof), technologies and social ecological relations that were altogether exotic to the Americas. I surmise that the domestication of wild cattle had been completed in the Old World before regressing in some areas. But considering the antiquity of the free-ranging cattle complex in Spain, it is plausible that *Bovus taurus* were kept in a semi-domesticated state from the start rather than going feral from a fully domesticated and tamed state; and

that this state was possibly coeval with tame cattle husbandry.¹² Either way, the cattle complex in the southwest of the Iberian Peninsula has long been bi-modal regardless of the ways these modes were related, whether salt marsh ranching longhorn cattle in Andalusia – and possibly in the Camargue of southern France – was an incomplete version of the Neolithic revolution or a vestige of the wildness that preceded it.

Note to the reader: there will be numerous references to various kinds of bi-modality. These follow several related axes of variation: historically, between tame and feral in terms of the domesticated status of livestock; between familiarity and estrangement in terms of interspecies relations; between agriculture and ranching in terms of modes of subsistence and their respective levels of ecological modification; between collective and privatized in terms of property relations of modes production; and so forth. In some instances, these characterize distinct regional bodies of practices but in others characterize bi-modality within a body of practices and relations. As will become clear, this kind of differentiation is not mere casuistry. Rather, it is key to understanding the complex and hybrid nature of the situations I wish to elucidate.

¹² There here is no solid consensus about the process of domestication of cattle ancestors, *Bos primigenius* aurochs. It evidently occurred in Anatolia, and *Bovus taurus* descendants diffused from there; but there were instances where cattle and aurochs co-existed over a wide range of *Bos primigenius* habitat and the latter were occasionally recruited in domesticated herds (Bradley and Magee 2006:326; Marshall, et al. 2014). Recent findings show that, while domestication resulted in diverse morphological and behavioral changes, the process was cumulative and there was ongoing genetic flow between domesticated animals and related wild species (Marshall, et al. 2014).

From Old Spain to New Spain: more of the same

Presently, the bi-modal pattern in question is explicitly about interspecies relations between humans and domesticated animals. A large proportion of sixteenth century immigrants from Spain to the Indies and New Spain came from Andalusia and many had ostensibly worked for the coterie of wealthy cattle owners (Jordan 1993:35; Sluyter 2012:27-8). Another important contingent came from the Extremadura region in the dry Meseta highlands with origins in its peasant-based livestock economy. Although the latter had not specialized in cattle, this economy had diversified with sheep, goats and pigs, and immigrants from there brought with them genuine herding experience along with intense husbandry practices (Sluyter 2012:28). Peasants in Extremadura regularly took herds of pigs, sheep and cattle on short treks in the surrounds of the farmstead (Jordan 1993:36-42). Each contingent subsequently replicated their practices in similar environments across the Atlantic (ibid: 89): Andalusian immigrants established *estancias* with free-ranging cattle in the Veracruz area on the shores of continental New Spain (Sluyter 2012:37), and those from Extremadura closely supervised a wide range of livestock on *haciendas* in the dry highlands of Mexico (Jordan 1993:100-104, 129).¹³ In time, however, the commitment to herd dissolved even on diversified haciendas where cattle were released to free-range *sans* herders, partly because of the scarcity throughout New Spain of

¹³ On the *estancias* of the Antillean colony of Española, very refined distinctions in the modality of husbandry were reflected in the name for the various categories of cattle, with the tameest cattle *corraleros* often penned and kept close at hand, as the name suggests, the *mansos* (for meek, mild, or benign animals) never straying very far, and the rest, *extravagantes*, *alzados* (for wild, rebel), *orejanos* (for unbranded, unsociable), and *bravos* (for fierce), exhibiting various degrees of wildness (Jordan 1993:76-7). The dissolution of familiar interspecies relations literally took place ‘in-house’ as expendable animals were expelled from under the common roof.

available manpower for cattle-related work (Sluyter 2012:53). This wholesale release, henceforth the most outstanding characteristic of ranching, was the point of convergence in the history of two distinct types of Hispanic livestock economy. Whether cattle and their keepers grew more estranged and whether cattle regressed into feral state or remained tame became a matter of regional practice and historical contingencies.

From Old England to New England

For tracking the ways that mutual estrangement in its second act built up towards its present configuration in contemporary ranching, I distinguish the *dissolution* of animal husbandry, as illustrated above, from its *disintegration*. This is done in order to denote a different set of circumstances in the history of interspecies estrangement. Although the outcome was *grosso modo* the same in respect to interspecies relations with livestock, this disintegration was foremost a phenomenon that took place in the early British colonies of the Atlantic seaboard. I bring attention to it especially since it is never linked directly to the emergence of ranching, although the setting in which it occurred – the small farmstead – and the principal actor involved – the sedentary agriculturalist – became, two centuries after their early dismal failures, instrumental in rescuing from perdition the free-ranging livestock economy in the West.¹⁴ It was at the tail end of a series of ecological disasters in the late 1800s that the death knell rang for the open range era.

¹⁴ Terry Jordan claims that a variation of the “Anglo-Celtic system of cattle herding” rose from the American heartland and, whilst shedding its South Carolinian Hispanic heritage, this “Midwest system” overtook both the Texan and Californian systems, coming out “triumphant” in the end (Jordan 1993:267).

True ranching was apparently born an orphan. As mentioned in the introduction, some scholars have emphasized that ranching has been misunderstood for “capitalist range livestock production” (Sayre 2002:xxxvi). It is rather like splitting hairs to propose such a sharp rupture, but I concede that the sorting out is important to understand today’s ranching predicaments. Granted, the privatization of access to pasture has been momentous for range management, that is undeniable, but I also argue that there was continuity with the open range in terms of interspecies relations, the kind that has haunted ranching since. In that regard, there is scarcely any genealogical connection between pastoralism and ranching to be found in American history to begin with. By Ingold’s standards for the emergence of ranching, the Navajo sheepherders, are, on this continent, the only pastoralist cousins of the Sámi reindeer herders, given that the Navajo people were first hunters before becoming pastoralists and have become ranchers since (see White 1988). For the most part, however, I argue that agriculture spawned ranching either like a hidden twin to good husbandry, clandestinely almost, by keeping livestock in a semi-feral state for expediency and sending off *vaqueros* to hunt them down, or more traumatically, as a result of a temporary breakdown of good husbandry that nonetheless turned out rich in opportunities.

Witness what happened in the colonies of New England where the enthusiasm for agriculture at first knew no bounds: “By the power of their example, and using the creatures they knew best”, writes Virginia Anderson (2004:77), “colonists would demonstrate how civilized people lived and prospered in the company of cattle”. Wherever they hailed from, it was not from a town like Pamplona where for general entertainment normal citizens run ahead of irate bulls charging in the streets. Rather, domestic livestock,

ahead of settlers, Anderson continues, were the earliest European emissaries to civilize the hinterlands: “English animals, no less than English people, would help build a New World Empire” (ibid).

It did not happen the way it was intended. The seventeenth century had not yet come to pass before visitors from the British Isles expressed outrage at the sorry sight of New England’s farms: “Another critic was even more blunt”, reports Anderson (2004:244), “calling New England husbandmen ‘the most negligent ignorant set of men in the world’”. Cattle broke fences at will and, further afield, herds of pigs roamed into estuaries, running amok and digging up oyster and clam beds (Cronon 1983). Husbandry throughout the colonies had degenerated into occasional hunts for stray livestock, skirmishes over property in animals, and lawsuits for compensation against crop damage (Anderson 2004; Stewart 1991). Short of solutions, several colonies changed in English common law from fence-in rules to fence-out rules to suit stock owners, exonerating livestock of all damages. Thus was institutionalized the open range as “an enormous commons” (Stewart 1991:22). Throughout the 1700s in the colony of Georgia, stray cattle found plenty of native forage year round and reproduced at a frenetic rate. “Though the colonists realized the potential value of animals”, reports Mart Stewart (1991:1), “they did not possess the resources or skills to manage them, and the beasts were as good as wild”.

There were nonetheless material advantages to this chaotic state of affairs for the opportunists. As Anderson (2004:244) noted: “New Englanders drove livestock ahead of them to occupy choice tracts before the livestock owners arrived”. And some colonies, especially those that had received an influx of free-ranging cattle knowhow from the

Antilles, quickly profited from the ineptitude of others: “Carolinians just across Savannah [across the river from Georgia] had already developed vigorous techniques for raising cattle on the open range, based on a system of cowpens and using cowpen keepers and cattle hunters to manage the animals” (Stewart 1991:2).

The social unrest that ensued from the release of livestock in the hinterlands was for the most part swept aside as a minor inconvenience. The open range was otherwise an opportunistic response to the scarcity of labor force, considering the dividends it generated from bountiful free land. Farmers turned into Cattle Kings in Ohio during the 1700s by putting to good use both scrub cattle and well-bred cattle imports, letting them grow up on free grass before confining them to feed from bunks on corn crops (Henlein 1959). It meant more profit and made more sense logistically to hire drovers to trail fat cattle to the East Coast markets than to ship corn there in carts pulled by oxen.

West of the 100th meridian the historical configuration of cattle complexes gets much more complicated, especially after some Hispanic and British complexes converged in Louisiana and Texas while others went on their own trajectories, through California and Oregon, or through the Midwest, before heading north to Canada (see Jordan 1993). Ecologically, it was a very different story in the West: the harsh winter and drought conditions of the late 1800s took such heavy tolls that ranchers had to resort to close-monitoring their livestock and supplementing their feed during dire times in order to stay in business (Evans 2004; Jordan 1993; Ootelaar 2000; Potyondi 1995; Sayre 1999; Wilson and Dijks 1993). In Wallace Stegner’s view, free-range ranching year-round in the northern plains was doomed: “The net effect of the winter of 1906-07 was to make stock

farmers out of ranchers. Almost as suddenly as the disappearance of the buffalo, it changed the way of life of a region” (Stegner 1955:137). Henceforth, after over two centuries of experimentation with laissez-faire husbandry, cattle ranching recuperated much of its agricultural origins at the turn of the century.

A cow is not a cow is not a cow

Interspecies estrangement is not irrevocable, of course, but ranchers never completely crossed that bridge back again. Yet these fundamental ruptures have been the backdrop for the negotiations to reconcile ranching and conservation that usually feature a quadrangle fraught with conflicting interests: grass ⇔ cattle ⇔ large predators ⇔ humans. Innocuous as it might seem, the standoff in human ⇔ cattle relations is at the very crux of the ranch/conservation conundrum.

There is an infinite range of variants between those ranchers who can hardly control their livestock and those who can thread them through the eye of a needle. In other words, there are scores of ways to control and move cattle: they can be made to flee, to drift, or they can be lured, or any combination thereof. For a cow it can be a terrible experience to be gathered up into a herd or it can be a pleasant event presaging a safe passage somewhere. What appears like a herd can be misleading too: it may be a collection of individuals flocking together out of curiosity and sociable expectations but ready to scatter again at a moment’s notice. Or it can be a cohesive social assembly that is paying attention to the clues signaled by a rider. So on and so forth, it is possible to enumerate a

vast range of practical considerations and the many ways people and cattle behave towards one another.

There is inevitably a stream of objections to the notion that estrangement is still an issue in ranching. But in practice it has more to do with the question: do humans really want to be out there with the cattle? And is it done in such a way that cattle mind humans being near them? In its most drastic forms, estrangement is a thing of the past, it is said, although subjugation is alive and well in rodeos (Lawrence 1982). However, it can also be said that histories of interspecies relations, like the social history of specific herds, unfold not only in cumulative fashion over generations, thus appearing immutable in the course of reenactment. Yet, people may also revamp their approach (literally), steering relations down new avenues. Estrangement is not a monolithic legacy, then, and ranchers are not merely stuck with skittish cattle. Rather, ranchers fashion the behavior and the social history of their herds. A clear illustration of the influence of interspecies climate is the journey of a French breed of cattle, the *Saler*, one of many continental breeds that have been imported to North America since the 1970s to introduce hybrid vigor to British breeds. The *Saler* breed is known in France for its multiple vocations, its dairy production for the specialty cheese made in the high pastures of the Cantal region, its delicious beef of course and, formerly, its utility in the form of draught oxen. The breed is very 'rustic', a euphemism for an animal that thrives without pampering – it is said in France that the *Saler* is a near relative to the aurochs. Yet, while handled daily to be milked in the field, the cows got a reputation in their country of origin as easygoing animals that tolerate handling without fuss. Within twenty years after it was introduced to ranch life in North America, however, the breed got another reputation, as a restless cow, prone to agitation. Temple

Grandin, an animal behaviorist who specialized in cattle handling, estimates that the Saller cattle is a “high-fear breed” (2008:49). Flight responses build up in susceptible animals until they have a hair-trigger temper, and to keep this from becoming endemic, the Saller breed association has devised an index for unruliness. Delinquents have been selected out, apparently, but Grandin laments that the problem lies also on the human side of the equation: “Unfortunately, the quiet methods of the early 1900s have been forgotten and some more modern cowboys were rough” (2008:44). If that is any indication, a kind of truce was in the works during the not-so-wild old days. Just when yesteryear’s skills would come in so handy, they have gone missing; a testament to this is the popularity of workshops for “low stress livestock handling” and even “low stress herding” (see Bailey and Stephenson 2013; Cote 2004; Cote 2013; Grandin and Johnson 2005; Kinford 2013). It can be said then that a cowboy is not a cowboy is not a cowboy. And the corollary is that the combination cow + cowboy makes for an even more eclectic spectrum of potential enactments.

Ranchers, of course, do not want to confront a worse climate of conflict every time they have to work cattle. On the other side of the coin, however, most ranchers neither want nor have the interest or sufficient time to ameliorate the circumstances of their relations with livestock. And for a rancher there is no joy in going from (a) too high a stress level in a herd only towards (b) dealing with a flight zone so dampened that animals are immune to driving pressure exerted from a distance. In other words, most ranchers would not want to spend their days like pastoralists. The frustrations when cattle are too dull are nearly as maddening for a rancher as the chain reactions triggered by spiraling fear – not that a pastoralist would understand why a rancher could get upset with placid

animals to begin with and why he would self-inflict the trouble of a chase afterwards. Yet, it is arguable that the reluctance to entertain an everyday social rapport with livestock is at the heart of the challenge to convert ranching from conservation-averse to conservation-friendly. In that respect, it is not necessary to reduce but rather to increase human presence on the range, albeit a kind of presence that is benign: firstly, to attend to grazing activities directly in regard to the 'grass ⇔ cattle' nexus in order to control how long and how intensively a herd uses any particular area; and second (as a corollary of the first), to attend to the safety of livestock, especially at the 'cattle ⇔ large predators' nexus. In the end, it would be to the advantage of conservation should ranchers get more involved, like pastoralists, with the day-to-day quadrangle of 'grass ⇔ cattle ⇔ large predators ⇔ humans'. For plenty of reasons, however, this is an intersection of the wild, the domesticated and the human that has been studiously avoided. As this thesis will illustrate, those who have forged ahead with this convergence have come under a lot of criticism, from peers, scientists, and even staunch conservationists.

1.2 What is ranching in southwestern Alberta?

This section will examine what conditions exist in southern Alberta for coexistence between ranching and conservation, given that the term ‘ranching’ encompasses highly variable land use regimes and husbandry practices. Ranchers worldwide have adopted land use regimes varying from high to low impact in terms of ecological transformation, and the scope of husbandry practices range from exclusively focused on the grazing process to highly dependent on agricultural cropping to feed livestock. In western Canada, ranching has become a hybrid of land uses and practices. Furthermore, especially in the southwest corner of Alberta, a sequence of land use regimes over one century of ranching has turned the landscape into a mosaic of parcels of farmland, modified rangelands and forests. A few case studies will illustrate the rationales for the many turns in the environmental history of the study area.

To evaluate the compatibility with conservation of a particular set of ranching practices and land uses, it helps to situate it in its broader context. I bring attention to three processes that characterize ranching in various parts of the world:

- alteration made to ecosystems as a necessary condition for ranching to take place. An example of radical alteration is the large-scale deforestation in parts of Amazonia, in Brazil, and in the Chaco of Paraguay. Conversely, ranching started in many parts of the world without substantially altering ecosystems at the outset, as in the South American *pampas*, the Australian outback, and southern Africa’s *veld*.
- modification of ecosystems as an aftermath of grazing. The effects of the diffusion of livestock in North America were extreme in that respect. Cultural geographer Terry

Jordan (1993:9-10) writes: “The open-range cattle-ranching industry invariably caused habitat modification and damage”. These effects were not deliberate, however, and range managers emphasize that most contemporary ranchers are conservation-minded.

- reliance on agriculture. Unlike ranching in other parts of the world, a ‘grazing only’ regime is virtually a memory in North America. Ranchers let their livestock graze as much as possible, but they rely on agriculture for feeding livestock during times of duress and to fatten them for the meat market. For that purpose, they either dedicate part of their land to growing crops or import feed from elsewhere. Regardless, North American ranching has become dependent on crops that require stripping a landscape to bare cropland.

The intensity of these processes in some parts of the world has made ranching the bane of conservation. The question here is: what do these processes have to do with ranching in the southwest corner of Alberta? The answer, as I elaborate below, is that they have altogether shaped the landscape. This, of course, begs the next question: why bother conserving it? But that one belongs to the next chapter. Presently, as a prelude, a short history of land uses and practice will help explain what a very particular brand of ranching has created.

A landscape mosaic

The southernmost corner of Alberta was homesteaded at the end of the colonial rush that had settled the open prairies in western Canada. Right from the beginning, in the early

1900s, the first homesteaders cleared a considerable proportion of the aspen forest in the part of the foothills available for settlement. Trees have since grown back in some of the cleared areas and there have since been concerns that aspen groves actually encroach on native grasslands (Olson 1994). To compensate for the absence of natural fires, given the success of firefighting, and because of the risks that controlled fires might get out of control, the Alberta government subsidized ranchers to clear land with bulldozers until the 1990s.¹⁵ Deciding whether the bush is recovering or encroaching is an even greater dilemma for conservationists, especially considering that establishing a baseline for the canopy cover (the proportion of bush and open area) is an arbitrary exercise in such a dynamic landscape. What is not equivocal, however, is that agriculture, by definition, transforms landscapes radically. Following Meillassoux (1972) in this respect, Ingold points out that

the agriculturalist does not adapt his purpose to the constraints of nature but actually *engineers* selected patches of nature to suit his purposes. Pursuing the same idea [as Meillassoux], I suggest that to turn a piece of the landscape into a field is to remove a covering of *specific things that grow*, leaving a *general potential for growth*. It is to this creative potential that the concept of land refers, and its appropriation is what we mean by land tenure" (Ingold 1986:154 italics the author's).

¹⁵ Fires were also set deliberately in the plains (White 1988), and west of the Rockies, the maintenance of growing conditions for blue camas, various berries, and other crops and game animals was done deliberately with fires in the Pacific Northwest (Storm and Shebitz 2006).

This means, *ipso facto*, that agriculture is the antithesis of conservation in terms of landscape integrity. The latter, however, is never still, and it seldom backtracks precisely to an earlier state once freed of human intervention.

Hybrid rangelands

Deforestation notwithstanding, range scientists estimate that the rangelands in the Alberta foothills have for the most part been modified only slightly: in scientific terms, two thirds of native plant communities are of “late seral stage character” or “representative of succession” (Adams, et al. 2003b:23; Willoughby, et al. 2003). However, this configuration, very local in character, depends on the history of grazing. As baseline studies have shown, grazing practices on local private ranches in the study area have had a disturbing effect on the rangelands.

For the record, ‘rangeland’ (or range) is defined officially as “land supporting indigenous and introduced vegetation that is either grazed or has the potential to be grazed and is managed as a natural ecosystem” (Adams, et al. 2003a:7). Officially also, the modification of plant communities – aside from the invasion of noxious weeds – stems from the introduction of agronomic invasive plants that are more resistant to severe grazing than native species (Adams, et al. 2003a:12; DeMaere, et al. 2012; Wroe, et al. 1988).

These agronomic invasive species are omnipresent in the foothills, but the problem is exacerbated on ranches in this particular locality. The shift from native to modified plant

communities has been inexorable except on a few conservation-oriented ranches and in areas that are not readily farmed or easily accessible for livestock – perhaps too high in elevation or too far from water. Free-ranging practices do little to control the distribution of grazing activities, but there is nothing specifically local about letting cattle linger wherever it suits them. Because of exceptionally high snowfall so near the mountains, however, most local ranchers stock their pastures with enough cattle to maximize usage before winter, which exacerbates the effects of the laissez-faire grazing regime. And since a larger proportion of the range is private in that area, in other words not regulated by the limits imposed on Public Lands, that practice is widespread across the landscape except in the high country, which is Public Lands. The resulting scale of modification has been a quandary for the Waterton Park Front Project. Repairs of damaged riparian areas have been showcased in some small rehabilitation projects, but at the landscape scale, the pervasive dynamics of the practices have been ignored.

Bi-modality in practice

I will explain the hybridity of ranching in terms of bi-modality of practices, such that ranching here is most of the time more like farming. Although the Waterton Park Front Project is said to be a ranching landscape, and the Twin Butte and Mountain View communities identify unequivocally with ranching, in actual practice there is not very much work going on that involves spending time on the range. The ranching calendar is such that most of the summer is spent farming and putting up hay crops, not so much riding the range, and winter (and part of spring and fall) is spent feeding cattle. To do justice to the

actual diversity of praxis in the region at large, however, I introduce case studies, as *per* a multi-sited ethnography, contrasting, on the one hand, what I refer to as ‘small ranch’ country in the southwestern foothills where the Project is situated, and, on the other hand, the ‘big ranch’ country in the foothills that extend from the Oldman River valley north to Kananaskis Country. In this ‘big ranch’ country, the bi-modalities of ranching are configured differently: a more clement micro-climate makes for a range that is not snowbound all winter; there, farming is not so prevalent and ranchers are a lot more involved with the range year-round. This is in large part a function of the larger size of the operations that makes it possible to actually live from ranching without outside income. More specifically, I will emphasize that practices in small ranch country are the antithesis of those in big ranch country, especially on the ‘a7’ ranch (see LaRocque 2014).¹⁶ There is no farming done on that ranch, although there is considerable ‘tame pasture’ from farming activities decades ago; and there are no distinct grazing and feeding seasons. Cattle graze year-round, instead, but the method of forage allocation changes from growing season to dormant season, with occasional supplementation with grain cubes when the conditions are harsh, but there is no hay fed to the cattle. Finally, people working on the ranch are directly involved with supervising grazing activities daily.

This multi-sited dimension will open up a more complete horizon for assessing the prospects for convergence between ranching and conservation. In that respect, it is most pertinent that the two ranching districts in question have similar rangeland habitats and, in

¹⁶ In the interest of full disclosure, I managed the a7 ranch west of Nanton for several years in the 1990s, and earlier, for ten years, I managed a ranch in small ranch country across the fence from the Waterton Lakes National Park.

regard to the first order of alienation, that they both harbor species of wildlife, like cougars, wolves, and grizzly bears, that have been exterminated in most ranch country in North America. The contrast between these places regarding attitudes and behavior toward large predators is therefore of particular interest. All told, the elucidation of the various axes of variation, in interspecies relations and in modalities of praxis, buttresses the subtext of the present study. Furthermore, it offers a useful frame of reference to compare the livelihoods of ranchers and pastoralists at multiple scales, from local to worldwide.

Ranching: a solar mode of subsistence

As recently as the 1980s, the proposition that local ranchers would agree to negotiate with a conservation organization to share property rights in land would have been laughable. Since then, trends in the general economy have further diminished ranching profits and land values have escalated, exacerbating crises of family succession and forcing the sale and/or fragmentation of ranches to satisfy heirs. It is in this context that the benefits of conservation easements have been reevaluated.

In the first instance, there are more aspects of the economic crisis of ranching and farming than predicaments at the macro-scale, namely the differentials in rates of inflation between agricultural goods and every other type of goods and service, national cheap food policy, international wars over subsidies, the gyrations of the commodity market at the Chicago Mercantile Exchange, droughts and the fluctuation of grain prices, and more recently a Mad Cow crisis, a lifting of the ban against imports from countries with foot-and-mouth disease, and other vulnerabilities that keep cropping up. There is also a crisis at the

micro-scale, though more insidious, masked by the assumptions of agricultural economists who take for granted that the intensification of production must bring more profit. From a grassroots perspective, however, there is a very different micro-scale story to be told, one that helps explain why ranching, be it in small ranch or big ranch country, is ailing, even if the occasional burst of beef prices, like the current one, sends ripples of excitement throughout the Alberta cattle world and propels the inflationary spiral of land prices to new heights.

Conventional analyses of the ranch economy and of agriculture as a whole have somehow become derailed from the fundamentals. This has gone so far down the track that it takes some bushwhacking to trace back to a foundational principle. Ranching began as an economy that was singularly solar.¹⁷

In the Companion Encyclopedia of Anthropology, “a mode of subsistence is an abstraction from any given social reality consisting of *the aggregate of extractive processes characterizing a particular population*” (Ellen 2003 (1994):198 italics the author's). To be useful analytically, a mode of subsistence reveals a clear path to its basic economic attributes. Hunting, for instance, can be summed up as an economy with few intermediate links in the solar chain between energy released by the sun and that which feeds the hunter. Hunters *extract*, as Roy Ellen puts it, by killing animals that harvest this energy by consuming plants that have already converted it from the sun. ‘Photosynthesis’, that is, stores its energy by binding it to various elements from the air and other media, thereby

¹⁷ I borrow this concept from Allan Savory and the attention he brings to ‘solar dollars’ in his model of holistic resource management (Savory 1988; Savory 1999).

generating plant matter. Fishermen link to a solar chain via plankton. And pastoralists rely on solar energy by harvesting products of domestic animals grazing natural pasture, perhaps investing more labor than their hunting/gathering/fishing counterparts, as Sahlins (1972) would argue, but requiring no more technology. If anything, ranching during the open range era, with similar investments of labor and skills in 'cowhunts' and *rodeos*, had more in common with the short solar chain of hunting than with the highly supervised forage harvesting of pastoralism (Ingold 1980).

That changed radically since ranching converged with agriculture in the course of the 1900s. Ranchers had to submit to the social relations of production of agriculture, most outstandingly its partitioned access to land (Bennett 1969; Evans 2004; Evans 2007a; Ingold 1990:443-445). Concretely, sedentarized cattlemen adjusted by investing in technologies like fencing, water development, windmills, and so forth (Webb 1931). And while this adjustment opened up great opportunities for improving performance with breeding selection and investment in careful husbandry, and ranchers received commensurate dividends, at the same time it triggered a spiral of expenses that had less and less to do with enhancing the solar chain. The local history of the small homesteader-turned-rancher in the Twin Butte area – at the core of the study area – is an epitome of the development of the latest profile of ranching, one that has defected from the solar economy, so I argue. The transition was rapid, barely three generations from the time Herbert Maynard Hatfield established the first ranch in the vicinity. After he arrived in 1889, trailing his cowherd to one of the last vestiges of unclaimed range in the western prairies, Hatfield witnessed the open range era come to an end during the first decade of

1900s, although his particular ranch survived until the heyday of ranching in mid-century (Bennett 1969; Bennett 1946; Huddleston 1986a).

From the perspective of near-oblivion

It is not within the purview of this thesis to evoke in detail the indigenous economies that preceded ranching. Yet, it is nevertheless important to take note of their historical background. At the time of contact, resident hunters were members of the Niitsitapi or Blackfoot Confederacy (Hungrywolf 1977; 2006), more specifically the Piikani (also known as Peigan) and Kanai (also known as Blood) nations. Hunting parties from the Ktunaxa (also known as Kootenay) nation also came seasonally from across the mountain ranges, and Nakoda (also known as Stoney) people came from the north for the same purpose. Scarcely a decade before the advent of ranching in the present study area, people residing or journeying there still relied on hunting bison for subsistence as they had for millennia (Reeves 1978; 1983a; 1983b).

The circumstances of these occupants had nevertheless altered radically in the course of the previous three centuries. This said, the context of the pre-contact era remains educated guesswork; both the prior demography of wild herbivores, large predators and human hunters (see Epp and Dyck 2002), and the subsequent scale of repercussions on these populations after European contact are disputed (Dobyns 1983; Henige 1998; Liebmann, et al. 2016; Ramenofsky 1987; Thornton 1987; Ubelaker 1992; Verano and Uberlaker 1992). Nonetheless, it is undeniable that from its very beginnings, the European colonization of the New World triggered successive waves of large-scale disturbances that

reverberated towards the hinterlands often long before its explorers appeared. As for momentous events, the cross-continental spread of highly infectious pathogens stands out most, along with the acquisition by indigenous hunters of a new mode of transportation, as horses were disseminated along trade routes (Daschuk 2013). The chain reaction intensified when Europeans established a constant presence for ongoing direct trade, making firearm technologies available while keeping their clientele dependent inasmuch as they retained control over the supply of powder and ammunition – an effective deterrent against generalized insurgence. Throughout the Great Plains, the vulnerability of indigenous peoples to pandemics and conquest thus increased commensurably with their capacity for mobility, hunting prowess and internecine warfare.

Each set of vectors of change – diseases, horses, firearms – had compound social effects, each with corresponding ecological upheavals. And the rate of change again grew exponentially with the introduction of a revolutionary mode of railroad transportation linking products quickly with Eastern and overseas markets that were developing an insatiable appetite for resources, all of which exacerbated the amplitude of ecological transformations. Thus in a short span of time, herds of wild herbivores that had appeared inexhaustible were decimated, large predators starved for want of prey, and grasslands, left mostly ungrazed, became susceptible to extreme wildfire conflagrations. With the economies, social organization, and ecologies of indigenous peoples in shambles – let alone their sense of rightful world order –, incoming colonial forces finished off what little resistance warriors, once formidable but reduced to destitution, could muster with their ranks ravaged by disease (Daschuk 2013).

For newcomers, these upheavals presented opportunities, often in convoluted ways. After crossing a mountain pass from a westerly direction to the Waterton Lakes area in 1865, an early European adventurer nicknamed Kootenay Brown caught sight of a herd of bison spreading out as far as the eye could see; his party feared for its safety as it proceeded through the throng of animals (Hollihan 2001; Rodney 1969). When he returned thirteen years later to settle, however, bison had become scarce in the region and by 1890 they were entirely gone, hunted to extinction on both sides of the international border to put an end to Indian resistance (Daschuk 2013; Kennedy 1972; Smits 1994). In the span of a quarter century, not only bison but the overall population of large game animals had vanished from the area's flat country, its remnants taking refuge in the mountains. Kootenay Brown deplored losing both his sources of goods and the customer base for his trade, yet it was this very depletion that was to propel him into the novel profession of conservationist.

The process of replacing bison with cattle began in earnest in 1882. At the onset, the Canadian government was the principal cattle buyer in the region (Elofson 2009; Evans 2004), the British Crown having made a commitment in 1877 to supply destitute hunters with basic staples as partial fulfilment of its obligations pursuant to Treaty No 7.¹⁸ By the last decade of the nineteenth century, the Canadian prairies were quickly filling with cattle streaming from Montana by the tens of thousands, and competition for range was already heating up. The scale of the obliteration of wild animals caused such concern that the

¹⁸ For the content of Treaty 7, see: <https://www.aadnc-aandc.gc.ca/eng/1100100028793/1100100028803> accessed July 13th 2016

Federal government founded the fourth national park in Canada in 1895 near Waterton Lakes, appointing Kootenay Brown as first Superintendent in 1911 to help save what little was left of nature – perhaps without the knowledge of Federal authorities was already involved in contracting with ranchers to supervise cattle grazing at that very site (Hatfield 1907).

A short distance to the east (see Figure 5.7), the Piikani and Kainai nations had no such recourse for implementing that level of protection against abuse. Unable to defend rights that had been enshrined in treaty barely a decade earlier, they faced another onslaught, this time over the tracts of land the government had set aside for their ‘Indian reserve’ where they had been confined after vacating the rest of their ancestral territories. From the 1880s well into the 1930s, ‘non-Native’ ranchers sent cattle to occupy the land of Piikani and Kainai nations, grazing mostly without permission. The protests of indigenous people against chronic grass poaching went unheeded and whatever formal arrangements the Kainai leadership made with some large ranching concerns were intended mainly to gain some measure of control over the systematic trespass on unfenced range that was rightfully theirs, but in vain (Regular 1999; 2009). Thus by the time the Department of Indian Affairs restored order and trespassing cattle were removed, rather belatedly after more than five decades of illegitimate occupation (and additional years of land confiscation as part of the compulsory ‘war effort’ Greater Production program during WWI), much of the rangelands on the reserves had severely degraded and it was decades before the range recovered.

Today, the Piikani and Kanai Reserves are a patchwork of land uses. Much of it has been leased to agribusinessmen for commercial farming. But ranching has also resumed, this time under indigenous management, and the reserves hold some of the largest tracts of healthy native rangelands.

As mentioned earlier, I have taken a multi-sited approach for my study. However, I have narrowed the scope to the conduct of ranching in a very specific area from the perspective of a colonial ground-zero ecological baseline, which, it is necessary to fully acknowledge, was also a ground-zero social baseline, concurrent with the obliteration of indigenous economies by force of attrition, and compounded with subsequent blatant violations of treaty rights. This grueling transition to the Euro-Canadian world order condemned to near-oblivion the co-constitution of indigenous peoples with wild animals, grasslands and everything else belonging to an ancient circle of life. These struggles have been studied elsewhere (Daschuk 2013; Regular 1999; 2009) and certainly warrant further examination. Piikani and Kanai peoples partake of social and cultural worlds sharply separate and distinct from the everyday lives of the Euro-Canadians who surround them. And although their respective reserves are adjacent to the Waterton Biosphere Reserve – even overlapping slightly (see Figure 5.7) – relations are muted as between contiguous solitudes, and there is very little exchange on the ecological front either. I deliberately have not attempted any comparison, fearing that without a comprehensive ethnography of the complex issues intrinsic to current circumstances, everybody concerned would get short-changed. A systematic comparison has yet to be made and I hope that the present work can contribute to that task. Suffice it to mention for now that the milieu of conservation often obfuscates the longstanding role of indigenous peoples in the ecological makeup of

landscapes, and that their presence – current or historical – is often trivialized. When I have noted particular instances of indigenous people's engagement in ranchers' politics and discourses in the Waterton Lakes area, these actually underline the rarity of such occasions, yet, by the same token, they also highlight the pertinence of unexpected moral alignments in ecological matters.

The First Rancher on the Kootenay River

The journals of Herbert Maynard Hatfield and the reminiscences of William Huddlestun, a foreman for Hatfield between 1889 and 1893, provide important clues about early ranching around Twin Butte (Hatfield 1907; Huddlestun 1986a; Huddlestun 1986b). Until the 1900s, Hatfield's cowboys drifted his cattle west from his headquarters near the Kootenay River (since then renamed Waterton River) every spring to the mountain canyons on a transhumance of sorts. The cowboys would be assigned other work and by mid-summer the cattle were left to drift back until the fall roundup. Come wintertime, herds of horses were trailed eastwards to ranges where snow was not so prevalent, but the cattle stayed and some chore horses were also kept back. Hatfield's journal entries indicate that he harnessed horses to plow the snow off portions of the range to make it possible for the cattle to graze; this practice lasted until the hard winter of 1919-1920 after which ranchers relied exclusively on hay or turned to farming entirely (Potyondi 1992).¹⁹ Other than the extra investment of labor and horsepower for plowing snow, Hatfield's operation

¹⁹ See IMG_1556.jpg in Hatfield Fonds files from the Glenbow Museum.

was in some respects like that of a pastoralist, although cattle were released on the open range at every opportunity.

It must be emphasized that, in line with a solar paradigm, it is the livestock that exert the energy necessary to procure forage. In that respect, the key principle of the solar economy of pastoralism is to use herd mobility for both short daily treks and long seasonal journeys for accessing forage. In addition, the optimal solar chain is that with the fewest (and cheapest) links possible in terms of energy. In that respect, turning livestock loose on the open range was optimal so long as they stayed alive and were not stolen or lost.

Early on, it became obvious to ranchers like Hatfield that winter starvation would be constantly looming. Hatfield hired men to mow patches of native prairie and sloughs, storing it loose in large haystacks. Human labor, horse-power and very basic machinery were modest investments in that precaution, and the main challenge was to keep out hay thieves during wintertime.

Ending in 1910 with the last communal roundup, the open range also became unavailable for cutting native hay. In its place, Hatfield opted to grow tame hay (from introduced grass species) exclusively and resorted in addition to buying it since farming and haying was a time consuming and expensive proposition. Preparing for the 1906-1907 winter, Hatfield bought 700 tons of hay for his 2,200 cattle (including 2 and 3 and some 4-year-old steers). During hard winters, Hatfield fed livestock 6 tons daily, and some grain, mostly for weaned calves. By spring 1907 after a particularly bad winter, he had lost 17% of his cattle whereas most foothills ranches lost 50% and many ranches on the bald prairie had been completely wiped out (see also Evans 2004). The next year, he bought 800 tons

of hay, one hundred tons more this time since he had retained cattle that were in condition too poor for market.

Hatfield was shifting towards a cash economy on the expense side of the ledger, and relied completely on agriculture in order to get through the winters. For the period between 1905 and 1907, a cursory glance at the figures reveals that at a cost of \$5/ton, Hatfield's expenses for hay purchase were \$1.80/head after feeding .36 ton of hay yearly per head of cattle owned ($800 \text{ tons} \div 2,200 \text{ head}$). Today, \$1.80/head per year in feed cost appears modest, considering that steers sold for \$40 in 1907. Twin Butte ranchers now plan on feeding cows 2.5 tons per head yearly. But in those days, ranchers sold mostly 4 year-old steers, and by the time Hatfield would sell his, each would have accrued a hay purchase of \$9 in the course of 5 winters, including the cost of wintering pregnant cows. There is no indication in the journal entries of the proportion of the hay inventory that was grown and harvested internally, which cost \$3 to \$4 per ton in contract labor (including the costs of using machinery and horses) in 1900 and \$3/ton for labor in 1906 for Hatfield, a good deal at the time when wages had gone up. The value of the grass before it is converted into hay, then, was between \$1 and \$2/ton.

Hatfield's journal entries nonetheless reveal that the ranch total income for the three years from 1905 to 1907, including the terrible winter in between, was \$42,822. On average during these years, Hatfield sold 283 grown steers and 103 cows per year, for an average yearly gross income from cattle of about \$14,274, keeping in mind that most of the inventory were steers that were kept until sold as 4 year-olds or else replacement heifers. And keeping in mind also that a \$40 steer had cost only \$9 in hay in its lifetime, as shown

above, the ranch net income was higher, dollar for dollar, than the yearly net income from the (much smaller) average herd in the Twin Butte area one century later, between 2000 and 2010. Income was more modest when the Hatfield ranch just started, but Huddleston (1986a:3) reports that the first four years from 1889 “were good years with no too hard winters, the cattle herds grew and with no taxes, and no rent and not much wages, the place really made money”. At the end of that period, Hatfield sold 106 steers and 18 cows for \$4,640 on August 28th 1894. The same year, the ranch bills were negligible at \$300 or 6.4% of the gross. Granted, the winters had been propitious.

Eleven years later in 1905, the ranch had fenced off several sections of private land bought by Hatfield (a section is a square mile), and tripled the inventory of cattle that it sold yearly. The value of its sales tripled also, but, proportionally, its yearly expenses in purchases of hay alone were four times higher than the 1894 total expenses. A cut of 26% of the gross did slice ranch income substantially and it burdened the solar chain with extra expenditures by the same ratio. Nevertheless, the burden was mostly in labor expenses, paid in monthly wages or by contract. Progress had yet to lure ranchers into further investing in technologies to speed up and maximize production.

This excursion into century-old landscape history shows the ecological and economic logics of the shift from the practices of the open range to those of sedentary ranching. It was plainly necessary to go agricultural, so it appeared; yet this step also heralded a momentous transition in the decades to come from a grass-based solar economy to a crop-based economy that has since become totally fossil fuel-dependent. In the 1960s, cultural ecologist J.W. Bennett (1969) studied ranching on the Canadian prairies when it

was still prosperous but on the cusp of becoming subsidiary to industrial agriculture. Since Hatfield's time, the value of the summer gain on pasture was increasingly offset by the next winter's feeding season. And with the costs of supplementation rising, the obvious strategy was to export cattle to feedlots at a young age. Since Bennett's study, all cattle destined to be fattened have sold before they are two-year olds and sent to the feedlot rather than directly to the meat market. Now most ranchers sell weaned calves to feedlots where they remain stationary and eat mostly grain.

The only reason why working ranches still exist is that there is no profit in confining gestating cattle in feedlots since they require only basic maintenance – ditto for sheep and goats. On the other hand, the husbandry of chickens, turkeys, pigs, dairy cows and young beef cattle illustrates a new norm that is the opposite of the pastoralist and the early ranching solar chain: now the feed is transported from where it is grown to where it is eaten by animals in confinement, and, in turn, their excretions are transported away. This has been the trend for growing animals in the mode of agriculture. The immediate relations between animals and plants have been ruptured and the outfall has been treated like toxic waste – the composting of feedlot waste is a recent innovation that is environmentally contentious in its own right, particularly in more densely populated settings.

An insidious declension

With a new cross-continental railroad bringing settlers by the train load to the Canadian prairies at the turn of the 20th century, farmers displaced ranchers from the most arable

land and the remaining working ranches diversified by adopting farming in order to survive (Evans 2004; Potyondi 1992; Potyondi 1995). Some of these ranchers quickly paid for their ranch by selling crops of seeds from grasses imported from the Old World. Herbert Hatfield was an innovator also and he was one of the first to introduce exotic forage in the area. In his journal he writes:

April 19th 1895 Senechal [aka Sénécal] hand sowed timothy on the hill side
[. . .]

July 24th 1895. Senecal started cutting the spring rye [presumably seeded on a different field] and the tallest straw Hatfield could find measured with tape, was seven feet two and a quarter inches. Tallest timothy four feet eight inches” (Hatfield 1907; Huddlestun 1986a).

Newly broken prairie did not need fertilizer. Seeded by hand or with horse-drawn seed drills, crops in the moist climate of Twin Butte could be spectacular. The bioproductivity depicted above exceeds what would be conceivable today in the same fields now farmed by the Waterton Hutterite colony, using the most sophisticated soil tests, the most generous application of fertilizer and herbicide available and the biggest models of tractors and high precision air-seeders.

The last crews of Métis people hired by ranchers to harvest native hay with horses disbanded in the 1950s (Riviere 2008). A few local ranches fed their cattle with horse teams until the 1970s – the last ranch to use draft horses for that purpose and for some farming converted to tractor power in 1985.²⁰ By the 1970s, most local ranches had a

²⁰ This particular holdout, latecomer to the age of tractor horsepower, was the author.

complete line of machinery to do small-scale farming. Growing tame hay, however, even legumes like alfalfa, took a toll on land fertility, and fertilizer became necessary to maintain yields. Then with the 1980s came another generation of technologies along with the inflation of the price of oil and products like fertilizer. Large round bales replaced small square bales; people did not have the time to handle hay by hand anymore. But they also needed bigger tractors for these balers, and bigger trucks to haul big bales and feed them to cattle. Of course all this technology also burned a lot of fuel and cost much more to buy, operate and maintain. By the end of the 1980s, in the entire Twin Butte area, less than a handful of ranching households subsisted exclusively from ranching. Most of the output of its solar economy was engulfed by inputs of technologies and fossil fuel.

Case studies in today's small ranch country

As mentioned earlier, the profile of ranching had gone bimodal with distinct grazing and feeding seasons. The Twin Butte area being near the mountains and at higher altitude, the feeding season lasts as long as six months. Since wintering a weaned calf to put it on grass the next summer had become so expensive, ranchers have aimed instead to maximize ranch production by increasing the body size of the weaned calf for sale in the fall. For that reason, since the 1970s ranchers have adopted the following schedule: calving early, February and March, in order to sell older calves in October. However, getting a lactating cow ready for breeding by the June breeding season is a very expensive proposition in terms of supplementing its diet. Therefore, rather than harmonize the highest metabolic

demands of cattle, beginning with lactation, with the time when grass is most nutritious, this agricultural strategy has further distanced ranching from a solar economy.

Aside from the casualties of the maximization of production, there are nonetheless some local ranchers who found a niche where they would prosper. Cal is at 83 years of age the oldest old-timer in the Twin Butte area to be actively ranching. He has built a good-sized ranch from humble homesteader beginnings. He used to drive a horse-drawn wagon or a sled to the Waterton Park village to deliver fresh milk for his father, a dairyman, and return with the kitchen refuse of the Prince of Wales Hotel to feed a sizable pig enterprise. The smell of the steaming pig slop used to attract bears for miles and Cal is proud to say that he shot many dozens of them – over two hundred at last count, so he claims. Cal was nonetheless the first local rancher to sell a conservation easement to the Nature Conservancy of Canada. Cal is unmoving and even a written contract will hardly budge him in his ways. But it so happens that he does not want the countryside to change any more than he wants to change his ways. He raises old-fashioned Hereford cattle – some of them old enough to vote – and uses machinery that an antique dealer would covet. And he is frugal: he has yet to put together a full set of wrenches to make repairs and his entire tool kit for fixing fence is a claw hammer. Granted, carefully planned obsolescence is part of his program for fences; it allows him to graze the ‘long acre’ by the roadside and his neighbor’s grass on a regular basis. He is also famous in local annals for having poached grass in the National Park for years until the exasperated chief warden built a brand new barbwire fence in the early 1980s. Also, Cal is a workhorse, and his neighbors have concluded he is immortal. His only daughter and son-in-law have long since escaped to the city. With some help, Cal knows he could raise more than the 130 head of cattle he keeps, but he figures

that the wage and keep of a ranch-hand is the equivalent of the net return from one hundred cows. So Cal works alone. But he makes money ranching like almost nobody else can – the neighbors suspect that he prints counterfeit bills in his shed. But again, there is a good reason why he is the last rancher to use small square bales exclusively. To begin with, he cannibalizes the neighbors' machinery graveyards for spare parts, but more important, with small bales he can tailor to his exact specifications the ration he delivers to his small groups of cattle during winter, separating old cows, young cows, and weaned calves, and customizing diets accordingly. By comparison, ranchers feeding large bales use much more than they anticipate; to wit, *a lot more*. Also, Cal distributes haystacks in each of the fields he uses to feed cattle. This way, if snow is too deep, he can always in the worst of circumstances ride his horse to his stacks and throw bales to his cattle from the heap. Sure, he is ready to face another 1906 Armageddon winter. But most of the time, he drives his beat-up truck cross-country at a snail's pace from one haystack to another, mourning the death of his trusty team of horses. Cal indeed masters the art of working small, slow, cheap, and apparently forever. Conversely, other ranchers hurry with the latest turbo-charged pickup truck to feed cattle before roaring to town to work at a job to meet their monthly truck payments. Finally, it could be said that Cal has a most unusual advantage, apart from being immortal: he owns the oldest irrigation license in the county and the only one in the vicinity. During dry summers, he uses tarps to divert a mountain creek and irrigates his hayfields with resulting floods so that he has a bumper crop when drought affects everyone else, faced with a terrible premium to ship hay from afar. Otherwise Cal spends the summer riding to keep a closer watch on his cattle than anybody else. All told, within the parameters of makeshift agriculture and by stretching the limits of aging and depreciation,

it could be said that Cal is a living paragon of the old homesteading ways. The proviso, however, is that neither age nor depreciation can be dodged forever, no matter what the legend says.

Kevin (a pseudonym) is the antithesis of Cal, but he is the only other truly prosperous rancher, at forty-eight years of age in 2012 he was the youngest ranch operator in the area (three younger women have become head of their family ranch since). His success, however, is also a measure of the difficulties encountered by most local ranchers. While contradicting the logic of a ranching solar economy all the way, he saw opportunity where others foundered. A rancher faces a dilemma when confronted with the realities of depreciation and diminishing returns. On the one hand, hayfields have a lifespan of ten to fifteen years before they have to be cultivated again: the stand of forage is exhausted and the soil surface is so covered with molehills that the haying operations have to slow to a crawl. On the other hand, agricultural technologies have so changed since the 1980s that the replacement costs of a line of machinery hamstring a small farming operation. Ranchers then have to buy hay instead, thereby paying for inflation indirectly in addition by incurring high shipping costs; or else they can hire the work done by a custom operator. Kevin is the 'go to' operator in the Twin Butte area. And since the cumulative cost of getting all the agricultural work done in a custom way almost obliterates gaining any returns from the land, many small ranchers have opted instead to rent their land to Kevin. Therefore, benefitting from economics of scale – having a lot of work on a lot of land for a lot of machinery – Kevin has expanded his cattle herd at the same rate as he has streamlined his farming operations with the latest of sophisticated machinery. Having assembled the largest herd in the area, renting and buying much land on the way, and

having no time or inclination to ride a horse, this son of a modest homesteader has now eclipsed the sons of yesteryear's local ranch barons.

This profile of development may convince the unwary observer that some inexorable logic is at work that spells doom for natural rangelands. Kevin's hybrid operation is indeed a model for a landscape patchwork of enclosed pastures where cattle are stationary, interspersed with cultivated fields, and where tractors reign supreme. But it is a poor analysis to mistake for evolution a trend that conjoins a local history of ranching with a regional history of agriculture. To begin with, it does not take into consideration several factors that become apparent at a different landscape scale. In big ranch country, for instance, the trend has gone in the other direction, with many ranches using micro-mobility and actually strengthening their linkages to a solar economy. For instance, the a7 ranch, a very large ranch by small ranch country standards, has completely overcome its dependence on hay and its mobile herds graze year-round instead – with the occasional help of a large snowplow, like Hatfield did early on. The a7 cows calve in May and June when the nutritional value of the grass is at its peak and calves are grown on the ranch until nearly ready to butcher. Its hayfields have regenerated after the ranch converted them into permanent pastures and sold the machinery, buying concentrated by-products instead from the grain industry in central Alberta to supplement – very modestly – the winter diet (see LaRocque 2014).²¹

²¹ The author oversaw the period of transition at the a7 as ranch manager during the latter part of the 1990s.

I will return to the strategies described in this section, but it is enough for now to illustrate how land uses have conflated and how practices have reabsorbed ranching into agriculture, but not inexorably. The relevance of this will become more obvious further along in the thesis when the conservation of rangelands and wildlife comes into play. And most important, the counterstrategies suggest alternative scenarios that organizations like the Nature Conservancy of Canada need to consider especially now that they own property rights in these landscapes.

1.3 Mode of production, property rights and science

In this last section of Chapter 1, I explain another reason why ranchers sought an alliance with the Nature Conservancy of Canada in order to avoid retiring completely from ranching. Through this alliance, ranchers have, at least on paper, relinquished their independence since they have to answer to people who have very different ideas about appropriate land uses and practices. For its part, however, the conservation protagonist has literally bought into quandaries of its own, while relying on a unified Science that is disparate both in theory and in practice.

Modes of subsistence, explains Roy Ellen, are

necessarily embedded in particular webs of social and ecological relations. Every such web may be conceptualized as a specific *mode of production* situated in historical and evolutionary space, and through which humans socially interact in order to produce, circulate and consume things or images accorded with value (Ellen 2003 (1994):198 italics the author's).

This section of the chapter proposes that ranches (and conservation entities) struggle with problematic relations of property on the one hand, and on the other, expert knowledge is still too tentative for resolving issues of ecological relations adequately. Earlier, in the introduction, I explained how the livelihood crisis of ranching cannot be attributed to a situation of open access to land as some anthropologists have proposed (Broden and Greenberg 2003). Land is the very stuff of property, *real estate*, in capitalist relations of property, and that goes for ranchers and for buyers of recreational and conservation

properties alike. The conflict in question does not stem from the absence of regulations under open access, but from the regulatory process itself. Regulators face a choice between keeping a landscape intact or making it available for residential development. The main reason why the Nature Conservancy of Canada has intervened in the affairs of ranchers, officials have explained to me, was directly related to regulatory issues. The Council of the Cardston County in the vicinity of the Waterton Lakes National Park has facilitated the subdivision of ranches and it is plausible that future Councils of the Municipal District of Pincher Creek will revise decisions that have heretofore prevented runaway land subdivision. However, that does not explain why so many ranches came up for sale at once in the 1990s. Cultural ecologist John W. Bennett (1969) had extolled the stability of the ranching society in the Canadian West. Since the mid-1900s, however, there has been a sea change in the context of the social adaptive strategies that he observed, and I submit that the current instability stems in part from the dysfunction of relations of property internal to ranching.

In the name of the father

When J. W. Bennett studied the cultural ecology of agrarian livelihoods in western Saskatchewan during the 1960s, he concluded that ranchers were basking in successful “socioeconomic adaptation” (1969:186-192). The social organization of ranching was founded on patrilineal succession and patrilocality, the same as ranching in the western U.S., which Jill Derby described most succinctly as “patricentric” (1988). For lineages to persevere, most of the offspring had to relinquish their claim to the estate to make way for the chosen son. In Bennett’s study, ranches were based on indivisible government leases

and had to be transferred whole, but ranches are almost exclusively on deeded land in the Twin Butte and Cardston areas so transfers of land are not obliged to privilege a single buyer only. Nevertheless, at the time of my study, every rancher in the area was either the youngest or second youngest son (several had up to five sisters and brothers preceding them).²² By convention, a daughter had to leave her ranch of origin either to migrate to the city or, in most cases, join another ranch as a spouse where she would take up a subordinate role, and, if all went according to plan, produce sons for her husband's patrilineage (Bennett 1969:186-192). For a daughter to take over from her father is a recent phenomenon: locally there had been only two such instances by 2010 and uxorilocal residential arrangements had failed on both counts: two have divorced and a third one who was imminently to inherit has had an absentee boyfriend.²³ Unlike a daughter-in-law, a son-in-law is perceived as a usurper, especially if he brings newfangled ideas with him and challenges paternal authority.

With land values skyrocketing over the last thirty years, the other potential heirs saw the chosen son(s) as favorite(s) who stood to inherit a fortune. The willingness from

²² There are no set rules about selecting the next patriarch(s), but as Bennett suggested, tensions are high between fathers and sons, and the youngest ones do not chafe under paternal authority for as long and as much as older brothers who might elect to leave. Also, fathers are more likely to be more lenient towards the youngest ones if the others have already gone.

²³ There were no sons to take over the ranch in these instances. In cases of uxorilocal residence, the son-in-law would join his wife on the ranch (without living under the same roof as his in-laws.) In another case, the couple moved out once it became clear that the son-in-law was a 'glorified ranch hand', and the father was going to charge an inordinate rent for the ranch upon retiring (over half of the gross revenue). In a social environment of patrilineal succession, such arrangement is uxorilocal, as distinct from matrilocal, and is considered untoward since it heralds a change in the agnatic lineage of the ranch (for semantic clarification see Castro and Fausto 1993; Goulard 1993-4).

the part of the other siblings to forsake their share of the value of the estate for the sake of the family's ranching legacy went on the decline, and beginning in the 1970s, ranch parcels transferred to heirs who in fact had no ranching ambitions. At first, siblings rented the land back to the *bona fide* ranching brother, but later in life they had no qualms about selling out, and with divorce settlements compounding the situation, the capacity to hold ranches together nosedived in the 1990s when many ranches subsequently came up for sale. In other cases, to the great dismay of less fortunate siblings, the chosen sons who had inherited most of the estate sold most of it (not necessarily to the NCC), pocketed the money and leased the land back.²⁴

Moreover, the decline has been inexorable for economic reasons. It used to be that fifty cows was enough to make a living, older ranchers say, then it was one hundred, then two hundred, and now there is no telling because of the slim margin of profit realized by producing cattle.²⁵ Ranching has declined as a result: the NCC's Waterton Park Front Project counted about fifty properties but less than a dozen working ranches, many of them part-time operations.²⁶ With their ranching revenues regularly failing to meet the needs of operational loans, operators have been forced to sell assets and are in no position to buy

²⁴ In some cases, the land was transferred to the chosen son before the father passed on; in other cases, widows did the same to follow the wishes of their defunct husbands and keep the land out of the will.

²⁵ The operational costs of ranching in the area are higher than elsewhere because of the expense of feeding cattle hay for six months every winter, sometimes more due to late spring and early fall snow cover. Other studies showed that similar mountain ranches in Montana were unprofitable (Pearce 2004).

²⁶ The general area south of Pincher Creek counts less than fifty working ranches; the number is difficult to ascertain considering that some ranchers have leased their land to others and many ranches have also turned into hobbies, a transition that is difficult to identify other than by the size of the herd or the seasonal influx of short keep cattle during summertime.

out other heirs. That compound situation has affected local ranches as a whole. The flurry of ranch sales, then, has less to do with a newfound compatibility with conservation than with the prospect of another lease on ranch life.

A shotgun marriage

Since any mode of subsistence is nested within a mode of production and embedded in its ecological relations, as Roy Ellen puts it, the current challenge for ranchers is to reach a common understanding with the Nature Conservancy of Canada (NCC) about the status of ecological relations under the new distribution of rights in property. Granted, a makeover of relations of property was necessary to restore a shaken social edifice. Sometimes ranchers were forced to sell their ranch even if they did not have the opportunity to negotiate leasing it back. Inevitably, there were lingering consequences of the nuptials for new bedfellows in property rights.

As J. W. Bennett saw successful socioeconomic adaptations, ranchers had adjusted to the particularly harsh conditions on the prairies by finding ways to conserve resources while pursuing agrarian development. This said, people do not merely adapt *to* intractable circumstances, but they adapt along *with* the entire social *and* ecological edifice-in-the-making. These changes, then, are co-transformative and co-constitutive processes. When the interspecies relations I first described as ecological habitus merged with the mode of subsistence that emerged subsequently, the cumulative effects were not benign, especially not for large predators. And further changes are afoot for the ecological relations of the mode of production, which, as I understand them, pertain (a) to the formalized relations

between people *about* interspecies relations and (b) the appropriateness of the avenues taken by extractive activities. As Arun Agrawal (2005b:154) puts it, social norms make up the “unwritten rules of the game”. But at face value, it is also the function of formal social institutions to order how the actors and their relations are defined. And ranching livelihood and resources are matters in which scientists have gained considerable influence via explicit written directives. Property rights and science are the two pillars of the Nature Conservancy of Canada for claiming legitimacy.

Throughout the thesis, I address the scientific literature on various ecologies, especially of grasslands, bears, wolves. But unlike J. W. Bennett, who took the word of scientists as definitive, I approach the scientific viewpoint like any other any other cognized model of reality, in Roy Rappaport’s terminology (1984 (1968)), not a privileged operational one. I investigate the ways that people on the ground negotiate in order to design, integrate, amend or subvert attempts to protect elements of the environment; and also the ways that scientists devise sets of practices and protocols that inform policies. I include scientists alongside other people vying to promote certain interests. And in the case of range science, its history suggests that it was elaborated in order to facilitate the state administration of large land assets with simple top-down directives (see also Sayre 2003).

The main tenet of North American range science

According to mainstream range science, the ‘stocking rate’ is “the most consistent management variable influencing both plant and animal responses to grazing” (Briske, et

al. 2008:5). Accordingly, one Animal Unit Month (AUM) is the expression of the volume of forage consumed by one animal unit (an adult cow) in the course of one month; and the stocking rate is expressed as a measure of AUM per unit of space. Therefore, a stocking rate of 0.5 AUM/hectare, for example, refers to an allocation *per hectare of pasture* equivalent to 50% of the volume of forage grazed by one cow in the course of one month. One cow would be allocated 2 hectares if such stocking rate applies to a one-month grazing season; for a one-year period, one cow would require an allocation of 24 hectares, or 12 hectares in the usual bi-modal arrangement when the stocking rate applies to a six-month 'grazing season' followed with a feeding period just as long.

A classic long-term experiment at the Agriculture Canada research station in Staveland, Alberta, has demonstrated that the continuous grazing method is the gold standard of range management (Willms, et al. 1985). Continuous grazing refers to the practice of releasing a given number of cattle on a given area of pasture for an extended period of time, in this case, the six-month grazing season that follows a conventional bi-modal configuration. The diagram below (ibid:221) is a topographic illustration of the experimental fields:

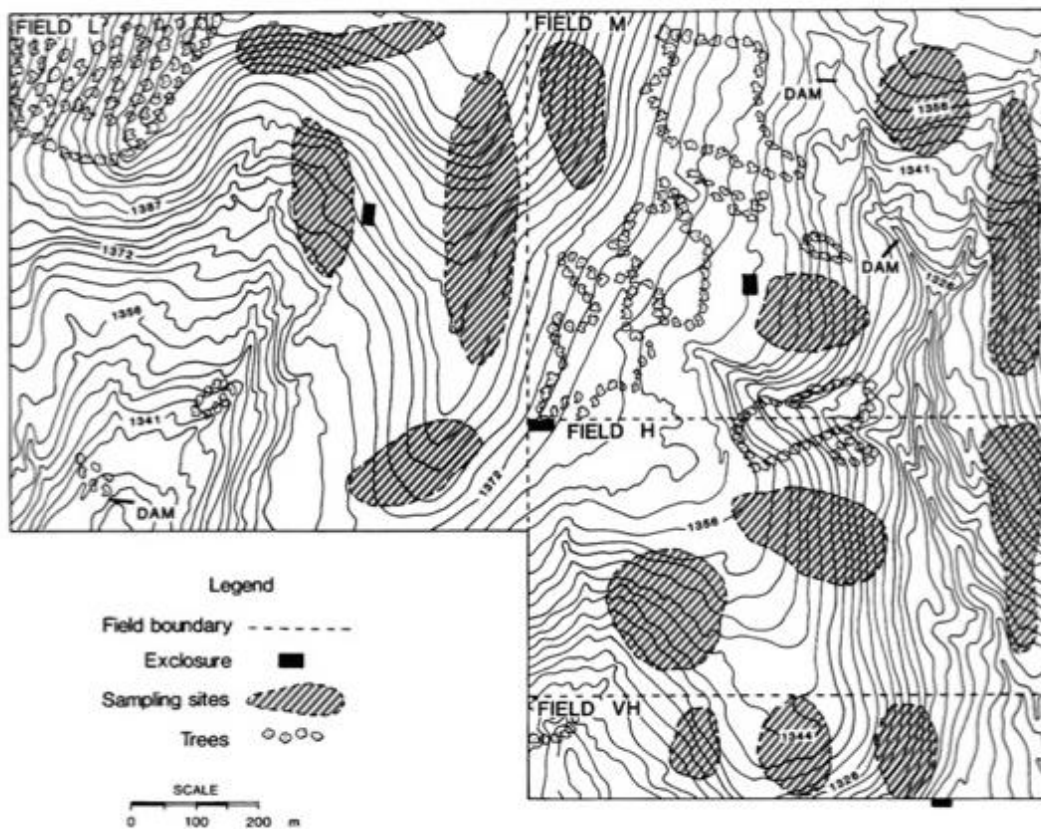


Figure 1.1 Topographical diagram of the Stavely research station experimental pastures (Willms 1985:221), reproduced with permission of the Society of Range management.

Since 1949, researchers have stocked four pastures (16, 32, 48, 65 ha.) for six months every year with 13 cow-calf pairs according to very heavy VH, heavy H, moderate M, and light L stocking rates respectively. After several decades of careful measurement, they concluded that the light stocking rate (Field L) had achieved the best range condition; very heavy (Field VH) and heavy stocking rates (Field H) had led to a drastic decline of range condition. The range had declined under the moderate stocking rate (0.73 AUM/ac or 1.6

AUM/ha) (Field M), but since the condition remained 'good', the research station recommended it for stocking the 'Rough Fescue Grasslands' (Willms, et al. 1985:220).

The season-long continuous grazing method, by this way of thinking, is a simple matter of identifying the proper stocking rate and turning out the right number of cattle. And if it were possible to extrapolate findings from small experimental plots, ranching could indeed be a simple unified world of practice with slight adjustments according to type of grassland. But it is a bit more complicated than that. Since the 1990s, the professional range management milieu in Alberta has divided the natural grasslands into several zones, each with several sub-regions (Adams, et al. 2003b; Willoughby 2001). Also, the NCC Project stands at the junction of several sub-regions. In the Foothills Parkland sub-region alone, taxonomists have classified over thirty reference plant communities, each with multiple sub-types of modified communities, and agrologists (a term in the range management milieu assigned to the relevant expert) have assigned to these a distinct 'ESSR' recommendation (DeMaere, et al. 2012).

Ecologically Sustainable Stocking Rate (ESSR) represents the maximum number of AUMs for a given plant community or vegetation polygon that can be sustained without causing a downward trend in rangeland health (Alberta Government 2004:20).

Since foothills ranches are rather like mosaics of plant communities – let alone mosaics of land uses – the method requires a high-wire act of approximation. As official procedure has it, it is the job of an agrologist to identify the various 'vegetation polygons' within an assessed area and to make a tally by adding up the theoretical ESSRs of every piece of the

puzzle; the total is then reduced by various factors: a 'safe use' factor (for carryover), a 'management factor' that reflects the producer's capacity to distribute grazing effectively, an 'access factor' to take in to account the effects of topography on grazing activities, a 'short-term factor' to take in consideration the effects of drought or fire, and various other factors (see Alberta Government 2004).²⁷ The final result is a 'short-term grazing capacity' expressed as an AUM per acre or hectare value for the entire area in question (ibid). The stocking rates recommended by this averaging procedure are kept very conservative to stay on the safe side in case of dry conditions, often adding up to a small fraction of the initial ESSR capacity. Given that considerable rangelands in Alberta are situated on Public Lands and the mandate for each government agrologist to oversee the assessment of over 100,000 acres (or 40,000 hectares) yearly, it is due process to assess the multiple factors during a once-a-decade visit to each grazing lease. That procedure has since set the standard for assessing *all* rangelands. In typical top-down bureaucratic fashion, it has become commonplace for agrologists hired as consultants to produce thick reports with rudimentary recommendations, followed, perhaps, with a conversation with the client if it is requested.

Another complication of the continuous grazing method is the damage done to riparian areas when herds graze all season long in the same pastures. While experimental plots like at the Stavely Research Station use water troughs and artificial dugouts, ranches have kilometers of stream banks with creeks and rivers to contend with, not counting the ponds. Riparian ecologists recommend installing expensive fencing to protect these areas.

²⁷ Incidentally, agrologists estimate that "livestock rotations" reflect favorably on the manager's capacity to distribute grazing activities evenly (Alberta Government 2004).

Then, again, wildlife ecologists frown on that because of the loss of habitat connectivity (see LaRocque 2014).

Alternative methods strive to resolve this by moving the herds (a) to distribute grazing activities evenly; (b) to adjust grazing periods on-the-go to fit the capacity of plant communities seasonally; (c) to avoid exposing riparian areas to prolonged occupation; and (d) to provide recovery periods for plants. By scientific standards, however, such practices amount to the controversial 'rotational grazing'.

In this regard, by convention, range scientists dismiss any kind of organized micro-mobility, arguing that these 'rotational' or 'skim' grazing schemes are overrated (Briske, et al. 2008). An eminent group of range scientists concludes that

...[t]he rangeland profession has become mired in confusion, misinterpretation, and uncertainty with respect to the evaluation of grazing systems and the development of grazing recommendations and policy decisions (Briske et al., 2008:11).

The caucus of scientists follows with a recommendation to cease the testing of micro-mobility in favor of defining set stocking rate guidelines. By the same token, however, the summary dismissal betrays a kind of epistemological slippage internally between scientific prescription, administrative implementation, and on-the-ground practice. Every expert baseline report I have read displayed exhaustive range inventories; they were very scientific in that respect. Outside the purview of Public Lands, however, commissioned expert reports provide at most the recommended ESSRs for the plant communities present, leaving to administrators the task of carrying out adjustments of

short-term grazing capacities. This high-wire act, as characterized earlier, is further complicated by the yearly fluctuations of forage production. The crucial shortcoming is that by the time these expert reports reach customers like the Nature Conservancy of Canada (NCC), recommendations are invariably limited to barebones AUM values devoid of any explanation for the calculations therein. Invariably in these reports, there is no indication if these are ESSRs or short-term grazing capacities, and no clue about the coefficients used for the 'factors'. All told, considering that baseline reports are very expensive, customers end up rather short on guidance for enacting science-based conservation.

Karl Marx's Second Nature

In short, at the heart of the subtext for the protection of nature in southern Alberta, there is no more pristine First Nature to be found but only Second Nature, as Marx and Engel predicted in the mid-1800s for the entire planet (see Biersack 2006:14). Ranching has been instrumental in heralding a Second Nature for grasslands. Natural sciences, for their part, have not been averse to ranching; quite the contrary, grasslands were renamed rangelands accordingly. Rather, the understanding that ranching has 'evolved' and 'adapted' is most convenient given that the language naturalizes the presence of cattle. Henceforth, rangelands are said to be natural regardless of the status of its wildlife. With the ecological clock conveniently reset, it is as if livestock had roamed these landscapes since (ranch-)time immemorial. Farfetched? Hardly. The upshot is that an initiative to protect nature has to contend with Second Nature and that she prevails. An illustration: the Sierra Club of Canada has spearheaded a citizen initiative to formalize the protection of

an area designated by the Alberta government as a Special Place (Castle Special Place Citizen's Initiative 2009). The blueprint for the proposal did entrench the rights of ranchers in the protected area since grazing was considered a 'natural' process in the absence of bison, which illustrated, in the sphere of nature politics, that cattle were adequate substitutes regardless of actual practices. In vain, because with support from local and the Conservative provincial governments (see Alberta Government 2012a), local ranchers sabotaged the citizen initiative, in large part out of fear that the protection of wildlife, grizzly bears especially, might jeopardize bovine prerogatives. The downfall of the Conservative government regime in 2015 was to cause a change of policy vis-à-vis the Castle Special Place (without threatening ranchers' prerogatives), but until then, the citizen initiative was shelved, and it is rather telling that the key objectors to the Citizen Initiative were ranchers all along, especially those who had signed conservation easements with the Nature Conservancy of Canada.

As it stands, ranchers – their cattle that is – have, *prima facie*, the right to be there and take precedence over wildlife, regardless of the objections of other citizens. That entitlement has been very much facilitated by designating most grasslands and other natural grazing lands as pasture for cattle. Entrenched with the designation of 'rangelands' was a baseline that witnessed grasslands over much of the western parts of the continent become a bovine habitat free of large predators. In the process, vast tracts of public land had already been badly damaged, and it was not before the reputedly inexhaustible 'sea of grass' was nearly emptied in the late 1800s that the first experimental stations were commissioned to devise an off-the-shelf model for arm's-length administration of U. S. Federal lands in the West (Sayre 1999; Sayre 2003). The sequence of circumstances that

preceded the birth of scientific management saw (1) conditions of chaotic land use, (2) a crisis of land administration and (3) the emergence of enclosed pastures as a solution to unregulated livestock mobility. Historically, then, range science was an artifact of several breakdowns. Thereafter, bureaucratized knowledge has trumped other knowledge input if it did not concur with paradigms devised earlier in ad hoc fashion; likewise, divergent scientific findings have been ignored if they posed any risk of impeding administrative expediency (Sayre and Fernandez-Gimenez 2003:1980). For that purpose, the concept of 'carrying capacity,' so definitive in range science, was borrowed from nineteenth century chemistry experiments to begin with and applied *a priori* as the key element in the scientific study of herbivory (Sayre and Fernandez-Gimenez 2003:1978, 1983).²⁸ The early 1900s saw the convergence of free-ranging habitus in the West, a trend in scientific research for which the concept of 'carrying capacity' was the beacon, and crises in land administration faced by the federal governments of the U.S. and Canada. The upshot was that the practice of turning cattle loose on public land became entrenched as a full-fledged institution with scientific backup.

All of this brings into question the wisdom of a partnership between the Nature Conservancy of Canada and ranchers. Can nature in the Alberta Foothills be protected under a ranching regime? This thesis investigates that question, and, from a public point of view, the jury is still out. Alternately, it is arguable that, regardless of ranching, prospects

²⁸ Chief amongst the assumptions built into scientific models, Sayre and Fernandez-Gimenez write (2003:1983), "was a fixed conception of carrying capacity, which was borrowed, according to Zimmerer (1994), from 19th century chemistry experiments involving cultured organisms in carefully controlled laboratory settings". This paradigm has since been challenged by a 'new ecology,' based on the dynamics of ecological disequilibrium (Behnke, et al. 1993; National Research Council 1994).

appear grim under the current administration if the trend in the recreational use of Public Lands is any indication. Large areas of the Alberta Foothills accessible to the public are invaded year-round by off-road vehicles, and the cumulative effects have gone far beyond what the Public Lands bureaucracy has for capacity to control, even within the narrow mandate it has. By comparison, ranches are safe havens, to the extent that the owners are disposed to that effect. As the next chapter elaborates, this is what the Nature Conservancy of Canada is betting on.

Part II Amongst Friends

Chapter 2 The Nature Conservancy of Canada: a backgrounder

The Nature Conservancy of Canada is a not-for-profit organization devoted to the conservation of natural landscapes across southern Canada (Freedman 2013), a particularly daunting challenge considering that most Canadians live there (Statistics Canada 2007). In this chapter I emphasize that the *raison d'être* of the NCC is synonymous with the acquisition of a land portfolio, bearing in mind that southern Canada is for the most part under private land tenure. Although it constitutes a very small proportion of the country, the southern latitudes are nonetheless very diverse in terms of ecosystems, from ecological communities at the local scale to the scale of ecoregions and ecozones (Environment Canada 1996; Wiken 1986; Wiken 1996). The proportion of these areas that is representative of relatively intact ecosystems is even smaller.

Environmental organizations usually rely on advocacy to pressure various levels of government to protect the environment on behalf of the nation. Governments have been reluctant, however, to expand the network of protected areas where it is necessary to expropriate landowners. To take up the challenge of protecting natural areas under private land tenure, the NCC entered the fray through the land market and established itself as a conservation landlord. Of course, it has no power of coercion like the government to acquire a portfolio of land parcels large enough to be representative of critical natural ecosystems across southern Canada. The NCC has relied instead on donations, purchases and conservation easements. Only recently has the NCC started to purchase lands or conservation easements.

What is a conservation easement?

By the NCC definition, a conservation easement is a “voluntary, legal agreement between a landowner and conservation organization or government agency that permanently limits uses of the land in order to protect its conservation values”.²⁹ It is “a particular kind of statutory instrument designed for conservation purposes and given legal authority to protect a range of ecological, cultural, heritage and other values” (Atkins, et al. 2004:7). Conservation easements have been option for landowners in Alberta since 1996 to preserve the ecological integrity and biodiversity of a landscape (Unger 2007:6). The conservation easement is “registered against title to the property which ensures that it binds future owners of the land, not just the current owner, since the conservation easement generally is intended to last permanently” (Atkins, et al. 2004:7). Hence, a conservation easement “runs with the land” and subjects the next owners to the same conditions (Kwasniak 1997; Kwasniak 2009:652). By statute, its purpose is to protect and conserve the environment, including biological diversity, and/or to protect natural scenic or aesthetic values (Kwasniak 2009:655). It is held by a qualified organization that is responsible for making a baseline ecological report of the property at the onset, and thereafter conducting annual monitoring, and defending the covenant in court if necessary. Conservation easements are usually donated but if sold, they are usually evaluated according to the difference between fair market value of the land, which is appraised professionally, and the value of the same land under the specific restrictions of the easement; altogether it usually amounts to the value of development rights (Greenaway

²⁹ http://www.natureconservancy.ca/en/what-we-do/resource-centre/glossary/conservation_agreement.html accessed July 9th 2013.

2000; Greenaway 2003). The NCC used as a guideline 20% of the market value of the land, although the development potential depends on the scale of development. In practice, the value of the easement very much depends on how much the buyer is ready to pay and how much the seller is ready to accept. It is negotiable until it is signed, and thereafter as agreed between the parties, subject to the original conditions. It is subject to the power of the Provincial Minister of Environment to extinguish at his/her discretion for the public good (Kwasniak 2009).

To buy is to protect

Such is the ground rule of private conservation. The NCC has adopted the U.S. model of The Nature Conservancy (TNC), an organization that specializes in real estate transactions as an avenue for conservation. Besides acquiring property titles, the NCC buys partial bundles of property rights under the legal form of conservation easements. Bill Freedman (2013:2), former National Board Chair of the NCC, explains: “direct-action conservation is like walking the talk to produce tangible results . . . It involves acquiring properties that are in good ecological condition, and then protecting them from intensive economic use in order to sustain their native biodiversity”. The NCC stake was initially founded on land donations for which the seller received a tax credit from the government for a specific fraction of the value of the land donated (Kwasniak 2009:657-8). Exclusive reliance on the initiatives of donors, however, made for an eclectic land portfolio and hit-and-miss conservation. To be strategic ecologically, the NCC assigned scientists the task of devising ‘blueprints’ of conservation for every ecoregion and ecozone across southern Canada (see

Riley, et al. 2007). This meant that the NCC had to acquire comprehensive property rights over large areas of key landscapes and in order to activate their plan the NCC had to raise private, corporate and public funds.

There are several dimensions to its involvement in the real estate business, each with its specific function. The NCC must address a broad audience to market the idea of conservation and raise funds; it must also promote the idea of conservation locally to find willing sellers and negotiate a mutually satisfying agreement; and it must ensure that the properties and easements it holds in trust are managed to achieve the ecological goals devised by its scientific committee. These functions are interdependent and there must be a positive feedback loop between them. Donations of funds are channeled to real estate coffers and as its portfolio of land under protection increases in size, it is broadcast as a showcase for the achievements of the organization, which in turn raises more funds, and so on. The commoditization of landscapes is thereby recruited to secure the protection of nature, but as will become clear, the task is more complicated than making purchases. Economically, landscapes are also sources of livelihood; aesthetically, they resonate for people who donate funds, and ecologically they fulfil important functions. They are used for resource extraction, and also as places for people to live in, identify with and protect, which makes them at once valuable and contentious.

The NCC also markets conservation in order to raise money. It uses its track record of real estate transactions to assert itself as a credible conservation landlord and subsequently leverages this social capital of credibility into tangible land capital. In other words, the NCC, a not-for-profit organization, is a marketer that garners credibility through

land stewardship to raise money and trade it on the land market to accumulate capital in the process. And to maintain the momentum of these revolving doors, the smooth operation of the Nature Conservancy hinges on the assumption that rights in the social sphere translate into the practice of conservation in the ecological one.

In most instances, the NCC adopts a hands-off rapport with its property, letting nature look after itself with minimal interference. But the Waterton Park Front Project is a landscape with a history of ranching. This was a ground-breaking precedent for the NCC as it was for the independent-minded local ranchers whose livelihood depends on property rights in land (Pearson 2007b). Their economy is in dire straits, however, and the prospect of a cash windfall has been most enticing to help them continue ranching. An elusive win-win scenario is therefore plausible that could achieve two lofty goals: a large-scale private project of conservation through the consolidation of a large cluster of private properties into an integral landscape, and a new lease on life for the community of ranchers therein. For this scenario to materialize at the landscape scale, however, crucial conflicts of interest must be resolved at the micro-scale between institutional buyer and individual landowners.

Controversy has mounted in the anthropological literature about the implementation of conservation through the intervention of environmental NGOs (ENGOS) and land trusts in local affairs, and it focuses on the ways this intervention can be toxic to local economies and deleterious to land-users (Igoe and Brockington 2007; Igoe and Croucher 2007). This critique must be attended to before I can build an argument that the

present case study differs and explain how the NCC conservation initiative has instead lost traction while local interests have gained ascendancy.

Nature Conservancies and Land Trusts: a pack of capitalist wolves?

Conservation organizations worldwide have come under heavy fire from all directions. Some critics attribute to conservation NGOs an omnipotence chalked up to capitalism. Conservation NGOs, or environmental NGOs (ENGOS), have proliferated since the 1980s, and some have grown into Big NGOs or 'BINGOs' (see Chapin 2004) that have spread across the globe. The Nature Conservancy (TNC) is one of the world's three largest BINGOs. These BINGOs are ambassadors of a new kind of capitalist production which some refer to as the "conservationist mode of production" (Brockington, et al. 2008; Garland 2006; Garland 2008).

This recent hybrid magnifies the powers of conservation organizations and gives capitalists newfound legitimacy to re-colonize the developing world, this time under virtuous guises. In a first movement, the plight of threatened species, lions, elephants, cheetahs, gorillas, wild dogs, Bengal tigers or any photogenic creature that pulls heart-strings or excites with fear and loathing, is used as a foil to invest landscapes with supreme ecological importance (see Brockington and Scholfield 2010:558). The rest follows in a predictable sequence: [a] media experts from the North use the best technologies available to create stunning documentaries – a bit of clever film editing that tampers with the nature of Nature is hardly reprehensible when it is for a good cause; [b] with graphic evidence in hand BINGOs solicit support to rescue Nature; [c] money flows into the coffers of BINGOs in

the North; and [d] makes its way to the South to open the doors of influential people; [e] landscapes thus deemed fragile in the name of endangered species are confiscated from local sets of users and transferred to trustworthy stewards, retainers to affluent nations; [f] the resources thus captured cater to the needs of vacationers, ecotourist entrepreneurs, researchers, and faraway audiences; and finally [g] fondness for such spectacles prods good ecological conscience into taking more action, making more gifts and sending more subsidies. And the cycle repeats itself as the North absorbs the South into a capitalist spiral of accumulation (Brockington and Scholfield 2010; Igoe and Brockington 2007). All the while, television menus in the North are replete with BINGO-type broadcasts, nature shows and documentaries that seldom make any mention of abuses perpetrated in the name of conservation. Whether BINGOs intend it or not, their interventions have conspired to rob rural people in the southern hemisphere of their capacity to decide the future of their landscapes (see also Brockington 2002; Nelson 2000; Nelson 2011; Neumann 1998; Neumann 2004).

This view proposes that the pursuit of conservation is *ipso facto* drawn irresistibly into the vortex of exploitation. It typecasts conservationists as mercenaries who recruit the omnipotence of capitalism as a weapon. It does not emphasize, however, that conservation is also recruited by those who govern, which means that it is necessary to unpack the complex networks of decision-makers and enforcers, and the decrees, laws and regulations they wield. Statesmen with self-ascribed powers of eminent domain in the southern hemisphere organize the confiscation of lands for international beneficiaries and direct a bureaucracy of henchmen to dispossess local land-users (Benjaminsen, et al. 2011; Kachika 2010; Nelson 2011; Sparks 2012). These internal agents, from heads of state to game

wardens, are not just instruments of international conservation. Surely, they carry out so-called conservation but they also accrue material gains in the process, in a descending chain of command. Conservation is rather an alibi for the latest opportunity in capitalist accumulation, and conservation takeovers become merely another form of resource extraction, like takeovers for the extraction of gold, oil, diamonds, teak wood, ivory tusks or ostrich feathers. Furthermore, conservation is a convenient greenwash for capitalist accumulation.

Since the mission of BINGOs is not confined to the South, it should follow that the mode posited by the critics of conservation might be prevalent in the North as well. Instead of a North South hemisphere axis, critics of The Nature Conservancy (TNC) in the U.S. emphasize a rural and urban axis of disparity. The Nature Conservancy (TNC), with headquarters in Arlington, Virginia,³⁰ operates in 30 countries worldwide but first cut its teeth as a colossal landlord in the U.S. where private property is a sacrosanct institution. In the northern hemisphere, land-users have better legal foothold to defend private rights to land, but formal property rights are no panacea for the small landowner.

The critics' perspective

The TNC is a charitable organization with tax-exempt status; it owned land assets valued at over 2.8 billion U.S. dollars at the turn of the century, controls more than 12 million acres in

³⁰ <http://www.nature.org/ourinitiatives/index.htm> accessed Nov 28th 2012.

the U.S. alone, and declared in 2000 an annual income of \$787 million (Findley 2003). Touted as an environmental savior on a planetary scale, the TNC has the blessing of powerful politicians and iconic public figures in the U.S. and receives generous funding from its largest banks and corporations. The TNC has multiple personalities. Champion of threatened species, it is opposed to the commercialization of Nature. Real-estate mogul, multimedia marketer, and wizard accountant, it also manages vast portfolios (see also Luke 1997). Scion of America's upper crust and darling of the public, it is also a homemade fiend, declares Tim Findley (2003): "a runaway predator that will turn on us in defense of its territory", "The Nature Conservancy is the wolf we raised ourselves, the grizzly we fed from the table". Under the benign guise of Nature champion, it also skulks as a real-estate scavenger in this view. Death taxes in the U.S. are as inevitable as death, and private landowners are often unable to shoulder the costly intergenerational liability. Small landowners surely cannot match the tax-exempt status of the TNC in the real-estate game. Cash-poor and land-rich, ranchers are particularly vulnerable. For several decades, 45% of U.S. ranches have sold during each decade (Gosnell and Travis 2005). Key ranches across the West have come under the control of the TNC or one of the plethora of land trusts it has spawned. The TNC exerted relentless pressure to squeeze ranchers out, accuses Findley, harassing them with intimidation, bad press, and other underhanded tactics. The TNC and other land trusts have also cajoled ranchers into signing conservation easement with suspect promises of perpetual security (Cheever 1996; Findley 2013). With the life draining out of their rural communities, many ranchers eventually quit and many parts of the western range are emptying of ranchers, leaving real estate agents, condominium developers, and conservationists to fight over the remains (Maestas, et al. 2002; Maestas, et

al. 2003; Sayre 2002). Thus it appears that in some respects a conservation mode of production has also emerged in the Northern hemisphere, exploiting different vulnerabilities than those characteristic of land users in the South. The combination of unfavorable tax laws for landowners and tax exemption advantages for land trusts has conspired to overwhelm such land-users as ranchers. In land trust parlance, TNC makes deals with 'willing sellers'. But for its critics, such deals are foisted on besieged landowners who cannot pay ransom to free themselves of bad policies.

The supporters' perspective

Literature that focuses on conservation easements concludes instead that the use of land trusts in the U.S. "has created a complex conservation situation that is poorly understood" (Merenlender, et al. 2004:73). Many U.S. ranchers are satisfied with conservation easement arrangements (Sayre 2005). The burden of easement is especially acceptable when ranchers' associations lead the land trusts that hold the easements afterwards (Brunson and Huntsinger 2008:143). The sentiments towards land trusts are generally positive and some say they receive universal approval (Cheever 1996). The "popularity of conservation easements has skyrocketed in the last decades", declares Vinson (2007:273), although this is the case mostly outside the ranching West.

The popularity of easements and land trusts in the U.S. is nonetheless peculiar in light of the fact that landowners would rather not relinquish property rights to begin with and prefer to retain full control of their bundle of property rights. It stands to reason that land tenure insecurity is a factor one way or another. For the present case study in Alberta,

tenure insecurity does not stem from the exaction of gouging taxes. The intergenerational tax levy in Canada is not a significant issue for farmers and ranchers. Insecurity rather stems from a more systemic crisis of economic and social reproduction. This said, there is no current sign that the Nature Conservancy of Canada (NCC) causes landowners distress, nor is there any evidence that by force of a conservationist mode of production the NCC rules a class of land-users, which is not to deny that it has accumulated considerable land capital.

It stands to reason that a party with considerable purchasing power is better positioned to negotiate real estate transactions than financially burdened sellers. And it follows that stringent terms for conservation easements and leaseback contracts would give the NCC considerable authority to implement land-use protocols. In the present case study, however, this has not obtained. To elucidate this, I will examine the marketing strategies of the NCC and borrow from its broadcasts of virtual nature to contrast its storyline with the dilemmas it faces on the ground during the process of landscape acquisition.

A lamb in wolf clothing?

To begin with, the NCC sells the idea that the landscape adjacent to the Waterton Lakes National Park was conserved until developers threatened to despoil it. The role of the NCC, then, is to maintain the status quo. This assumes that by keeping the landscape from fragmenting, ranching has been synonymous with conservation and on the strength of that logic the practices of ranchers received the NCC's full sanction.

The proliferation of condominiums poses an ecological threat and conservation initiatives must first attend to that (Cannavò 2007; Huntsinger and Sayre 2007; Maestas, et al. 2002; Whitson 2001). Residential development had not yet overwhelmed the landscape, and this is of immense importance. Land developers had been attempting inroads since the 1970s and the possibility of exurban encroachment was genuine. When the NCC got involved locally, many beleaguered ranchers had already sold quarter section parcels and a few had put their entire ranches up for sale. It was only a matter of time before the trend intensified and since it was more profitable to sell in smaller parcels, it was also just a matter of time before sellers would put pressure on the municipal councils to grant special permits for further subdivision. Therefore, when the NCC sought to buy land, the blueprint for negotiation was based on the anticipation that permits for subdivision would inevitably be granted by future municipal authorities. There were also precedents to evaluate what people were willing to pay for a recreational property. Agricultural production had no relevance in the assessment of property: ranchers say that since the 1960s real estate prices for land have far exceeded its agricultural value. Then again, the proceeds from land sales are all that ranchers have to show for a lifetime of toil, often several ancestral lifetimes since homesteading, to use for paying debts, for start-up capital elsewhere, for a retirement fund, and to give as inheritance (see also Pearce 2004). They were not about to part with land cheaply.

Since landowners would otherwise compromise their own interest as sellers, they put prices on land earmarked for conservation that reflect the value of land as if it were *de facto* subdivided. Unlike most buyers, the NCC was not after a single parcel but *all* of them in order to wrap up a targeted landscape, which put it in a weak position to negotiate. To

attract every potential seller, the NCC has been willing to pay a steep price, and to its advantage, it has also been in a position to sweeten the deal for sellers who wish to remain on the land. This has been done through very permissive terms in land-use protocols and lease-back arrangements. And these are extremely important sweeteners that set the tone for the NCC mission. The devil is in the details, the idiom goes, and no factor has been more pivotal than the NCC's inability to attend to the details of land stewardship, or its lack of attention thereto, in the spiral of events that followed. The eagerness of the NCC to at once accommodate and muffle its own agenda spawned a vicious cycle. The NCC still struggles to complete its purchasing program and meet the high expectations of sellers, but its bigger problem for the future has stemmed from the disaffection of local people with its conservation goals. The NCC was involved in the insidious cycle of acceding to endorsements and privileges that could not be undone but instead proliferated, unreciprocated. The NCC endorsed some practitioners as 'champions of conservation,' for instance, while it was common knowledge the endorsement was a sham. Yet when the self-same champion came to knock at the door for more privileges, the NCC was loath to turn him down for fear of bad press. Authority, then, was rerouted through revolving doors. The acquisition of property titles *de jure* did not confer *de facto* authority, and the sale of said titles did not extinguish that of the previous owners.

The Nature Conservancy of Canada has escaped the typecast of predator. It did not take advantage of ranchers facing economic hard times; it paid handsome sums for land and for conservation easements; and it did not exile anyone. The NCC preferred that ranchers remain on the land since it did not envisage itself managing ranches. The NNC

may be a little sibling of The Nature Conservancy in some respect, but it bears no resemblance to the predatory Nature Landlord that Tim Findley makes it out to be.³¹

The local jury is still out whether the NCC is biding its time until its acquisition phase is over and leaseback contracts come to maturity before revealing its real conservationist stripes. Conversely, it could be that the NCC squandered huge sums of money to assemble myriad land properties, frittering away in the process any authority to influence practices. I explained earlier that it is not ineluctable by way of economic logic that an investor with a lot of capital is better positioned to dictate the terms of a transaction than a cash-strapped seller pressured to liquidate assets. Otherwise, the NCC could have made a quick land grab, bought enough property rights from landowners adjacent to the Waterton Lakes National Park and in one fell swoop inaugurated a stringent conservation regime in its Waterton Park Front Project. That would be consistent with the revolutionary advent of a conservation mode of production. This has not obtained and the anomaly is no accident. Rather, a complex set of circumstances has steered the NCC away from the key nexus of decision-making. The dynamics of who gets to decide about land-use practices in the Waterton Park Front have multiple ramifications: economic as a matter of salesmanship and principles of the marketplace, to be sure, and also social through the inertia of a history of stewardship upheld by a faction of influential landowners, many of them dyed-in-the-wool traditionalists.

³¹ Wuerthner (2008) argues that conservation through easements and land trusts is more or less fictitious, and that it might be the TNC benefactors, big and small, and especially the taxpayers who subsidize conservation easement programs, who are vulnerable to a miscarriage of conservation.

Next, I will explain how the NCC sought to escape this predicament through the commerce of 'pristine nature'. And it is important to see this, which is effectively an escape from accountability, in its larger political and ideological context. I will later explain the ideological counter-production of the 'green cowboy' by traditionalists, which further imprisoned the conservation landlord in its own virtual production. The NCC was already compromised so it joined in the travesty. As for the political context, the climate of policy-making at all levels of government, municipal, regional, provincial and national, takes a very limited if not dim view of conservation. I submit this to water down somewhat the incriminating implications of what follows, conceding that the NCC was stymied regardless of its blunders.

The production of virtual nature

The NCC invested the Waterton Park Front Project with great conservation importance. It promoted the Waterton Park Front Project as a key portion of a narrow band along the eastern slopes of the Rockies. 'The Last Five Miles', it proclaims (in reference to a five-mile width), is "one of the most critical and endangered wildlife habitats in Canada," and "features the richest diversity of carnivore, small mammal and hoofed mammal species".³²

It is good salesmanship for the NCC to galvanize its client base with ambitious endeavors. Try, for example, to inquire with someone who has just received a written or email invitation from the Nature Conservancy of Canada to make a donation, and ask him

³² <http://www.natureconservancy.ca/en/where-we-work/alberta/featured-projects/last-five-miles.html>, accessed Nov 28th 2012.

about the meanings he extracts from this request. Let me call him Rob, one of the millions of citizens solicited to help raise \$500 million for the recent Force for Nature Campaign.³³ Rob is careful with his tax-deductible gifts. He goes online to inform himself before making up his mind about the request. After reading mission statement of the NCC, he glances over its gallery of accomplishments and the NCC's Waterton Park Front Project (WPFP) draws his attention. The Project has recruited a small community of ranchers to help secure the future of a pristine landscape at the foot of the majestic Rockies. The Project has been highlighted for several years on the NCC website, especially in 2004 when it was singled out as the prize achievement of "The Campaign for Conservation: Saving Canada's Natural Masterpieces" to raise \$200 million (NCC 2004:3).

Had Rob consulted the site before 2008, the Project was the NCC's national flagship accomplishment, the largest private conservation initiative in Canada. At the time, the Project page showcased a cowgirl on her horse holding a Canadian flag, with the mountains in adjacent National Park profiled in the background.³⁴

The NCC frequently updates its site to keep up with the growing scale of its purchases, and by the time Rob consulted the site in 2012 the NCC's largest conservation legacy was the 136,00 acre Darkwoods property in the Selkirk Mountains of British Columbia. Perhaps because the earlier tableau was not so natural and hinted of human

³³ See: <http://www.natureconservancy.ca/en/what-we-do/a-force-for-nature-campaign/> accessed July 9th 2013.

³⁴ The photo was retrieved from http://www.natureconservancy.ca/site/PageServer?pagename=ab_ncc_work_projects_waterton1 accessed November 12, 2007

hegemony, the cowgirl, the horse and the flag have exited the Project page, replaced by a panoramic view of the Park with a slice of ranch rangelands in the foreground.³⁵



Figure 2.1 Photo of Waterton Lakes online (see footnote below).

The NCC site invites Rob on a virtual journey towards the Waterton Lakes National Park skyline: “the mountains themselves are located within the boundaries of the park,” the website explains, “but the aspen parkland spread out before you is mostly privately owned ranchland”.

³⁵ See: <http://www.natureconservancy.ca/en/where-we-work/alberta/featured-projects/waterton-park-front-project.html> accessed Oct 14th 2012



Figure 2.2 Photo of Twin Butte rancher, from the NCC online

Approaching the National Park, the NCC site describes, you drive through “rolling farmland and soft ridges”. And the pastoral scene of grazing cattle and scattered homesteads encompasses much more:

The area is prime habitat for grizzly and black bear, cougar, wolf, moose, elk, white-tailed and mule deer. The Rocky Mountains are a vital natural corridor for these species. As the Rockies are narrow at this point, these animals need more space than

what is protected by the park. They live in the landscape outside of the park much of the year, as it is far more productive than higher up the mountains.³⁶

Rob is puzzled that wild animals, especially large predators, circulate with immunity in a settled area amidst farms and ranches, but the next paragraph reiterates:

Fortunately for these species, the ranchers who for generations have cared for the area surrounding the park are careful stewards of their land. Their sustainable use of the ranchlands has meant that many species continue to thrive here.³⁷

The success has been such, the site emphasizes, that the NCC Project and its partners won the 2007 Alberta Emerald Award for Environmental Excellence. The partners in question are wealthy philanthropists. The Garfield Weston Foundation from Eastern Canada has contributed over \$40 million to the Project, and the Poole family from Edmonton contributed another large sum.³⁸

The fundamental threat to the area, the site warns, derives from its attractiveness: “This beautiful landscape is now increasingly sought after by those who would like to live and play here”. In other words, Rob takes note, the NCC singles out residential

³⁶ <http://www.natureconservancy.ca/en/where-we-work/alberta/featured-projects/waterton-park-front-project.html> accessed Oct 20th 2012

³⁷ <http://www.natureconservancy.ca/en/where-we-work/alberta/featured-projects/waterton-park-front-project.html> accessed Oct 20th 2012

³⁸ http://www.westonfoundation.org/conservation/Pages/other_initiatives.aspx. See also http://www.natureconservancy.ca/en/what-you-can-do/learn-more/the-ark/deals-that-made-a-difference/alberta-waterton-park-front.html#.UUWk_RmBNiU. accessed March 16th 2013.

development, 'sprawl' (Cannavò 2007), or 'exurban encroachment' (Knight 2002b; Maestas, et al. 2002) as the outstanding menace. Rob suspects, rightly so, that the price for local recreational properties near the Park is exorbitant and he finds it ironic in relation to "those who would like to live and play here" that the race for acquisition pits members of the affluent class against one another. Lesser wealth evidently aspires to own a private mansion on the edge of wilderness but extreme wealth trumps such ambitions with a bid to conserve an entire landscape.

Rob is also a well-read conservationist. He knows about large-scale landscape connectivity (Lee 2007) and its importance for the genetic pool of large predator species. Wildlife must be able to circulate through narrow bottlenecks. The area in the vicinity of the Waterton Lakes National Park is such a bottleneck for the circulation of grizzly bears, wolves, wolverines and so on. And the NCC has plans to expand the protection of corridors beyond the Project perimeters northwards in the Castle Special Place and throughout the 'Last Five Miles' stretch along the mountains that separates wilderness from development.³⁹

Finally, Rob is also a scientist and aesthetic displays of nature do not satisfy him. Protecting the majesty of Nature is too glib an appeal unless it is supported with considerable baseline data and a systematic plan to satisfy the demands of effective ecological function. His further inquiries reveal a firm commitment on the part of the NCC to protect biodiversity. 'Biodiversity' is a vague notion, of course, but it points towards a

³⁹ <http://www.natureconservancy.ca/en/where-we-work/alberta/featured-projects/last-five-miles.html> accessed 3rd March 2013

better target than the fuzzier 'Nature'. More important, the NCC has commissioned scientists to design 'conservation blueprints' for Canada's southern regions. The NCC makes these available online as well.⁴⁰ The core of the organization's work across the country stems from the implementation of conservation plans in every ecoregion identified in the blueprints.

The NCC reaches out to millions of citizens like fictitious Rob, and most are not nearly as discriminating as I have painted him. Their cumulative contribution has tremendous potential nonetheless, which gives them a formidable presence. Before allocating funds or donations, governments and corporations calibrate their generosity with the public response to the funding drives of non-profit organizations. In 2008, the Federal government made a public promise to match donations to the NCC to the tune of \$185 million for the NCC to invest as it saw it in 'natural areas'.⁴¹ The task to conserve Canada's southern portion henceforth devolves in part to private concerns, besides that which is already under Parks Canada jurisdiction. In other words, the government is privatizing conservation.

The Canadian business world is also involved. The Investment Group Corporation made a donation of \$200 million to help the NCC reach its goals to raise \$500 million for

⁴⁰ http://www.natureconservancy.ca/en/what-we-do/resource-centre/conservation_blueprints.html, accessed Oct 14th 2012.

⁴¹ <http://www.natureconservancy.ca/en/what-we-do/conservation-program/>, accessed Oct 15th 2012

the Force for Nature Campaign.⁴² Paul Desmarais, Chairman and Co-CEO of Power Corporation of Canada, and Darren Entwistle, President and CEO of Enbridge Inc are prominent members of the select National Campaign team for the NCC Force for Nature Campaign⁴³ – note that in the recent annals of environmentalists Enbridge Inc. is probably the most controversial corporation in Canada.

Obviously, the stream of funding that sustains the NCC capacity to conduct its mission reflects its ability to cater to the expectations of a broad spectrum of interests. Yet the connection between the people recruited in conservation networks and the concrete places they invest in is tenuous and for the most part virtual. It relies instead on media broadcasts, the World Wide Web, glossy pamphlets, press conferences, documentaries, and so on. Ecological sites targeted for conservation are formatted in a predictable set of representations: accounts of landscapes in dire need of conservation; accounts of the looming threats; and accounts of the measures necessary to achieve a conservation goal at perpetuity.

Since the NCC is dedicated to the conservation of lands under private tenure, the NCC uses simple formulas to translate the protection of natural systems as an accounting of real estate properties. In its 2002 Annual Report the NCC describes itself as “an organization that cares for more than \$99 million worth of properties across the country” (NCC 2002:2). Its 2012 Annual Financial Statement shows that its net assets in

⁴² <http://www.natureconservancy.ca/en/who-we-are/news-room/investors-group-donation.html> accessed Oct 15th 2012.

⁴³ <http://www.natureconservancy.ca/en/what-we-do/a-force-for-nature-campaign/#9> accessed April 3rd 2013.

conservation lands and agreements rose to over half a billion dollars (NCC 2012). Yearly, the NCC displays report cards for its conservation efforts. As an example of the success the NCC aims to project, the figure below extols the 2007 protection achievement for its Alberta provincial chapter:



Figure 2.3 Sample page from a NCC Annual Report (See footnote below)

For a tangible testimony of its private conservation achievements, the NCC keeps a running tab on the number of acres, properties, and the total monetary value of its transactions. The NCC publishes this evidence every year, a facsimile of the criteria framework The

Nature Conservancy (TNC) in the U.S. uses for its annual reports.⁴⁴ Through it all, the scale of acquisition stands as a surrogate measure for the protection of natural areas and species at risk.

Granted, the NCC targets properties in southern Canada that hold ecological treasures by scientific standards. As for conservation plans, the conventional strategy has been to minimize human presence, aside, of course, from the study and contemplation of nature. Otherwise, human activities pass as a harbinger of destruction. Any kind of economic production is suspect and the extraction of primary resources is banned (see Cosgrove 2006). The Waterton Park Front Project, however, has uprooted the NCC from its zone of comfort. And to manage this, its spin-doctors have been busy. Gone is the aversion for the human footprint and extolled is the ranch, paragon of wildlife habitat.

Graphic landscapes and visual ideology

In order to spur an audience of prospective donors into action it is sensible marketing to broadcast stirring landscape images. People are relentlessly canvassed for good causes and visual support goes a long way to implant a slogan. For geographer Dennis Cosgrove, the very definition of 'landscape' stems from the manipulation of viewsapes to elicit specific perceptions:

Landscape is thus a way of seeing, a composition and structuring of the world so

⁴⁴ See: <http://www.nature.org/about-us/our-accountability/annual-report/index.htm>, accessed Nov 28th 2012.

that it may be appropriated by a detached, individual spectator to whom an illusion of order and control is offered through the composition of space according to the certainties of geometry. That illusion very frequently complemented a very real power and control over fields and farms on the part of patrons and owners of landscape paintings (Cosgrove 1985:55).

By way of illustration, Cosgrove (1985) evokes English estate owners who hired architects to craft landscapes for them so they could literally gaze down from their position of privilege. An emergent class of landowners in late sixteenth century England was bent on converting newfound prosperity into permanent social status. Architects not only built mansions but also the landscape that surrounded them.

And landscapes were intended to undergird a social architecture.

The movement drew inspiration from landscape artists who carefully selected linear perspectives to create special effects. Architects designed to highlight points of view that originate from a detached position. The design of English estates controlled the ways visitors accessed them and dictated what they saw such that their commanding views validated the aspirations of their patrons. For the prosperous landlord a landscape was not meant to partake in. Toiling in the gardens below was left to the menial class. And the newly wealthy also commissioned artwork to impress their achievements upon faraway viewers. A sure way to anchor a future line of descendants it is to have a landscape tailored to boost prestige and immortalize it in painting.

Nature's spectacle in the Waterton Park Front Project serves a purpose similar to the design of English landscape artefacts. To mount a crusade to rescue Nature from

despoilment, it must be displayed in its most pristine accoutrement. Its likeness to a grand estate does not transpire from the calculus of an engineer. Nature poses instead as the ultimate architect and the uncanny harmony of its compositions transcends the certainties of human geometry. The commanding views it affords confer upon the NCC landlord the kind of legitimacy its aristocratic counterparts arranged through manufacture. And viewscapes readily stand as surrogates for prestigious conservation, which simplifies the task on the ground immensely.⁴⁵ Furthermore, it befits the wealthiest elite to finance the purchase of a grand landscape with the clear understanding that it does *not* appropriate it for personal consumption. Legitimacy thus springs from a spectacle that is a gift to the public. Rooted in high moral ground, the safeguard of Nature far supersedes the selfish ambitions of people who merely wish 'to live and play there'. All the more urgent that the proliferation of ostentatious country mansions portends widespread sprawl. Hence a patron of Nature is by rights most virtuous if s/he is absent, and the NCC wagers that this kind of affirmation sells well with donors.

Is it not a bother then for the NCC, unlike for the aristocratic estate owners of the time, that there is so much going on in the landscape that escapes their benefactors' virtual gaze? It seems imperative to know how much conservation a \$40-million-dollar

⁴⁵ Viewscapes are in vogue as a measure of conservation. At the January 12, 2010 meeting of the Council of the MD of Pincher Creek the following resolutions were passed to inform the creation of a protected viewscape defined by geographic coordinates by the cone of vision between specific compass bearings. Any visible development required an environmental assessment. The remarkable aspect of this resolution is that the Council subsequently voted against a concrete conservation initiative proposed by a local coalition of citizens and approved instead the clearcut logging of the Castle Special Place which most ratepayers opposed. Ostensibly, the conserved viewscape did not suffer alterations.

investment in land buys. Is it not also fair to ask what kind of conservation it generates beyond the aesthetics of Nature and the cosmetics of virtue? As Dennis Cosgrove forewarns about the role of landscape in visual ideology, the evocation of an “image of order and proportioned control” serves an ulterior motive “to suppress evidence of tension and conflict between social groups and within human relations in the environment” (1985:58).

Purchasing a coveted viewscape has proved very expensive for the NCC as it met with ruthless competition. Some landowners sell only to the highest bidder; some object to conservation no matter what; and others, unawares, sell at a discount to local buyers who are faster than the NCC to find out what is available.

An irresolvable conflict of interest?

The chances are very slim that a donor like Rob or the CEO of the Investment Group Corporation will make a trip to the Waterton Park Front Project. For the CEO, it is more important that the news of their donations attracts investors with a green conscience, and s/he is less concerned with the ground-truth of conservation claims. Should they really make the trip, however, they would see along the way a road sign for the Weston Family Conservation Centre and for Waterton Springs Interpretive Trail.⁴⁶ If the centre is open, an interpreter will introduce them to the wildflowers on the nearby path and as everyone gazes towards the mountains, she will explain the geological and ecological wonders they

⁴⁶ See: <http://www.natureconservancy.ca/en/where-we-work/alberta/featured-projects/weston-family-conservation-centre.html> accessed November 17th 2012.

are seeing. Thanks to the joint investments of the Weston Foundation and the NCC, the viewscape is free of unsightly residential development.

The interpretative centre is situated on a property the NCC bought from a campground operator. The site is infamous in local annals. Ranchers mobilized during an acrimonious dispute that lasted many years during the 1980s to prevent the construction of a waterslide on that very site at the Waterton Springs Campground. This came on the heels of another long battle to neutralize an application for over 400 acreage parcels on another property across the highway. The owner of the camping facilities at the time had lodged several applications with the Pincher Creek Municipal District Council to expand his tourist attraction business with high profile amenities. Local ranchers vehemently objected at municipal council meetings every time an application was tabled for public feedback. During the incumbency of a pro-development council during the early 1980s, a bylaw nearly passed that would have permitted the construction of the waterslide abomination – as many vocal ratepayers saw it. A last ditch campaign finally ended the saga. The tourist amenity developer pulled up stakes and sold to another campground operator. The NCC has since bought the parcel to eliminate the threat of a commercial license in the vicinity of the Park, spending over one million dollars to acquire about 20 acres of campground. The NCC nevertheless conceded a leaseback option with the condition that the campground operations must remain discrete, and to this day the seller remains the current campground operator. The episode still resonates in collective memory, first as an outrageous proposal for development driven by greed of course, and second, as a very profitable real estate transaction for the campground operator. The first one is reviled. The second one is envied and serves as a model for negotiation. It is no

secret that each landowner sells his fraction of the viewscape for as much money as possible. However, what does not enter into the private equations anymore is that the intent of the Project is to safeguard the kind of landscape and the type of ranch life they have collectively fought for all along.

Two kilometers north of the interpretive centre, there is a pullover on Highway #6. The panorama from the edge of Pine Ridge is breathtaking enough that the pullover has existed for decades. Ten years ago, a large plaque was installed to inform the viewers that the spectacle before their eyes was brought to them courtesy of the Weston Foundation and the Poole family, principal sponsors of the Waterton Park Front Project.



Figure 2.4 Photograph of the NCC commemorative map on highway 6.

What the commemorative plaque doesn't reveal however is another kind of information, which the NCC would rather not divulge. The Municipal District map of property titles, however, clearly indicates that much of the ranch land visible from that particular vantage is not owned at all by the NCC, by title or through easements.

The NCC holds property titles and conservation easements over thirty thousand acres of the Project landscape. But contrary to the NCC map that depicts the Project as a solid block, it is rather an unfinished mosaic, and the acquisition phase is far from complete (Pearson 2007b). From where the commemorative plaque stands, the hill slopes down to the Cottonwood Canyon where Bert Riggall built his second and last homestead. When Rob Burton, a grandson of Bert, passed away in 1999, his widow Inez soon put up a small 'for sale' sign by the gate on the side of the highway. Within days, before the NCC got wind of the sale, Cal Wellman strode into the old house with check book in hand, had tea with Inez and within the hour had concluded a deal to buy her quarter section in Cottonwood Canyon.

Cal's ranch is further downstream on Cottonwood Creek. Cal sold conservation easements on his entire ranch early on during the NCC campaign, and with money burning a hole in his pocket, he went on the lookout for more land. He bought the canyon place and a half share on the land across the highway for a price much less than the going rate the NCC was paying. It was a great addition to Cal's ranch and since then he has rented the old house and has nearly paid for the property in the course of fifteen years. Cal declined to sell any more conservation easement after he had sold those for his original ranch. And this is quite strategic.

According to MD bylaws, an application to subdivide is difficult to turn down if a

landowner wants to cut off a house site from his home quarter section, or if a road or a natural feature like a creek divides a quarter section. Cottonwood Creek divides the little canyon property, and by bylaw convention, the quarter in question holds considerable subdivision potential. Notwithstanding that Cal was the utmost vocal detractor of the waterslide project and opposed a high-density residential project earlier, he was not one to forgo the opportunity to speculate on inflationary *non*-development.

The ranch headquarters of Glen and Barb Dunbar occupy two adjacent quarter sections downstream from the Cottonwood Canyon. The scenario is the same there with the creek carving valuable subdivision potential. The Dunbars have resisted every offer to sell and rode the rising tide of inflation instead. The NCC has made generous offers on top of a high bid for the land; it has offered lifelong use of the ranch for them and their son with no significant land-use limitations; alternatively it offered to buy a farm at the periphery of the Project to let them expand their operation there; and the NCC already rents grazing to the Dunbars on nearby ranchland it has bought from the estate of the Urban family. All to no avail, yet the Dunbar property stands in the middle of the key viewscape from the highway #6, and the NCC is obviously pressed to buy it.

In light of the general opposition of landowners to exurban encroachment, it is paradoxical that many are reluctant to sell property rights to the NCC. Some do not care much what happens after they are gone if the next generation is not interested in ranching. But that is not Cal's wishes. Cal's strategy makes the best of both worlds. Cal sold easements on every quarter section of his ranch before buying nearby land with the proceeds. Granted that each quarter section under easement can be sold separately, the easements over Cal's land nevertheless preclude a buyer from building a residence on any

quarter section but one, which limits the exchange value of the rest of the land to the use value of ranching. For Cal, what matters most is to keep the upper hand in financial matters for as long as possible and rule from the grave thereafter. He loathes the thought that his widow, if he fails to survive her, could break up the ranch and sell it in pieces to residential developers.

Furthermore, buying adjacent properties with no easement attached does more for Cal than increase the size of his ranch; it also gives him tremendous leverage to extract monetary value from conservation on land that does not yet have an easement. The NCC worries that this kind of withholding game will backfire and that philanthropists will walk away before the landscape is secured. The Weston Foundation stopped injecting funds in 2012. Landowners who have not yet sold easements, for their part, are convinced that they stand to win no matter what. Whether they sell property rights to the NCC or the land to developers, the potential is the same: the scarcer the islands of unprotected land become, the more valuable they are. Several ranchers have kept a portion of their ranch unencumbered with easements. In 2007, 20% of the landscape claimed by the Waterton Park Front Project had yet to be 'protected' (Pearson 2007b). The recession that hit the global economy in 2008 did little to abate the expectations of potential land sellers. Some have come back to the table in 2012, but negotiations for remaining key properties have broken down.

Jim Garner inflicted on the NCC its worse rejection. The Garner place is on the south shore of the Waterton River in Cardston County, and Highway #5 crosses it just before entering the National Park from the East. It is square in the middle of the area made up by the Waterton Park Front Project and the National Park. True to its pro-development

reputation, the Cardston County Council quickly gave Jim Garner a permit to subdivide a part of his 300-acre ranch into 26 small parcels for a residential project. Garner modestly named his condominium plan “Heaven on Earth Estates”:



Figure 2.5 Photo of driveway of Tom Garner’s Heaven on Earth Estates

The NCC made many advances to cajole Tom Garner into selling. Garner temporized and made outrageous requests, but in the end he has always spurned the offers. A conservation objectionist of sorts, he is, in the words of one NCC official, a “warrior guy”. To circumvent the NCC’s institutional label, a philanthropist hired a third party to make Garner an offer of \$2 million for his 300-acre ranch, a small size by local measure, which amounts to \$6,600

per acre, three times the going rate for ranch land at the time. But Garner saw through the ploy and swept it off the table, to the great dismay of the patrons of the Project.

‘Heaven on Earth’ represents a danger that has since been coined ‘Garnerization’. The Waterton Park Front Project is divided by the Waterton River, and people on the north side worry that the Cardston County across the river, the ‘Mormon’ side as it is locally known, is ruled by religious principles that sanction all kinds of development, in the name of “Man’s Dominion and His Right to Subdue the Earth” (see Nibley 1981; Nibley 1994a; Nibley 1994b). Developers are indeed relentless and constant vigilance is necessary to keep track of attempts even more extravagant than Garner’s condominiums. In 2007, a scheme raised several million dollars from investors to build ‘Mandyland’ (Alberta Wilderness Association 2008:19). The Pincher Creek Echo newspaper reported that

Earlier this year Mandyland [Inc.] revealed plans for a 3,000-acre resort on the Cardston side of Waterton Lakes National Park. Besides promising an entire village of year-round cabins, the resort has made plans for an Arnold Palmer signature golf course, motor sports including jet boats, ATVs, go-carts, dragsters, swamp buggies, airboats, touring bikes, and even a mock tank battle site. There will also be a dude ranch and midway amusements with no less than 150 rides.⁴⁷

In 2011, the Alberta Securities Commission alleged that Calgary-based Blue Sky Resorts

⁴⁷ <http://www.newswire.ca/en/story/751313/asc-alleges-fraud-against-blue-sky-resorts-and-others>, accessed December 17th 2012.

Inc. and related entities Mandyland Inc. were involved in a fraud case.⁴⁸ The landscape was spared another assault, but such rescues come at very high costs in advocacy time or, for the NCC, in the costs of real estate purchases.

Is buying conservation a delusion?

The NCC uses the real estate marketplace as an avenue to root itself as a *bona fide* actor, both in the conservation world and in the world of private land tenure in ranch country. The NCC therefore bypasses the arduous work of advocacy and leaves activism for others to wage: a tacit ally of environmental causes nonetheless, since the NCC benefits from the general sense of urgency about such matters. As a point of entry, land acquisition has its own rules of engagement: two separate parties, seller and buyer, forge a mutually agreeable contract to bridge their divergent interests. A seller tries to realize the highest value possible for the asset he relinquishes. For most ranchers, a return on land assets is the only source of income during retirement. And as a buyer, the NCC aims to pay as little as possible. This is seemingly a manageable quandary given enough monetary incentive to join a conservation endeavor, especially if its interests converge with those of landowners. But since private rights in land ascribe to individuals the discretionary powers to rule landscapes for personal gratification, the NCC has to spend fortunes fending off the likes of Mandylands, Heaven-on-Earths, and waterslides in a Waterton Waterworld.

I have earlier stated that the NCC mission has three dimensions, marketing the dream of conservation, buying land for conservation, and managing it for conservation.

⁴⁸ <http://www.albertasecurities.com/news/Lists/ASC%20News/DispForm.aspx?ID=1103>, accessed December 17th 2012.

These operate in phases that cycle like revolving doors and the above case studies have only begun to show that the dimensions have yet to be synchronized. The vexations of the buying phase were compounded by earlier promises to protect a vast landscape. In a rush to buy property rights for every significant parcel, the NCC made compromises in matters of land-use protocols, and as the next chapter illustrates, the subsequent disorder went viral and hampered the conservation management phase. The stewardship priorities of people who sell easements or land, often *in extremis*, are very different from those of people who donate the same rights as a conservation legacy. A NCC official remarked that by necessity, the NCC has taken a 100-year perspective. The understanding has eventually dawned on the NCC that the implementation phase will be very slow before conservation truly grafts into ranching practice. Yet in the meantime, it has advertised the tremendous achievements of its upstanding ecological citizens, the ranchers.

The NCC has put itself in a precarious position. It must pursue acquisitions to reproduce itself, and for a stream of transactions to persist, a steady input of good news and success stories must feed into it. A spate of controversies is really bad for business, scandals must be avoided at all cost, and the prospect of a 'Watertongate' is a nightmare. Perhaps, then, it is not remarkable how little governance the NCC has asserted as a conservation landlord, since it must placate the concerns of potential sellers to begin with and quell any discontentment afterwards. Hence the inherent risk of equating the advent of conservation with real estate transactions is that the commerce of conservation subverts its actual practice altogether. And it follows that the capitalist logic behind the conservation mode of production can be inverted such that conservation begins to cannibalize itself. The next chapter shows how this can happen.

Chapter 3 The ecological governance of landscapes: theory and practice

The Nature Conservancy of Canada (NCC) inaugurated the Waterton Park Front Project seven years into its purchasing campaign. After the initial flurry of purchases, the NCC soon found out that landowners next in the line-up were much more reluctant customers. The ambitions of the NCC had not gone unnoticed despite its trademark “quiet business-like approach” to private deals (NCC 2000:i). When I arrived ten years after the first purchases, the communities of Twin Butte north of the Waterton River and Mountain View on the other side were abuzz with speculations. What kind of conditions does the NCC put on ranching when it leases back its ranches? What kind of snake oil are these conservation easements? Surely, there is still a snake in the grass! It was a delicate matter to inquire about private land sales but the rules of the game afterwards were much hazier still.

Purchasing a comprehensive block of real estate and conservation easements in a complex social landscape like the Project is a formidable endeavor. Aside from buying land, the NCC is also by necessity involved in land stewardship. The NCC declares that the land is ‘conserved’ as soon as it buys property rights. A figure of speech it is, perhaps, but on a landscape like the Waterton Park Front Project where ranching is the principal land use, surely it is more than a formality.

The NCC estimates that the Project is “an ecologically viable, inspiring working landscape where biodiversity is maintained and enhanced in collaboration with sustainable ranching” (Iachetti, et al. 2009:38). This contradicts what I explained in the introduction about the history of ranching practices, especially about local practices. I had my own view

and experience of the landscape, of course, and when I returned to make my inquiries, I had to come to terms with the discrepancies somehow and find out how the NCC substantiated its claims.

Another study was underway at the time. It concluded that “the story of the WFPF [Waterton Park Front Project] exemplifies how private land conservation can change the nature of communication and action within place-based environmental governance” (McCuaig and Quinn 2011:109). Its findings of fact were similar to mine but the gist of their conclusion was quite different, and this warrants a bit of examination.⁴⁹

Place-Based Governance

Place-based governance, McCuaig and Quinn explain, fosters “legitimacy, transparency, accountability, inclusiveness” (2011:95). The NCC approached landscape conservation in the same quiet business-like fashion as it did for its real estate transactions. Yet by the same token the authors also noted that the NCC purchasing program “was *not* accompanied by a coordinated communication plan in the community” (2011:101 *italics mine*). McCuaig and Quinn record instead that...

... participants described feelings of shock and surprise at both the concept of

⁴⁹ The data for that study was “collected through a review of relevant literature, policies, reports, and historical data, and by means of in-depth, semi-structured interviews” (McCuaig and Quinn 2011:99). Twelve key informants were interviewed for the study (*ibid*). My approach was ethnographic over a span of several years, with scores of semi-structured interviews with people in their official capacity, but mostly discussing in informal settings while living in different households, visiting and working there.

private land conservation and the amount of money involved. According to a former NCC staff person, there was no education or publicity campaign about the project and the land purchases and conservation easements were arranged quietly and quickly. Several participants noted that they were initially confused about the project and its long-term implications. One local rancher explained that he tried to become informed about the project but was unsuccessful (McCuaig and Quinn 2011:102).

During the annual “Meet and Greet” community events organized by the NCC, McCuaig and Quinn further note, the NCC staff invited interested parties to speak with them in private. Since each deal is unique and no general formula is used, it is NCC policy to avoid discussing the details of the Project in public (2011:101).

McCuaig and Quinn are very careful in their phrasing: communication and action *can* change through conservation initiatives and “current conditions *appear right* for the ongoing evolution of a governance framework” (2011:109 italics mine). And this made for an “ideal environment” where “new arrangements can be incubated, modelled and shared” (ibid).

I am not so sanguine. The incoming institutional actor was big and wealthy, and with the acquisition of property rights over most of the landscape, it assembled a big toolbox. However, I found discourses and practices on all sides to be more deeply entrenched than I expected. My findings converge with those of McCuaig and Quinn to the extent that I witnessed a systematic avoidance of transparency and inclusiveness as the

above data illustrates, which begs the question why McCuaig and Quinn would refer to the NCC Project as an exemplar of place-based environmental governance by way of their own definition.

Besides, I find another observation quite ambiguous: “Many of the lands that have remained intact as viable ranches in the WPF Project may have been lost to subdivision or less ecologically benign land uses” (2011:108).⁵⁰ The intactness of ranches and loss to less benign use are notions that need to be unpacked. Wholesale subdivision into myriad small residential plots is an ecological milestone from which there is probably no return (Maestas, et al. 2002; Maestas, et al. 2003). However, I found that the excision of quarter sections from ranches did not necessarily have such dire consequences. Granted, the proliferation of access roads has deleterious cumulative effects (Stelfox and Southern Alberta Land Trust Society 2007). In terms of land use, however, the new constituency of residents was much more receptive to be ‘ecologically benign’ than many established ranchers. Again, it is too convenient to essentialize totalities. Newcomers are categorized as those suspects who ‘like to live and play there’ in NCC discourse. Yet most non-ranchers, I found out, adopted land use protocols much more stringent than those of the NCC. Remarkably, most of these constituents also declined to sell conservation easements because the NCC did not live up to its ecological promises on its own properties.⁵¹

⁵⁰ The exurbanite constituency is usually synonymous with the introduction of lawns and golf greens and all kinds of other ‘exotics’ and ‘aliens’ (Maestas, et al. 2003), or else the dissection of ranches into paddock-size ‘ranchettes’ where horses graze native rangelands into oblivion (Jensen 2001).

⁵¹ The (nearly total) local exurbanite constituency – the term ‘exurbanite’ denotes living outside the city – deplores the superficiality of NCC conservation and its cosmetic approach. Bill Hanlon, local

How did these ecological promises materialize? And what about the redeeming environmental governance that goes with it? Early on, I asked for clarification about the plans of the NCC during my earliest meetings with its officials, board members from Alberta as well as from Ontario (where the NCC has its headquarters), staff and members of the scientific committee, to no avail. The problem with my question, or one of the problems, was a matter of connotation. One member of the NCC scientific committee eventually disclosed that there were *no* plans like I was looking for, and what passed as conservation plans were in effect purchase plans, which were not divulged. That was not quite accurate, I later found out, because ‘NACPs’, or Natural Area Conservation Plans, were in the works. These were nonetheless kept out of circulation and it was not until I was well into writing this that I was finally granted permission to consult them. So the following notes are *ex post facto* insights.

The NCC has a clinical approach to its NACP goals: they identify multiple conservation targets along with the magnitude of related threats to conservation. Three of its goals are

- To maintain or enhance ecological integrity and conservation values for the benefit of the rich biodiversity of the Waterton Natural Area (WNA) at a variety of scales (genetic, species, community and landscape)
- To maintain or enhance the natural structure and function of the ecosystem targets of the WNA through appropriate land and water conservation and management
- To maintain and enhance wildlife habitat quality, connectivity and landscape

landowner, conservationist and NCC critic dismissed the Project as ‘photoscape’ conservation, a felicitous phrase that resonates with Denis Cosgrove’s visual ideology.

integrity on Nature Conservancy of Canada (NCC)-conserved lands in the WNA through positive land and water conservation and management (Iachetti, et al. 2009:iii)

These are goals worthy of the loftiest conservation meta-discourse. Further, the plan explains in great detail the conservation values of the NCC and describes the ecological structures and functions that have to be maintained or enhanced in terms of quality and integrity. It also identifies the current threats and enumerates specific courses of actions. The magnitude of threats is in many respects very high (2009:iv): “in some areas of the WNA [Waterton Natural Area]”, the plan points out, “unsustainable range management has lead [sic] to the increase in invasive and nonnative species, and degradation of riparian areas” (2009:28). One central conservation action is to “implement appropriate range management practices on a minimum of 5,000 acres (2,024 ha)” (2009:v). The inference is that conventional practices are not altogether appropriate. The plan also identifies “wide ranging carnivores”, grizzly bears, wolves, cougars, wolverines, and so forth, as a vital conservation ‘target’ (2009:25). However, “allowing the [carnivore] biodiversity target to remain in this condition for an extended period will make restoration or preventing extirpation practically impossible” (2009:26). These aims obviously required radical changes in relations and practices.

The plan recognizes that many local ranchers have been experiencing financial instability and are forced to sell land (2009:18); and also that the NCC stake in the Project landscape in terms of land secured under land titles and easements is 57% (2009:1),⁵²

⁵² The report reads (Iachetti, et al. 2009:1): “To date, 29,488 acres (11,933 ha), or approximately 57

much smaller than earlier stated (80%) (see Pearson 2007b:4). All told, the plan evinces the kind of clarity I had never found throughout my fieldwork. If the NCC had the same objectives all along, the organization had omitted to disclose them locally. The plan also reveals a very different perception of what went on the landscape than the NCC's public discourse suggests. In the course of my research, however, it became obvious that the NCC was not divulging its intentions for reasons of public relations: not very propitious as far as governance goes.

Rather, my inquiries revealed parallel monologues and disparate interests that never found common ground for sorting out their differences. I found disparities within and across every contingent on the landscape: ranchers, non-ranching residents, and conservationists. And I also found disparities in the body of expertise that conservationists rely on and in the body of practices used by ranchers. The next two chapters examine this dissonance from the general perspective of land use. The present chapter documents the arduous break-in period for the NCC as a neophyte in the ranching business: the inadequacies of conservation easements and the inconsistencies of expert advice. And it shows the predicaments of managing on a landscape scale when the landscape is divided into small autonomous units of production. The next chapter describes further predicaments and the choices the NCC made between alternative approaches, all of which

percent, have been conserved by the Nature Conservancy of Canada (NCC) in the Waterton Park Front Focal Area. Since 1997, NCC's traditional securement methods of Conservation Easements (11 percent of the area), and Fee Simple (46 percent of the area) have been implemented, with an objective to conserve the diversity of plants and animals and the lands and water they depend on in the Waterton Park Front Focal Area. NCC's conservation objectives were to be achieved within both the opportunities and constraints of the working landscape – that is, sustainable cattle ranching – which serves as a primary management tool for NCC to meet its ecological and biodiversity objectives”.

plunged the NCC into controversy. The subsequent two chapters apprehend the most controversial subject of all: the problem of large predators. I could not concentrate my inquiries solely on the use of a rangelands landscape when the social landscape was aflame with controversies about large predators. As the NACP makes clear, the issue is central to conservation. Events overwhelmed the capacity of the NCC to deal with it, however, and I document them from the perspective of other protagonists whose sentiments and practices range from antagonistic to cooperative. To explain the current state of affairs, I subsequently elucidate the social and political networks that drive the 'politics of who' and decide whether large predators are valuable species or pests, and what to do with them. Finally, I describe how this state of affairs is provisional and I elucidate the emergent options. In short, the era of small-scale ranching is all but over, but the suppression of alternatives has made the future most uncertain. By design or by accident, the NCC has played a waiting game. And by force of bullying, other outliers in the landscape have had to wait for their turn.

A long and steep learning curve

In 2008, Larry Simpson, director of philanthropy and conservation for the Alberta Chapter of the NCC took a small party, including a member of the Weston family, on a private tour of several Project ranches. The first visit was to the Bird's Eye ranch, one of the oldest and largest ranches in the area. The NCC had cut its teeth on the Bird's Eye ranch before going on to become the largest ranch landlord in the area. The negotiations lasted for over three years. Until such time, the NCC had preferred to buy conservation easements rather than property titles. However, the Bird's Eye ranch patriarch, short of a son, had split the

ownership between two daughters and one of them had decided to sell her share. Once divided, the unit of production was not viable, which forced everyone to sell. Rather than let the ranch slip away, the NCC realigned its strategy and opted to buy the option on one half of the Bird's Eye ranch, securing an easement on the rest in return for a twenty-year leaseback to family members. The deal promised to be a win-win solution. The NCC did not wish to get involved in hands-on management and, Larry stressed, "the family really loved the land".

Next we climbed to the top of the butte where the Project landscape stretches out as far as one can see. Sweeping the horizon in an emphatic gesture – and inviting the audience to gaze at the NCC estate – Larry went on to expound on a defunct scheme the NCC had discussed with the Waterton Lakes National Park authorities. The scheme aimed to reintroduce bison on a grand scale. The clincher was that ranchers needed considerable incentive before the landmark partnership could expand the bison range beyond the bounds of the Park. "The community decides in the end", conceded Larry. But the concept did not reach the consultative stage before the Park made an internal feasibility study and shelved the idea (Johnston 2008). Speculation nonetheless ran high in the community and many ranchers have suspected some hare-brained game plan to reintroduce bison was afoot ever since the NCC came on the scene.

Hope springs eternal, for Larry, to rehabilitate bygone ecosystems. Yet pesky details have to be attended to in the meantime. A close-up view on the way up the butte, for instance, had revealed closely cropped plants. When I pointed these out to him (and it was a chronic condition if the modified plant community and brush invasion were any

indication), Larry confessed that the range suffered from overgrazing and the grazing protocols had been “screwed up”. Only three people made up the entire staff for the Alberta chapter in the late 1990s, at the time the easement was negotiated. Short of in-house experts, Larry explained, the NCC consulted a range specialist with Public Lands for advice on proper stocking rates and the recommendation had proved inappropriate – the head of the Public Lands Division denies that. But since there was no way to amend the leaseback contract, Larry continued, more stringent stipulations were not an option. Candid about the initial setbacks, Larry also emphasized that the NCC cannot afford to appear intransigent towards the land stewards. And until the lease expired, the options for range improvement were limited.

The tour went northwards to the next ranch where a welcome contrast awaited. The grass was tall and native species seemed to thrive. The NCC had bought most of the Palmer ranch from its heirs at the same time it was negotiating for the Bird’s Eye. The NCC took over the lease the heirs had previously signed with one of the family members and the NCC had since then renewed it on a yearly basis. The range had suffered for decades even by local standards and a considerable portion of the ranch had been ploughed under during the 1970s. Wheat prices had peaked while the cow market languished at the time, and local ranchers remember hearing the drone of big tractors on the Palmer ranch ploughing under many sections of land from the largest block of native range left in the area. As for what was left of the native rangelands, the range specialist who did the initial baseline confirmed that range health had been poor over much of what was left of the ranch. The grazing protocols of the leaseback arrangements had been stringent since then and a large proportion of the Palmer range had made a remarkable recovery in the span of ten years

(Iachetti, et al. 2009:43). The Palmer ranch is by NCC standards the outstanding success story for the Project.

The story was different for two of the adjacent ranches also owned in part or in whole by the NCC. In both cases, the sellers had been on the brink of liquidating but nevertheless negotiated a forty-year leaseback with full discretion to continue ranching as they saw fit. The long-term clause makes sense for a multigenerational enterprise concerned with tenure security. Curious about the aftermath, I consulted with the same rangeland specialist. He had done the original baselines but had not been asked to do any formal follow-up monitoring. He estimated that range conditions on one ranch had not changed, with chronic severe grazing continuing as usual, and conditions seemed to have deteriorated on the other. My inquiries about the range health status of other NCC ranches met with the same ambivalence about the trend in range health.

One lessee was satisfied with this state of affairs and his principal concern had been to relieve the ranch of its intergenerational burden. The NCC had bought the ranch for \$7 million, which had paid off 14 non-ranching relatives and afterwards one of the ranching brothers had purchased another ranch in Saskatchewan with his share of the proceeds. The current manager was not sure if he could still make a living from ranching, regardless of the modest leaseback fee. The ranch had been in the same family since the late 1800s and grazing practices had been intense all along. By late fall, grass was grazed nearly down to ground level and tall forbs stood out. Nevertheless, the lessee said the NCC annual monitoring reports had been rather innocuous. Several pages enumerated the Latin names of plant species and pointed out the presence of a few patches of noxious weeds. The only

source of irritation in these reports for the lessee was a reminder that abandoned vehicles and decrepit outbuildings were eyesores and that they should be removed.

Upon examination, these monitoring reports were most remarkable for their glaring omissions. Enumerations Latin names aside, there were no signs of a systematic follow-through on the status of range health. An ecological baseline is a legal prerequisite before an easement can be registered, and the NCC was by law obligated to perform these for every property it gets involved with. Nevertheless, ecological performance is very difficult to ascertain in the absence of follow-through monitoring. The latter is standard procedure to identify trends in overall ecological status (Adams, et al. 2003b) and to measure it against critical thresholds for grassland sustainability (Holroyd 2008). Otherwise, a taxonomic inventory, even a succession of inventories, is of little use. The NCC claims to conduct thorough five-year monitoring on its ranch properties. Yet I saw no evidence of it and the same omission stood out in every monitoring report other ranchers showed me.⁵³

The owner of the ranch where conditions appeared to have deteriorated was very dissatisfied with the entire procedure. A family of wealthy industrialists had owned the Bar-N (a fictitious name) since it was put together in the 1920s when the founder bought out all the homesteads over seven sections (seven square miles, 4,480 acres or 1,813 ha.) along the Waterton River. The Bar-N ranch sold in the early 1990s and the quarter section titles to the land were divided amongst the family of the new owner; the NCC has since bought a large stake in the ranch after a divorce forced the sale of part of it. By local

⁵³ This is confirmed in the internal report in the NCC's Natural Area Conservation Plan (Iachetti, et al. 2009).

standards the ranch had been kept in exceptional shape by the managers for the industrialist landowners until it changed hands in the early 1990s. The current owner/managers have since been very busy in the rodeo world, and rumor had circulated that the prominent ridge on the ranch, well-known for its rough fescue, had been “hammered” by “too many cows grazing at the wrong time”. The ridge is also a key ecological site for elk habitat and connectivity in the (uncirculated) NACP. This rumor was very disturbing, of course, and the new owners questioned the competence of the range specialist who had done the original baseline report. They suspected that he had scored the range conditions too high to begin with, and they blamed elk for the effects of overstocking. A substantial population of elk is not a recent phenomenon on that ranch, however, and local hunters have long prized the ridge for its excellent fall hunting. The range specialist was not asked by the NCC to give his expert opinion or to do a follow up. He nevertheless deplored the deterioration of range conditions based on casual observation. He resides close by and is very familiar with the history of the ranch; his grandfather helped the original owner put the ranch together. Again, anecdotal evidence is problematic, and this has made it difficult to find out about the ecological health status of any local ranches and to identify what kind of conservation the emerging working landscape was likely to deliver.

An interview with the local NCC conservation coordinator was not enlightening either. Every easement and leaseback contract is customized, noted the coordinator, and this makes it difficult to coordinate strategies for the NCC Project. When I asked about the monitoring reports the coordinator specified that beginning in 2009 annual reports would be produced at three-year intervals. These were interim appraisals between thorough

reports scheduled at five-year intervals. And those had yet to get done. Besides, the coordinator had not heard about grazing problems on the properties I mentioned (despite having resided on one of them) and admitted that the NCC did not account for the number of cattle that were put out on the land or for the grazing intensity thereafter for the simple reason that in most cases ranchers had full discretion for the duration of their respective leases.

I inquired with someone higher up in the organization about the follow-through problem. After much tergiversation, he admitted that a systematic program had not yet been implemented for the Project. The production of baseline reports was an expensive procedure that was contracted out to consultants. The NCC staff had grown into a small bureaucracy but an experienced range specialist had yet to join its rank. “The range health assessment program costs us nearly \$200,000 yearly”, bemoaned the official.

A note on baseline reports

Consulting firms now specialize in the production of baseline reports. One-off contracts yield an exhaustive documentation of plant communities that reflects the data from transects. Consultants use GIS (Geographic Information System) maps to divide the landscape into polygons of plant communities and select representative sites for transects accordingly. This works well for more uniform landscapes but not for the complex mosaic of plant communities and topographical features found in the foothills. The selection is at best approximate and the close-knit grid of fenced perimeters only exacerbates the heterogeneity of ecological polygons given that the perimeters of ecological polygons and

properties do not correspond. Reports nevertheless make recommendations for stocking rates. These appear in the documents almost as a footnote. Besides, rates are also calculated according to a 'management factor' (see Adams, et al. 2003a; Adams, et al. 2003b). In the final analysis, there is no dialogue between hired experts and their customers, let alone between property owners and practitioners. Customers, including the NCC, get a report in the mail and are left with little choice: to believe guidelines fraught with approximations and apply stocking rates rigidly, or let practitioners improvise with their own management 'factor'. Additional fencing is often recommended to isolate sensitive areas (Fitch, et al. 2003) given that no-one has adopted the herding option locally.

Natural Areas Conservation Plans

Consulting fees compound the problem of follow-through monitoring. I have not found a single instance of thorough rangelands monitoring by other land trusts. Monitoring is mandated by law but visits by land trust representatives were at best cursory walkabouts. None had adopted the shorthand monitoring methods devised for that very purpose (Fitch and Ambrose 2003), which very few ranchers used on their own account.

The NCC is rather concerned with the big picture. It partnered with the Foothills Institute to produce detailed 'Natural Areas Conservation Plans' (NACP) for four areas in the Foothills, including the Project area (Iachetti, et al. 2009). These NACPs inform management plans for every property.⁵⁴ Ranchers, however, were not aware of such plans and invoke instead the vague guidelines of their easement. NACPs are not public

⁵⁴ <http://www.natureconservancy.ca/en/what-we-do/conservation-process/our-work-in-properties-projects.html> accessed Dec 26th 2012

documents, and one must usually sign a Confidentiality Covenant with the NCC Regional office before having access to a NACP (NCC 2009b:3).⁵⁵ By the same token, the NCC proclaims at conferences that it engages local partners in a consultative process: to refine local goals, integrate them into business plans, identify conservation actions and timelines, assign responsibilities, and so forth (Arnold and Kraus 2009) (see figure below)⁵⁶.



Figure 3.1 Page from a NCC presentation to CCEA Marine Protected Area 1999 Conference (see footnote below).

⁵⁵ In 2013, I was finally able to obtain copies of several NACPs, courtesy of the NCC directly.

⁵⁶ www.ccea.org/Downloads/en_2009agm_Arnold.pdf accessed Dec 27th 2012.

The NCC promotes a ranching-friendly environment, but ranchers wonder about the ongoing accountability of transitory bureaucracies. For good reason, they also suspect that the NCC maintains a firewall around its long-range plans. Given the lack of assertiveness of the NCC, the weakness of monitoring protocols is merely symptomatic. If ecological goals and implementation measures are nebulous to begin with, range health monitoring is of little practical use. What happens on the ground is decided otherwise. Follow-up interviews also showed that the NCC was aware of substandard range conditions (as per the NACP) – although the awareness of a downward trend was not based on thorough monitoring. “It has been a steep learning curve and many mistakes happened along the way”, a NCC official said, “we did not know we would be directly involved in the conduct of range management”.

In the span of four years of hurried negotiations, several ranches made up the core of the Project. It was put together as a jumble of property rights and loose arrangements, which have grown more entangled since, and the aftercare is rather an intensive proposition. The NCC has since been more careful with its contractual arrangements and the easements have been redesigned. And relief was in the works to create a ‘grass bank’ on the Marsh place. The NCC bought the sizable Marsh place near the Palmer ranch for \$15 million. The ex-owner was not a resident rancher and he has declined to renew his ten-year lease. Other than the Palmer ranch, the Marsh place was the only lease arrangement on the Project with stringent stocking rates. And despite a few infractions, by 2010 the range on the Marsh place had ostensibly improved in the course of ten years.

The NCC plans to replicate the model of stewardship program it has recently implemented on the Sandstone Ranch Grazing Co-op, another ranch property in ‘mixed-grass’ ranch country to the east (NCC 2008:10-11; NCC 2009a).⁵⁷ The NCC co-manages the property and grants access to participating members in return for a commitment to maintain or improve range health on their home ranch. Members then trade ‘credits’ for cheaper access to the forage bank.⁵⁸ The NCC is finding out that range stewardship it envisions comes at a price above what it pays for property rights. Ranchers did not volunteer to destock the range. The credit initiative was injected into the equation to boost incentive and subsidize conservation measures that would otherwise go unheeded. Nevertheless, ranchers take exception when someone suggests that ranching is subsidized. Most see it the other way around, *ipso facto*, that ranching provides essential ecological goods and services. But short of managing on a landscape scale, small units are managed in isolation which makes conservation an expensive piecemeal affair.

Piecemeal conservation

The following small-scale rehabilitation project is an example of classic conservation initiative. The original baseline report indicated that the range on the NCC property in question, one-half section in size, was in unhealthy condition after years of conventional ranching practices that had damaged riparian areas (Pearson 2007b). To improve grazing

⁵⁷ <http://www.natureconservancy.ca/en/where-we-work/alberta/stories/grasp-grasslands.html> accessed Dec 28th 2012.

⁵⁸ This model is borrowed from the ‘grassbanking’ initiatives of the Malpai Borderlands Group in the U.S. (Sayre 2005).

management the NCC and the Alberta Conservation Association (ACA) consulted with the 'Cows and Fish' ENGO (Fitch, et al. 2003) and invested in a major water development program: the drilling of a 150 foot deep water well and the purchase and installation of a portable solar water-pumping facility as well as the erection of additional fences. The stocking rate stayed the same, 35 cows for three months annually, but the riparian area has improved noticeably from unhealthy conditions to 'healthy with problems' (Pearson 2007b; Waterton Watershed Group 2009). The costs of the initiative amounted to over \$40,000. The value of the grazing fees would be \$2,000 if the charges reflected the going rate. The NCC has charged much less although it plans to recalibrate its fees.

From a material point of view, the NCC and other conservation organizations have financed such initiatives and in return have received public relations dividends. The lessee, for his part, received accolades as a champion of conservation. And after pocketing the value of the land, he got to benefit from better weight gains for his cattle while paying a reduced rate for grazing privileges.

From a landscape perspective, however, this gets to be an expensive proposition. Every small unit of production presents the same problem associated with small stationary herds. And of course, the cost of infrastructure multiplies accordingly. Yet every small operator comes to expect a level playing field. Conversely, if small owners agreed to combine land and cattle inventories seasonally, the pattern of grazing occupations could be tailored to the ecological capacity of each site, use properties sequentially rather than divide them internally, pay for herding labor or else labor to put up temporary fencing. Total infrastructure and labor costs would be lower and riparian and other sensitive areas

could be used sparingly with considerable time to recover. This goes against convention, however, and the next two case studies show different rationales in the context of larger local ranches. In the first case, the rancher was forced to change practices and in the other, the rancher persisted. Their respective circumstances vary considerable, but the difference of rationales warrants examination.

An ecological and economic riddle

Scott, one the Palmer heirs, has remained the operator of the Palmer ranch. Scott scoffed at Larry when NCC made a down payment for the ranch in 1998. Scott had three years left in his lease contract at the time, which an eventual buyer was bound to honor. This, he thought, would put off prospective buyers, and he envisaged that the heirs would collect the money from the NCC's option to buy and he would continue to lease from his brothers as before. However, the NCC had borrowed from the TNC for the down payment and found a third party to cover the interest costs for six months. In other words, the NCC had six months to find a buyer. The NCC was a little-league player in the ranch ownership game at the time and it was already juggling another act to buy the Bird's Eye after also purchasing an option there. Unperturbed, Larry put an ad in the national Globe and Mail newspaper for a prestigious heritage ranch for sale and shortly thereafter received a call from an Albertan entrepreneur, John Poole, who wished to leave a legacy to the province. Upon hearing of competition by other philanthropists, the Weston Family Foundation, not wanting to be upstaged, slackened its purse strings yet again. John Poole nonetheless offered to transfer his gift to other projects, and the purchasing campaign started in

earnest. Scott was unruffled by the turn of events and with his share of the proceeds from the sale of the ranch bought another one in Saskatchewan where land was much cheaper. His main objective, Scott explained, is to accumulate capital assets to pass on to his children and make an operational profit from ranching wherever he can. This said, Scott is not a typical rancher and grew up outside the local ranching scene. Heir to oil money and married into wealth, he dabbles in polo horses and flies his single-engine plane to various polo events and horse sales. He speaks wistfully of his position of privilege and likes to quote the classic line: “To make a small fortune ranching, you have to start with a big one”. His wealthy status might be frayed at the edges, but Scott has nevertheless made good in the ranching-for-conservation world.

Scott leased the original ranch back from the NCC and was not the least bit disturbed about the imposition of low stocking rate parameters. The reason is simple: he pays by the animal-unit-month (AUMs) (see Chapter 1) yet still gets to graze a substantial herd on the home ranch while grazing an additional herd at his subsidiary ranch. The incentive is different on the Bird’s Eye and other ranches where the lease stipulates a flat rate fee. Scott is not compelled to extract the most out of the land anymore: the more grass is available for fewer cattle the better the gains. As for conservation, protocols stipulated a winter grazing regime for the pastures in worst conditions. These are precisely the areas the NCC now showcases as a success story. And since these are also situated on slopes where chinook winds regularly sweep the range free of snow, the stipulations suited a program that radically reduced winter feeding expenses, an opportunity which had not

been exploited there for a long time.⁵⁹ Scott's conduct of range management was never informed by conservation in the past but he has derived benefits from it since. As mentioned earlier, it is perplexing that the NCC did not implement a similar comprehensive program for the Project all along. Given rancher discretion, stocking rates are very high, and this is apparent on operations short on land and profit margins, unlike those of Scott and Cal. The next case exemplifies the rationales therein.

The next case adds complexity to the riddle. The ranch is also a large ranch by local standards, but the owner does not have nearly the same personal resources. With the proceeds from the sales of easements, he has not been able to buy more land, like Cal did, let alone an entire ranch elsewhere like Scott did. His rationales are also a complete inversion of Scott's. Lyle Mayer (a pseudonym) is a third generation rancher who has sold easements on part of his ranch and has also been forced to sell off other parts to keep afloat financially. He rents back this land to stay in business and in this particular case, he made a deal with a wealthy amenity seeker who bought one quarter section of his land. The real estate deal stipulated that he could use the land for free for two years after the transaction and pay rent thereafter. After two years, Mayer offered to lease the land back for a flat rent of \$2,400 per year, an arrangement that would give him full discretion to manage as he sees fit. The new owner (which was not NCC) wished instead to lease this quarter section

⁵⁹ Nota bene: winter grazing is seldom available on nearby ranches that are slightly closer to the mountains. Altitude gradients, micro-climates and broken topography make for a complex landscape, which, once it is fragmented into private parcels, is most difficult to use opportunistically through herd mobility. Incidentally, one of the oldest ranches in Alberta, the Cochrane Ranch, encompassed the area between the Waterton River (which was at the time called the Kootenay River) and the Belly River, including the present day Palmer ranch. And the Cochrane made extensive use of its winter grazing potential.

according to the recommendations of a range specialist who did a range assessment for the entire eight-section ranch he had assembled. Based on the recommended stocking rate and the going rate of \$30 per AUM (animal unit month) on deeded land, the counter proposal of the landowner amounted to \$1,500. Lyle Mayer was outraged at the AUM rate and lobbied to no avail for a flat rate rent. At first blush, the disparity makes little sense. The new landowner is obviously willing to incur a loss of income in order to conserve his range. He relies on the professional advice of a range consultant to dictate stocking rates. As for the rancher, his calculus is not mysterious but the logic is peculiar. Mayer offered to rent land rather than pay for a specific amount of grazing. If a \$2,400 rent is more profitable for a renter than a \$1,500 grazing contract, it therefore stands to reason that he expects to extract a lot more AUMs than the contract allows. If he is to come out ahead by his own offer, he must nearly *double* the recommended stocking rate stipulated in the grazing contract. The \$30 rate per AUM on the open market is obviously more than this rancher wishes to pay, especially since grazing fees are much less on Public Lands (granted that ranchers are expected to maintain fences there). Whereas the prescription for a light stocking rate yields more forage per head of cattle, the incentive is small comfort. One reason is that scarcity of forage resources is the key limiting factor locally. Unlike the few big ranches that sold, leased back *and* bought ranches elsewhere, Mayer and most local ranchers do not have the wherewithal to expand into places where ranch land is cheaper, nor do they wish to leave the local area. Instead, they channel the proceeds from land sales towards more pressing concerns. Thereafter, however, they have to pay for grazing. And it is a bitter pill to swallow for ranchers who sell their land and rent it back to find out that their enterprise cannot absorb grazing costs afterwards. Until such time as property titles

changed hands, there was a hidden opportunity cost to grazing one's own cattle (instead of leasing grass) that never showed up on the ledger of the ranch operations. However, this opportunity cost comes back to haunt them as grazing bills materialize in the aftermath of a land sale. The riddle is therefore a matter of dollars and cents to a large extent. But it is much more than that: the riddle also strikes at the heart of the conservation dilemma. Range scientists and most local ranchers in small ranch country do not share the same standards for range health.

There is another reason that Mayer and other local ranchers are reluctant to follow minimalist stocking rate guidelines. As mentioned in a previous chapter, the grazing pattern on ranches in most of the Project landscape evolved into a particular kind of bimodal configuration. It was too risky to set aside a forage bank for winter when it is likely to be buried under a thick snowpack, unlike ranches on the eastern edge of the Project like the Palmer and Marsh ranches and in 'big ranch' country. Wild herbivores can access this forage by pawing through deep snow with their hooves whereas a cow cannot. But this is intolerable competition for a small rancher for whom pasture is a scarce commodity. Furthermore, wild herbivores can withstand long periods without feed and at worse their numbers dwindle during winter die-offs. But ranchers cannot afford that kind of loss of cattle inventory either. It is therefore common practice to graze for about six months yearly and maximise grass utilization during that period. And with this regime, it is of little consequence whether the summer range is made up of native grasses, which make up superior winter forage (Adams, et al. 2003b), or introduced grasses. The NCC scientists refer to these as "exotic invasives" or "agronomic invasives" (Adams, et al. 2003a; Iachetti, et al. 2009; Riley, et al. 2007). Introduced forage species rather yield copious and

nutritious forage early in the grazing season and are therefore most valuable although they do not make for good winter forage. In effect, a local rancher could argue that the alteration of the range from a native to a modified complexion of plant communities has helped them maintain a working landscape.

Finally, there is a fourth reason that pertains to the perception of change. It has to do with the phenomenon of 'sliding baselines' (Campbell, et al. 2009) whereas people directly involved in day to day activities, generations of practitioners, and even scientists (ibid), lose track of trends, and thresholds go by almost unnoticed. The high stocking rates of this bimodal regime exacerbated successional change (or *seral* stage) in plant communities (Adams, et al. 2003b; Willms, et al. 1988; Willms, et al. 1985). This is a cumulative change in productivity, over and above the change of plant composition, and it has been the cause of great dismay for rangelands specialists who have taken on the mission to reverse these trends.

Lyle Mayer is not at all preoccupied with such concerns and promotes ranching as a bastion of conservation all the same. He recruits the conventional wisdom that ranching has safeguarded the range. And by declaring him a 'champion of conservation', the NCC appears to endorse his practices.

Internal disparity in science and conservation

The local partnership between ranching and conservation is peculiar. The NCC promotes conservation easements and land purchases as the foundation of its mission, and its

ranching partners dismiss or circumvent management prescriptions at every opportunity (or else comply if coerced). On the one hand, a conservationist landlord is bound on principle to honor the science behind the assessments, yet it cannot bear, on the other hand, to make enemies. By the same token, amenity seekers, those who buy land locally for reasons of quality of life who are suspect by NCC standards, are likely to be staunch conservationists, and some of them do not hesitate to assert their private prerogatives. Thus while the NCC tergiversates, potential allies like amenity seekers get marginalized and pull away from the NCC.

The above riddle calls for further examination of what passes as rangelands conservation in this context. That opens up a Pandora's Box of which I can only take cursory account. First, scientists have their own designs for what constitutes 'landscape' and what order should prevail there; and second, the scatter of concepts, which scientists wield as incontrovertible science, offers no integrated epistemological map for the NCC to get out of the conservation labyrinth it has parachuted into. Surely there are multiple trail markers, as a function of an immense amount of scientific literature and research dedicated to the issue. But scientists diverge at some of these markers and the politics of conservation keep adding additional markers.

The 2001 Conservation Act of Alberta stated that the protection of land that "exhibits exceptional and diversified scenery" was sufficient ground to grant a conservation easement (Alberta Government 2001:3). This criterion was well within the loftier aims of the NCC and made the easements for the Project a bureaucratic cinch. But when the Government of Canada inaugurated the Natural Area Conservation Program in 2007 and

appointed the NCC to carry out its objectives, it committed the NCC to a specific “science-based process”.⁶⁰ The rules of engagement had shifted and the impetus came from above. This was a new quandary for the NCC and it put the Alberta scientific team in turmoil. The national NCC office began a vast program to devise ‘conservation blueprints’ (Riley, et al. 2007), a scientific inventory of priority landscapes for conservation across southern Canada. It subsequently designed plans for multiple scales, from ecoregions to ecodistricts, natural areas, and down to specific projects and properties. Directives and guidelines came down that had dubious relevance. To be deemed provincially significant for conservation, a grasslands area must contain proportionally no more than 40% of ‘agronomic invasives’, one NCC official explained. He also recalled that a key project to protect the historic OH ranch was nearly derailed when this directive trickled down from the government’s scientific policy milieu. The OH, like most ranches in southern Alberta, does not satisfy this criterion. The project was rescued *in extremis*, and it is now another flagship for the NCC.⁶¹

Disagreements nevertheless persisted internally. Factions within the NCC Alberta scientific team wished to go by their own book: one ‘taxonomist’ faction targeted indicator plant and animal species, and a ‘functionality’ faction argued in favor of habitat protection, the enhancement of connectivity and wildlife corridors, and ecological functions in general. There are no inherent incompatibilities between them, but approaches are different, whether zealous or pragmatic. Also, there was no coherence between the theoretical NCC

⁶⁰ <http://www.ec.gc.ca/default.asp?lang=En&n=FEF1141D-1&news=FF339FA8-CB6C-421E-8686-FAA79A544125> accessed Dec 31st 2012

⁶¹ http://www.natureconservancy.ca/en/where-we-work/alberta/featured-projects/oh_ranch.html accessed Jan 1st 2013.

blueprint planning process and the tried and true rangelands conservation program designed for Alberta for Public Lands (see Adams, et al. 2003b).

The quest for the preservation of truly ‘natural’ areas, or “functional landscapes with high degree of intactness”, as the blueprint would have it (Riley, et al. 2007:17) did not necessarily parallel the conduct of working landscapes. And there is no fortuitous intersection. The preservation of representative fragmentary remnants of a pristine state is one pursuit, site by site, and the nurture of whatever level of intactness may remain is another, on a broad landscape scale. The authors of the main report for the Prairie and Parklands Blueprint are well aware of ecological dynamics in the prairies and recognize that disturbance has been intrinsic to the landscape makeup of the prairies. Disturbance, however, must be contained. As for the current conservation predicament, the report underlines, cattle have replaced bison and they somehow have to fulfil an important role in biodiversity stewardship. Some exotics are obviously more tolerable than others. The blueprint also specifies that: “One of the more inexorable threats to native ecosystems is exotic invasive species”, in reference to the invasion of agronomic plant species (Riley, et al. 2007:26). Armed with this admonition, one NCC staff scientist went on a taxonomic witch-hunt against agronomic invasives such as smooth brome and timothy. His recrimination against these grass species met with disbelief. “The NCC doesn’t know whether it’s coming or going”, commented one rancher, “they want ranching, they want the scenery, but they don’t want what’s in it”. Professionals in range rehabilitation have the same aversion to plant invasives.⁶² The annual meetings of the Foothills Restoration Forum are quite

⁶² The Foothills Restoration Forum meetings are a venue where agronomic invasives are demonized and their native counterparts eulogized.

telling: in 2009 one keynote speaker spoke with passion about the urgency to contain the spread of *Festuca ovina* in *Festuca scabrella* territory. It indeed happens that sheep fescue, or *Festuca ovina*, competes with the beloved native rough fescue, *Festuca scabrella*, Alberta's emblematic grass.⁶³ But like another reviled invasive in the drier prairie, *Agropyron cristatum* or Crested wheatgrass, it was introduced by a previous generation of professional range rehabilitation experts. At that time, it was good enough that *Festuca ovina* was *Festuca* if not *Festuca scabrella* or one of its related native species, *campestris hallii*, or *altaica*. More important, it constituted a cover of perennial grasses after the complete failure of the agrarian revolution had left the dry belt exposed to wind erosion.

The nativist doctrine plays up irreconcilable differences between fundamentalists and pragmatists. Adherence with the former makes for standards that ranchers have no hope to ever meet on a landscape scale. And the polarization overshadows initiatives that serve multiple purposes. For instance, many ranchers have found ways to use stands of 'invasives' to rest and maintain native stands. Middle-of-the-road strategies deal in practical fashion with a complex anthropogenic environment. Yet these opportunities are lost to big institutional players like the NCC, the UNESCO Biosphere, and Natural Area Conservation Program bureaucrats. It is therefore no surprise that nativism misfires in places that cannot afford it. It is not surprising either that many locals rejoiced when one rehabilitation radical left the Project to go to Saskatchewan and join a NCC program to re-seed large tracts of ranchland to native grass species (at great expense) and re-introduce a

⁶³ http://members.shaw.ca/srollans/democracy/beyond/hansard/hansard_04.html, accessed Jan 2nd 2013.

herd of fifty bison to further re-naturalize the scenery (see Grilz 2011).⁶⁴ By contrast, other people mourn the departure of a middle-of-the-road member of its scientific committee. The latter came to despair that the NCC would deliver a coherent and feasible plan for the Project.

A growing web of predicaments

There is no denying that *prior* to the advent of easements local ranch practices were for the most part detrimental to ecological functions as defined in the guidelines of the NCC's conservation easements. These guidelines rely on the directives for rangeland use on Public Lands (see Adams, et al. 2003a; Adams, et al. 2003b; Wroe, et al. 1988). The basic tenet of range health calls for the carryover of a significant proportion of the yearly production of forage biomass (see also A.S.R.D. 2004). The member of the scientific committee who objected to NCC policies helped elaborate these directives and spent thirty years dealing with various factions, including those ranchers who respect these directives (like ranchers in 'big ranch' country to the north), and those who object to them (like most ranchers in 'small ranch' country). It is tricky to deal with these factions, hence the necessity for the NCC field staff to understand the games that ranchers play, and when and where and how these games are played.⁶⁵ The member in question was discouraged that

⁶⁴ http://www.natureconservancy.ca/en/where-we-work/saskatchewan/featured-projects/old_man_on_his_back_ranch.html accessed Jan 02, 2013.

⁶⁵ The NCC had the opportunity to hire people with a lot of this kind of savvy, besides local ecological knowledge and rangeland expertise. At first the NCC has preferred outsiders over locals (other than one exception, a person who has since quit), and since then its offers have been turned down.

the NCC did not hire a field person with Public Lands experience as overall Project coordinator.

Even with experienced staff, the problem of regulation is not simple. The NCC does not have the same power of coercion as the Public Lands governmental apparatus. As it is, non-compliance is endemic in some areas of the Public Lands and complaints from the public have been ignored. Not only is the surveillance of vast areas problematic, it is also a game of cat and mouse: some mice get caught, others don't; but the cat usually gets to rule. The position of the NCC is much weaker by comparison. This weakness stems from several sources. One of them is *not* intrinsic to the operational limits of conservation easements and even less so intrinsic to the limits of proprietary prerogatives on land that the NCC owns outright. It stems rather from the *ad hoc* nature of its original contractual arrangements. Contractual clauses, restrictions and protocols are not uniform as they are in the Stewardship Code of Practice for Public Lands (Alberta Sustainable Resource Development 2007). Instead, as the above case studies have shown, the NCC tailored its contractual arrangements to suit individual situations and added compromises to further entice sellers. In terms of a putative Constitution, the miscellaneous collection of rules nowhere approximates environmental governance. As explained in the previous chapter, this weakness transpired from the NCC's handicap in the land market, and the nearly impossible mission to assemble a collection of land titles under the same institutional umbrella.

Also in contrast with Public Lands, the institutional landscape of the Project is not nearly as homogenous. One source suggests that 20% of the Project landscape is not yet

secured under easement or any other property rights and the NACP indicates 33%. Furthermore, a significant proportion is secured under easement with the Southern Alberta Land Trust Society, SALTS, which has different protocols. And within the remaining portion secured by the NCC, one third is under conservation easements and the rest is land owned outright by the NCC (Pearson 2007b:4). The resulting institutional jigsaw puzzle makes it difficult to integrate the management of the range and virtually impossible to integrate the management of wildlife habitat (more on that in the next chapter).

Another weakness is intrinsic to the operational limits of conservation easements. The problem is insidious and, unlike contractual blunders, the NCC cannot avoid it. The malaise over conservation easements has to do with their lack of clout as legal instruments. Ballyhooed as they are in the literature of conservation and environmental law, conservation easements are very shaky in the practice of law. On the one hand, there is little ambiguity about restrictions on land subdivision and development. The provisions of the Act are useful there to ensure compliance. But on the other hand, a conservation easement is fraught with ambiguity as it pertains to ecological performance, especially habitat degradation and grazing protocols, which have since become key articles in the recent NCC easement template. To begin with, the NCC easements commit landowners to *maintain* land as described in the baseline reports. To improve on that amounts to a positive (or affirmative) covenant (see Little, et al. 2004) that compels landowners to perform extra functions like adding ecological value to current 'range health' or another conservation status. This is much more difficult to implement than negative covenants that prohibit specific activities. Both positive and negative covenants are nevertheless enforceable according to the Act, and easement agreements technically grant considerable

authority to enforce conservation values (Alberta Government 2001). But in practice, easements confer nowhere near the power of coercion that Public Lands agencies have over grazing on public lands. It is hard to maintain in court that a landowner has not exerted “reasonable efforts” to fulfil his responsibilities as per the language of easements. A case in point is a current lawsuit that pits the NCC against a landowner to whom it has sold a property with easement attached. Expert observers are not sure that the judge will find against the landowner in matters of negative covenants (an offending wildlife-proof fence), let alone in matters of positive covenants of land stewardship. As it turned out, the judge did not find against the landowner defendant, which has made it more problematic for the NCC to enforce compliance as per similar vintage contracts on the land the NCC owns.

An alternative to conservation easements?

A NCC administrator noted that after losing several court battles the Montana chapter of The Nature Conservancy (TNC) has withdrawn all ecological stipulations from its conservation easements. The NCC persists nonetheless with its prescriptive approach and it hopes in future easements to implement a plan, in the event of conflict, to bring the parties together for mediation or else arbitration. In light of the problems with easements (let alone their poor performance in court), I asked the administrator why the NCC does not simplify the task of easements from the onset with a two-pronged approach: a *rule*-based easement that precludes subdivision and development to begin with, and an *agreement*-based renewable contract to achieve specific ecological targets.

The first is a negative covenant, more or less straightforward to regulate. After all, a conservation easement entails the sale or donation of a right, and in this case a negative stipulation precludes exercising the right to subdivide and develop property in land. From that point forward the easement ‘runs with the land’, the Act specifies (Alberta Government 2001). Subsequent owners thus acquire an asset devoid of residential development potential and presumably pay less for it. As easement statutes now stand, however, subsequent owners also inherit the burden of a positive easement if a previous owner commits to an ecological *target*. These are much more difficult to administer than proscriptive rules, which does not bode well at all for future relations. Even the latter are vulnerable to legal challenges. It has turned out, the NCC had lost a protracted lawsuit against someone who had erected wildlife-proof fencing to control his bison. The NCC had sold that property with negative easement rules attached to prohibit the kind of fences that impede wildlife habitat connectivity which had insufficient stipulations. This kind of setback makes positive easements even more prone to getting challenged in a court of law, and certainly in the arena of place-making. In the latter case, it is vital to recognize that negotiation of place is ongoing.

Hence, a two-pronged approach is necessary to sort out adequately hard rule from soft target. To satisfy the latter, a distinct ecological contract, renewable and renegotiable, stands a better chance than a positive covenant imposed at perpetuity on reluctant parties. To date, a binding contract that prevents subdivision and property development has been unassailable. But given that every easement has contained vague references to a guide for range conditions and none about stocking rates or any ecological target, to date, such guidelines have invariably been ignored (other than the two cases above which are *not*

bound by easements but by leaseback stipulations). There is indeed no way that most local ranchers will let available forage go unused as carryover, which would ostensibly improve the regeneration of native plant communities; and they will certainly not deliberately set it aside for wildlife to improve their habitat. So why pretend? Why trumpet that local ranching practices are *a priori* conducive to sustainable conservation? And why not, in the place of unwieldy positive covenants, offer a systematic incentive program to defray the opportunity costs of conservation? Instead of a one-off payment, defrayment could occur at intervals, based on actual performance. In other words, would it not be more productive to compensate for *tangible* ecological goods with *measurable* services?⁶⁶

The administrator dismissed the suggestion. There is no ready source of funding for services, he contended, and corporate donors in particular will not agree to pay for ongoing commitments. Funding is available for real estate assets and for tax-deductible easement transactions, but not for sound practice. This, in turn, implies that conservation is a ready-made commodity object. The NCC nevertheless inserts conservation values into the agreements regardless of compliance. It is dependent on good will to the extent that, as the administrator remarked, surveillance presents a grave problem. Evidently, the NCC is aware that the main contingent of landowners is a recalcitrant polity, not the natural stewards it promotes. The charade therefore continues. There are those landowners who are glad to sign up with the tacit understanding that compliance is only nominal, not by the book. Those are the official champions. Then there are the villains: those who do not sign up for easements because they disagree with them on principle and suspect an ulterior

⁶⁶ This is not to deny that goods and services schemes backfire for lack of accountability, or that commoditizing nature is a highly problematic proposition.

motive; and those who would sign up if easements were carried out meaningfully but refuse because easements are a sham. Then there are those who sign up because easements at least prevent the worse case scenario: the demise of a ranching landscape. “We deal with the Nature Conservancy because they were the least threatening of all the sharks in the water”, said one rancher from the southern foothills, “The Nature Conservancy is protecting us from what happened to that Priddis country [a ranching area outside Calgary] that was all swallowed up by development”.

The NCC is loath to contemplate official contracts for ecological services. By the same token, however, it joins other ENGOs (amongst them the Alberta Conservation Association and the Waterton Biosphere) to subsidize the ecological functions of ranching through the back door, with financial incentives to buy technologies like water pumping systems, fences for riparian areas, bear-proof steel grain bins and so forth. These are nudges towards conservation values that do not in any way constitute a concerted strategy. In other words, the NCC wishes to be a munificent conservation landlord and, until the impasse gets somehow resolved, it gets to be a figurehead that governs in name only. The lack of accountability is therefore pervasive. It does not limit the influence of the NCC at extra-local levels amongst policy-makers and funders, provincially and nationally; but at the local level, it does limit the credibility of conservation easements in some important respect.

More specifically: positive (or affirmative) covenants are not trivial or benign considerations for the landowner even if they do not leverage practices. Arguably, the charade constitutes a *counter*-incentive. If a rancher can get away with practices that

contravene the stewardship code of practice spelled out in an easement – that does not remain a secret for long – then why should someone else make any sacrifice to follow it? This is especially the case since the NCC does not wish to involve the justice system to weigh in on such nebulous matter as land stewardship. Bear in mind that a landowner who has signed a conservation easement is also in a weak position to sell ecological goods and services afterwards. It would be like asking to get paid twice for the same commitment. Ranchers in ‘big ranch’ country to the north are well aware of this bind and for a long time they have resisted the advances of the NCC.⁶⁷ The operations of these ranchers are still profitable, although barely, and they consider that the sale of ecological good and services is a necessary part of their future.⁶⁸ They therefore fear that if the NCC monopolizes the brokering and holding of easements, it will also control the sale of ecological goods and services indirectly. Ranchers would therefore find themselves under its tutelage, unable to negotiate directly with the government or other organizations for compensation. The Waldron ranching Coop, for instance, has declined for years to sell an easement to the NCC for a hefty \$10 million.⁶⁹ To some extent, the reluctance has to do with the relinquishment of power at the ground level. What newfangled land use protocols will this new partner

⁶⁷ The OH ranch is one exception. The owner, Doc Seaman, made a high profile donation of an easement which is now held in trust by the NCC. The tax credits were applied against the sale of the Calgary Flames hockey club he also owned. And whereas the OH is now a flagship of conservation, other big ranchers are in no position to join in and benefit in the same way.

⁶⁸ For the most part ‘big ranchers’ in the northern foothills operate on grazing leases for which they cannot sell an easement. The extent of their private land property is relatively negligible and they estimate that their practices have more value than an arbitrary easement. Although they control their own land trust for easements, SALTS, they have yet to commit their own private land because of the lack of funding for SALTS to pay for easements.

⁶⁹ The Waldron has since sold an easement to the NCC for over \$15 million and both parties have found a middle ground for land stewardship.

want to impose? Will ranchers be hostage to the native grass obsession of those who don't have to make a living from the land? The dilution of property rights could also hide a more insidious agenda: what does the NCC have up its sleeve to control entire landscapes? The NCC has attempted to clarify these issues in vain, improvising on the go as usual. These ranchers, however, want no off-the-shelf recipe for ecological goods. They would prefer a coalition with upfront and unambiguous power-sharing arrangements that would leverage instead of diminish their influence at the extra-local levels of decision-making. For that purpose, the NCC's track record of "Mickey Mouse" conservation for the Waterton Project, as one rancher for big ranch country puts it, is the worst model imaginable. And it makes it worse again that the NCC still collects overall credit for conservation regardless of its performance on the ground.

It is important to note here that the above discourse from big ranch country focuses its critique on a convenient scapegoat, the NCC, which is safer than to implicate ranchers in small ranch country. I reiterate here that it fits the year-round (or almost year-round) grazing program of big ranchers to leave substantial carryover of grass for the dormant season, which is highly beneficial for the persistence of native grass species, one the one hand, and on the other, native species cured on the stem are much more nutritious than mature agronomic species (Adams, et al. 2003a; Adams, et al. 2003b). The bimodal program of small ranchers conveys no such motivation to secure a grass bank for winter grazing. Hence the critique of the NCC involvement in the Project in small ranch country is aimed indirectly at the ecological soundness of a bimodal program that is deleterious to native species. The NCC for its part juggles compromises between the imperatives of small ranchers and those of range scientists.

The NCC found itself in a hot pan when it initiated the Project in small ranch country, and to its dismay it has since jumped into the fire of another landscape polity in big ranch country. For the purpose of this analysis, the contrasting of landscape polities serves to further elucidate the quandary of the NCC in the context of the Project. First, the odds were dismal that it could buy up a fractured landscape for the Project in the face of hyperinflation. Second, it did not fathom how different practices were from one ranching landscape to another, and how different their respective historic, economic, and social constitutions were as well. In other words, there is no essential 'ranching' or 'conservation' out there that is not shaped by local and regional landscape polities. And the NCC has yet to decipher the Project polity itself and figure out its local 'politics of what', as in 'what is ranching' and 'what is conservation' in each of those places, let alone understand the politics of who gets to decide what is good. These politics unfold in such different ways in these places that they contradict. If the NCC wished to reconsider the function of conservation easements, devise ecological goods and services contracts, and elaborate an integrated landscape plan in the open, not some backroom hit-and-miss stratagem, it could meet with powerful allies in big ranch country. It has made many enemies there instead. Granted, however, that the organization has since signed an easement agreement with the largest ranch there, the Waldron, with sufficient assurances for the owners that they retained the discretion to manage as they see fit. But in the small ranch country of the Project where ranching cannot sustain itself anymore, the endeavor is a rescue mission, a hush-hush affair. Any lifeline will do and subversion is the rule. "It's like trying to herd hungry cats", said one despondent rancher who conceded that the "game was up" in the southern foothills, having tried in vain to mobilize the community in a new direction. The

rescue from the condominium curse is a tremendous accomplishment in itself. But to pretend to do grasslands stewardship and conservation?

Chapter 4 When utilitarianism changes tracks

The conservation movement borrows from several disciplines to make headway from theory to practice. It borrows from the discipline of economics the concept of ecological goods and services. The functions of ecosystems then get translated into specific monetary values (see Costanza, et al. 1997; Costanza and Farber 2002). Economic concepts help to regulate exchange but they cannot reduce nature to a commodity and govern thereafter without at some point inciting indignation. The discourse of conservation also converges with movement for the rights of species: it is a “moral obligation”, renowned conservation biologists Michael Soulé and Reed Noss say, “to protect wilderness and to sustain the remnants of the Pleistocene animals and plants not only for our human enjoyment, but because of their intrinsic value” (Soulé and Noss 1998). Protection offends just as much, however, when the rights of nature interfere with the rights to human safety, food and livelihood. Then conservationists borrow from ecological theory, of course, using, for instance, a “coarse filter” approach (Noss 1987) to identify ‘surrogate species’ as shortcuts to guide their decisions (Caro and O’Doherty 1999). Taken literally, proxies like ‘surrogate species’ and ‘umbrella species’ become confounding “buzzwords” (Caro 2010) and some biologists find *that* there is very little empirical evidence to support the theory behind them (Andelman and Fagan 2000; Murphy, et al. 2011). Shortcuts offer questionable guidance.

The above quandaries have complicated the tasks of the NCC for the Waterton Park Front Project in its attempt to harmonize livelihood and conservation. The reliance on

proxies as a concept also fostered a taxonomic approach to conservation. This approach singles out species and extracts them from their ecological, social and historical medium. I will illustrate in this chapter that shortcuts to conservation can be misleading, but first I will concentrate on a local instance of a comprehensive approach to conservation that the NCC has yet to use as a practical blueprint for its overall scheme.

The previous chapter demonstrated how difficult it is to reconcile views about the use of rangeland plants. Conservationists, the NCC amongst them, also consider that some plants are part of nature and some are not. This depends on where they are situated, of course, and whether they are 'native' to these sites or not. Ideally, the merits of native plants are written in law too. A motion was moved in the Alberta legislature in 2003 to amend the Emblems of Alberta Act and name rough fescue as emblematic grass for the province⁷⁰ (Alberta Hansard 2003:79-91). Rough fescue is the foundation of ranching, proclaimed the Member of the Alberta legislature for Grande Prairie-Wapiti; "native prairie grasslands are equal to the tropical rain forests as effective carbon sink", he added (2003:79). Rough fescue also fights the "dreaded greenhouse gas", claimed another Member (2003:89). Rough fescue spoke for Alberta's natural history and for its proud ranch history. Everyone agreed it was the best provincial representative from the world of grass plants and it needed to be protected from invading plants. Rough fescue *Festuca*

⁷⁰ Foothills rough fescue *Festuca campestris* is one of three members of the umbrella rough fescue species *Festuca scabrella*.

scabrella scored a victory, and with applause all around, the motion was carried unanimously.

Advocates lean on scores of arguments to uphold rough fescue as a key species for the natural rangelands of Alberta. Scientific wisdom has it that it performs exceptional duties: it has long been a mainstay for livestock and for wildlife, and it is said to deliver outstanding ecological services. It was therefore a shock, confided one prominent range manager working for the Alberta government, when it was confirmed that rough fescue and other native species did not sequester more carbon than introduced grass species (see Bremer 2009). Rather, the best gain in organic carbon sequestration was obtained by converting cropland to rangeland, with native or introduced grasses. The stellar reputation of the rough fescue would be propped up otherwise, so he hoped.

Ranchers agree that native grass species are important. In much of the province's rangelands, ranchers are said to abide by the principle of 'take half leave half' that rough fescue thrives by it (Willms, et al. 1988; Willms, et al. 1985). Ranchers in the southernmost corner of the province hold the same discourse. For the most part, however, their practices do not follow suit. Their economic rationale is quite simple: winter grazing is seldom possible in these parts and cattle get to graze most of the available grass during summer when it is accessible. Unlike most of their Albertan counterparts, ranchers on the private lands of the Project have full discretion to adopt whatever grazing regime they wish, free from governmental interference. And given that nurturing the native range did not fit their management priorities, there was little chance that local ranchers would change their ways unless they were compensated.

The Horseshoe model: a dead ringer for ecological rehabilitation

I named the model solely for the present argument after one of the first properties the NCC bought at the onset of the Project. It is not so much a model as an alternative approach that has reversed a long trend. The Horseshoe half section was one of the last local remnants of what had been open range in the area until 1910, and lies adjacent to the National Park. Until Bert Riggall bought it, it was considered free land for anyone to use and the same went for the mountainside until the Park put up a fence. Family lore has it that cattle, milk cows, goats, and sheep were turned out there and grazed every stem of grass. It was homesteader country and every unclaimed parcel was an opportunity to free up land on the homesteads to make hay instead. Fee agreements were in place with the government land agent to put up 'wild hay' on unclaimed land, but haystacks were often raided (Hatfield 1907). Hay vanished without a trace, more so than livestock. Rustling was unusual: short of crossing the continental divide, rustlers had to run the gauntlet of homesteads. And for want of workforce, homesteaders found it more convenient to risk depleting the range than stand vigil by a haystack. For the same reason, eradicating wolves and bears was more expedient than herding.

The next three pages show parts of maps at the Glenbow Museum in Calgary from the surveys of the Department of the Interior.

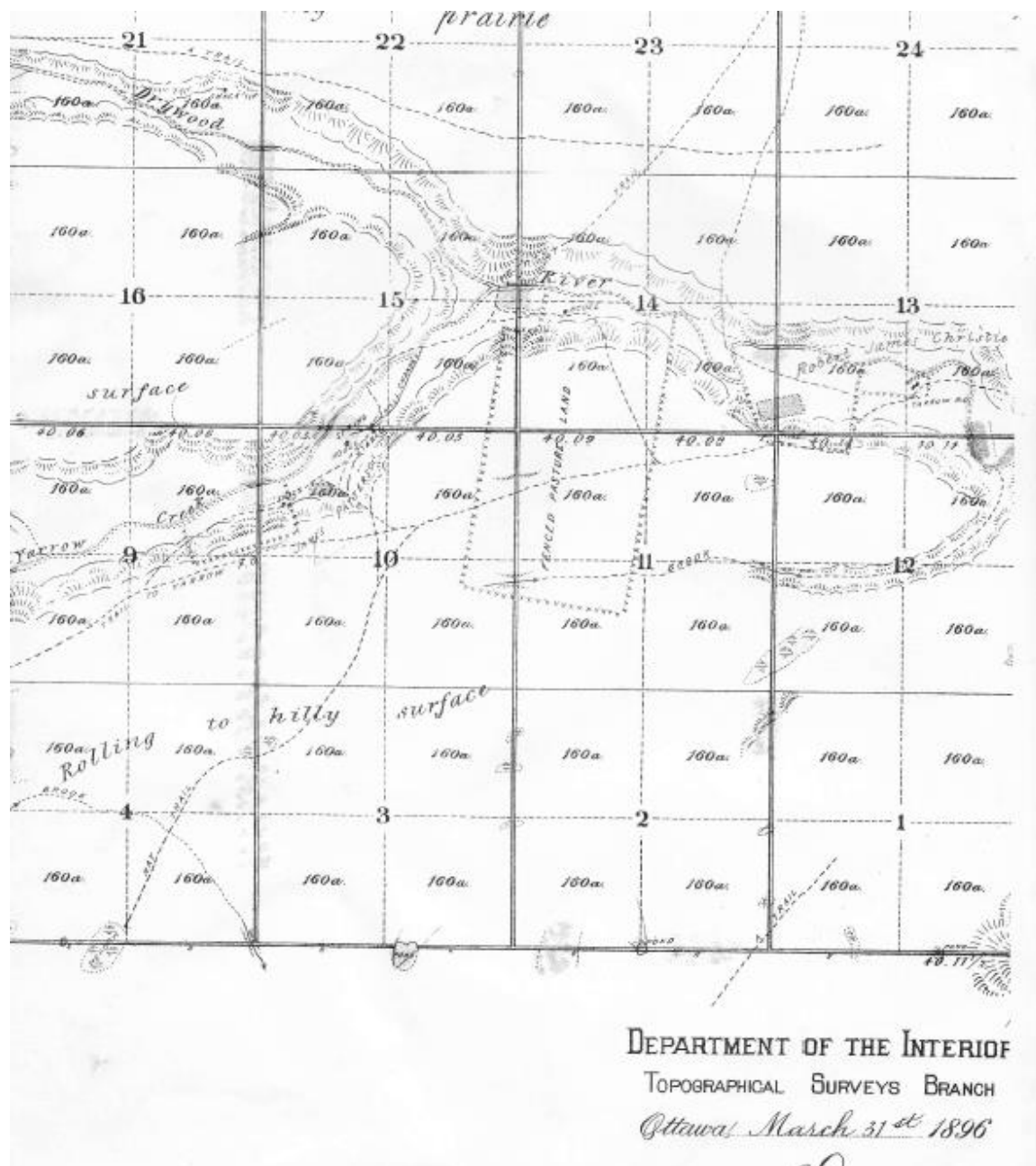


Fig 4.1 The 1896 survey map of the Drywood River-Yarrow Creek area shows a small number of squatter homestead headquarters west of the Waterton River. Note that the fenced fields do not correspond to the survey grid. The survey had not been staked yet and the squatters had not yet made formal claims. The map shows a thin scattering of homestead marked by fences, also a few 'hay trails' between headquarters and native hay land, and a trail towards Pincher Creek to the north. The rest is 'Rolling Prairie'. The identification number is indicated in the center of each surveyed 'section'.

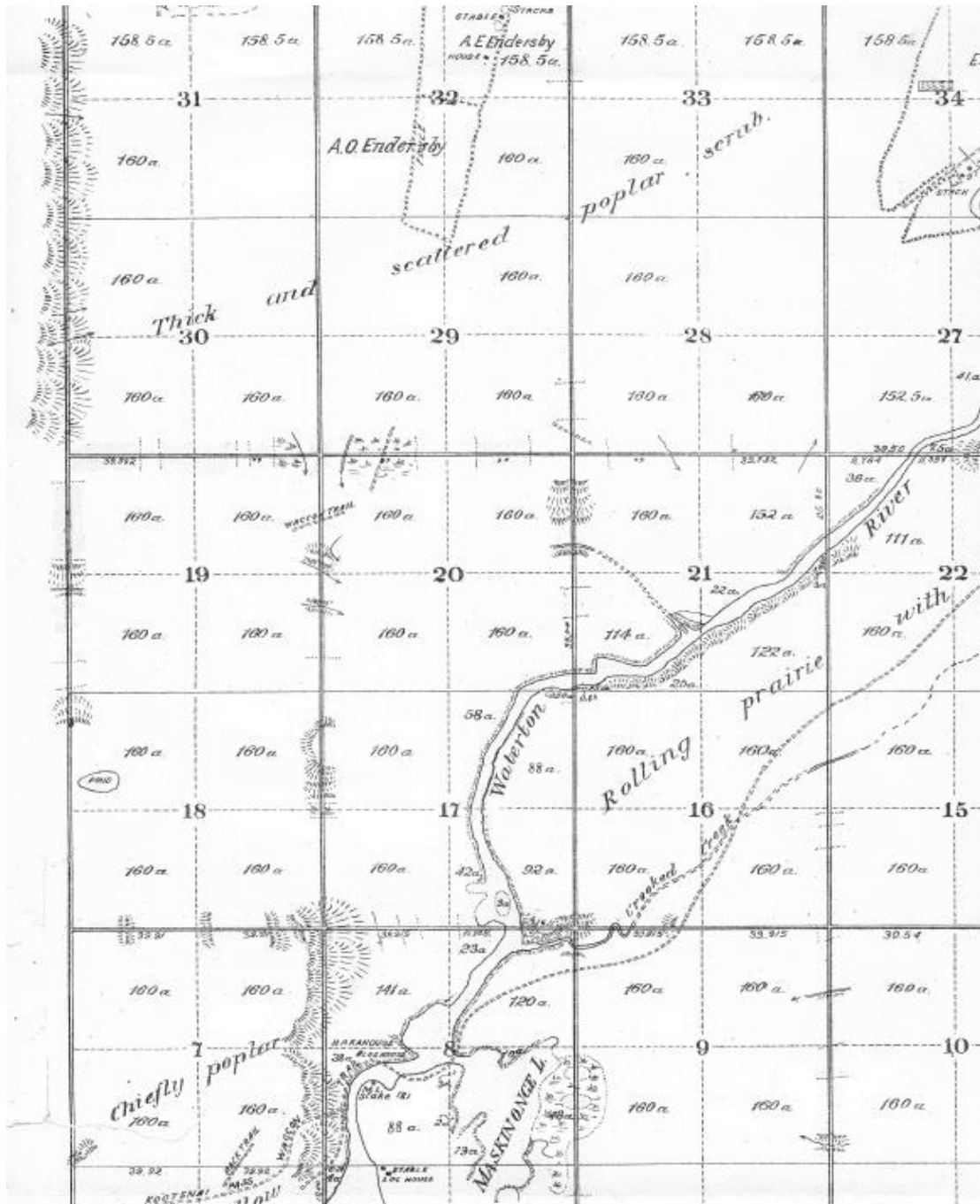


Fig. 4.2 Part of the 1902 survey map of the Department of the Interior. The map, at the Glenbow Museum, shows the layout at the mouth of the Waterton River, with the house of an early trapper and the fenced perimeter of two squatting ranchers to the north. The site of future Riggall homestead is 3 miles (5 km.) to the northwest, on the edge of the mountains.

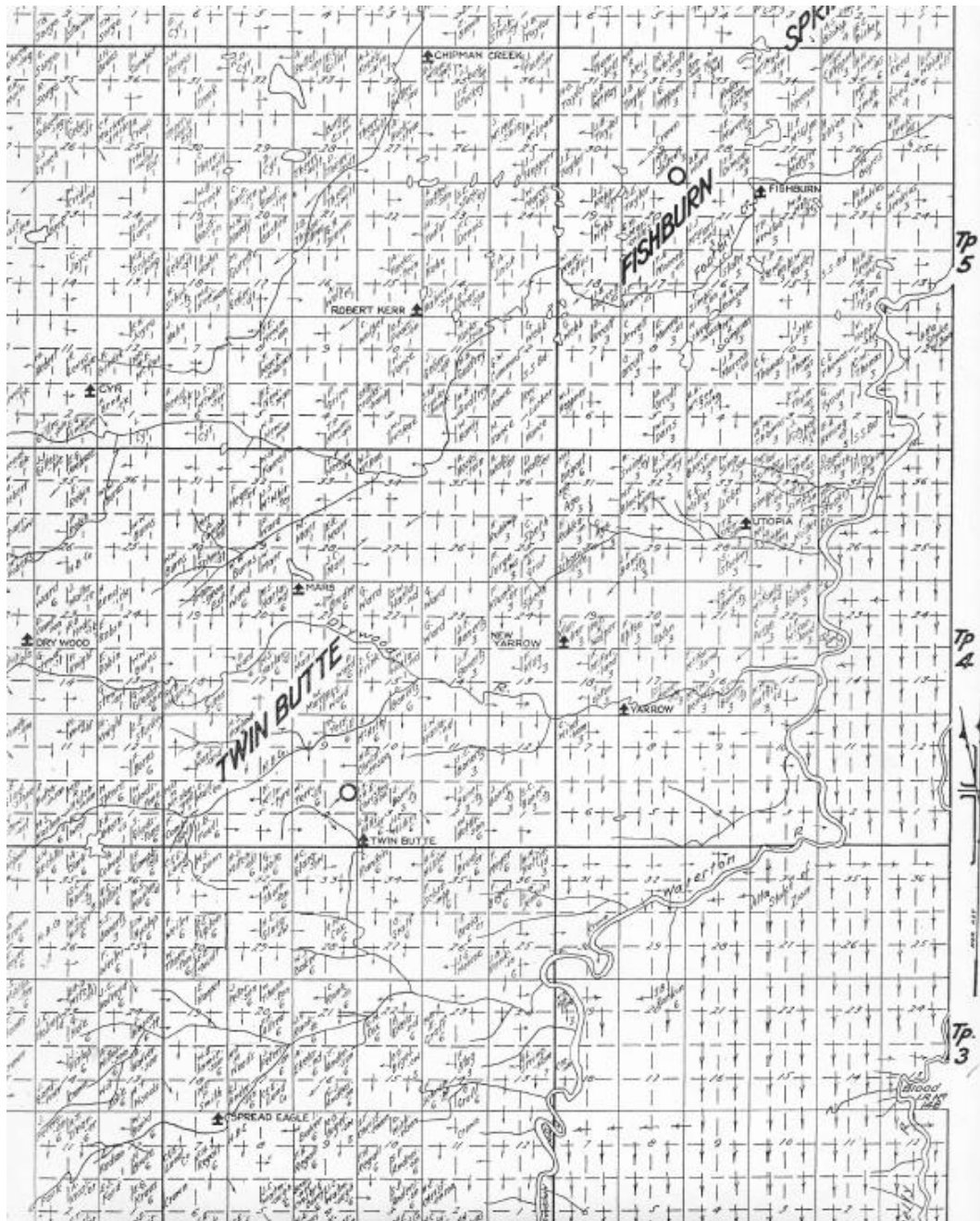


Fig. 4.3 Part of an early 1900s map of the Pincher Creek District shows the complex layout of properties by the end of the first decade after 1900. West of the Waterton River, homesteaders had claimed most of the available land. Some of them had already assembled several quarter sections. East of the river, the map shows part of the "Alberta Stake of Zion," which the Cochrane Ranch had recently sold to the Mormon Church. In the span of fifteen years, the landscape had gone from unclaimed open range, except for the Cochrane grazing lease, to a grid of private homesteads.

The Rigall family ranch broke up in the early 1960s when Doris Burton, one of Bert's daughters, challenged her father's will. She obtained the Cottonwood Canyon homestead quarter and the Horseshoe half-section and leased it for several decades. The rest of the ranch went to her sister Kate and husband Andy Russell. It was not like Doris to lease to her brother-in-law or her nephews so she made a deal with a neighbor instead. In return for grazing access, the rancher paid the land taxes and looked after her little herd of cows. Such share arrangements were common at the time, but it was difficult for a single woman to be taken seriously as a cattle owner. Within a few years, Doris found out that the neighbor had put his own brand on many of her calves and she ended the arrangement and leased to a series of other neighbors afterwards.

For nearly four decades, until 1997, the grazing regime followed conventional patterns. Cows were trailed up from their wintering grounds to the high pasture of the Horseshoe half at the beginning of the growing season, in late May or early June and stayed there until late October or whenever the snow cover chased the cattle out. The native grass was shaved off like during the open range days.⁷¹ Productivity eventually declined and aspen encroachment became rampant. In the end, the last ranchers to rent the Horseshoe half were putting fewer animals than their predecessors, about 25 head for five months and yet range conditions did not ameliorate.

The Horseshoe half section was one of the first ranch properties that the NCC bought. It served as a small buffer for the Park and for its trumpeter swans, a threatened

⁷¹ 'Tame grasses' for ranchers, or 'agronomic invasives' for taxonomists are the same plant species. They are comparatively grazing tolerant and eventually dominate severely grazed rangelands.

species under the wildlife Act, which often attempted to nest there.⁷² The Russell family had brokered the transaction and the NCC leased them back the half-section for a nominal yearly amount (\$500 per year). John, one of Bert's grandsons, integrated it back into the family ranch, which his brother Charlie had bought from their father Andy Russell. At the time, Charlie had already quit owning cattle and rented out pasture instead. He has rented it to the Barlow neighbors (a pseudonym) on an animal/unit/month (AUM) basis. John is a wildlife biologist and range plant taxonomist and he has attempted to restore the Horseshoe half section from a highly modified condition towards the plant composition of the Parkland Foothills Fescue ecoregion, the reference plant community for that particular site (Adams, et al. 2003b). The grazing plans he designs every spring for the Barlow cattle differ from the local ranching norm in several ways: he allows cattle on the range later in the spring after the grass has a head start; he reduced the stocking rate to 40 AUMs for the entire season; he has since required the lessee to move his herd regularly and graze the isolated riparian pastures for a very short time only. The amalgamation of the Horseshoe half with the Russell ranch was a perfect fit for John's overall grazing strategy. When a growing season is favorable and the inventory of dormant grass is plentiful, he adds another week of grazing in the fall before the cattle return to their home ranch. The aim of the shorter period of cattle occupation is to graze tame grass species, preferably at the 'heading' or 'grass-shot stage' as evenly as possible to keep them vegetative and palatable

⁷² <http://www.natureconservancy.ca/en/where-we-work/alberta/featured-projects/waterton-park-front-project.html#.UPTLJeiBNiU> accessed Jan 13th 2013. See also http://www.natureconservancy.ca/en/what-we-do/resource-centre/featured-species/trumpeter_swan.html accessed Jan 13th 2013.

and also to provide long recovery periods for the native grass. The density of animal numbers (as distinct from the stocking rate for the ranch) is relatively high pasture by pasture, but this, in turn, evens out the spatial distribution of grazing activity overall and improves the control of forage inventory.⁷³

John's management challenges the common saying that 'cow knows best'. The current program on the Russell ranch regulates the distribution and timing of grazing activities in order to overcome the propensity of cattle for loitering. Over a period of twelve years, John reported that native grass species have gained back some ground and regained much vitality, especially rough fescue. John's program demonstrates that it is feasible to reverse a long trend of decline, although a return to the plant community of reference will never be complete (Adams, et al. 2003b).⁷⁴

John has also secluded the riparian area of the upper section of the Cottonwood Creek from the surrounding pasture, allowing cattle to graze it lightly for short periods of time. For several years he did this with electric fencing before the Alberta Conservation of

⁷³ In conventional 'continuous grazing' regime (Bryant, et al. 1978; Holechek, et al. 1998), cattle can wander about anywhere in a large pastures without restrictions. Such situations generate high spatial variability of grazing impact (Teague, et al. 2004). Gregarious large herbivores often prefer to congregate and loiter in areas of predilection, especially in the absence of predators (Ripple and Beschta 2004; Ripple and Beschta 2005; Ripple and Beschta 2006a; Ripple, et al. 2010; Ripple, et al. 2013). The practice John has adopted regulates the timing of grazing the distribution of cattle. Most important, it implements recovery periods for plants after defoliation. Such practice is done elsewhere with much higher animal density (several hundred animals per group), shorter periods of occupation, and potentially longer recovery periods for plants (Savory 1999). Herding achieves the same if the timing and the trajectories of herders are coordinated accordingly. To achieve similar effects, some ranchers move herds at intervals instead (Sayre 2001).

⁷⁴ John has experience making rangelands health assessments and has done it professionally. About range conditions, he knows the tell-tale signs well and keeps track of them over time in a mental map of sorts. He did not keep a formal track record of his observations and has yet to do a formal follow-up after the original baseline transects. I found that other rangelands professionals who lived on a ranch relied on their own bank of remembered observations for their own places.

Alberta (ACA) defrayed the installation of permanent riparian fences. Within a few years the stands of Tall buttercup (*Ranunculus acris* L.) and other forbs had receded and the status of riparian vegetation had improved markedly. John also transplanted willows on eroded sections of the creek to build up its structural resistance to flood damage.

John hypothesized that the expansion of trembling aspen on the Horseshoe pasture, or 'encroachment' (Dockrill, et al. 2006; Jones 1983) has to do with the scarcity of beavers as much as with the absence of fires, which is the common explanation (see Parks Canada 2010:11). John has since reintroduced beavers on the ranch with the financial help of the NCC. The water level of the Horseshoe Lake had dropped so low that the first reintroduction was unsuccessful and to give the beavers a better chance of survival, he waited for a wet spring when it began to fill again. Within three years after the second reintroduction, beaver had re-colonized the lake, built dams downstream on Cottonwood Creek and erected houses in the interconnected ponds. This in turn slowed down the speed of spring runoff and the rate of erosion.

Since the late 1990s, carcasses of road-killed deer had been dropped off on the ranch as part of the government-subsidized program to intercept grizzlies in the spring to keep them from migrating down towards farmyards and homesteads. This suited the family and John often exclaimed that: "There is never enough bears on a landscape!" Yet John put a stop to the drop-off of carcasses for a few years. He had observed that bears had dug out the beaver-houses on the stream banks during dry years. This, he suspected, had precipitated the disappearance of beavers on the Horseshoe Lake and Cottonwood Creek years ago. The drop-off resumed after beavers had re-established and could afford a few

casualties to bears coming out of hibernation. Beavers have since set back the encroachment of aspen trees and the thriving Horseshoe riparian area is a magnet for deer, elk, bears and cougars; as well, muskrats, geese, ducks, and trumpeter swans have secure lodging and nesting sites on Horseshoe Lake. John's latest preoccupation is river otters; he tracks them up and down Cottonwood Creek and wonders if the fish habitat could be improved upstream in the Horseshoe basin.

John takes a pragmatic approach to rehabilitation. Rather than obsess about specific targets like surrogate species, be it grizzly bears or rough fescue, he attends to vegetation, and builds from there up the food chain. John is nonetheless preoccupied with noxious plants and he is a zealot for control. Unlike more benign agronomic invasives, in his way of thinking, noxious organisms have not met any competition at all where they have propagated or else natural controls have been debilitated. Every year he spends many days pulling burdock and several other kinds of weeds. He experimented with the mechanical control of caragana, an imported invasive ornamental, managing to set it back and keep it contained. He refuses to use the organo-phosphates that are used in the National Park. He estimates that it is not well understood how these compounds break down in the soil and water, and what long-term effects residues might have. Also, he has had bad experiences using these compounds. Instead, John has acquired fine-grained knowledge of the ways caraganas spread. Chipmunks spread the seeds along trails into the adjacent woods, not over open prairies. And birds do not seek caraganas seeds, John asserts, since the caraganas do not show up in isolated pockets across any distance as the crow flies. He tried in the past to control caraganas by cutting the stems and applying herbicides on the stump, but he finds it as efficient to uproot the caragana in the spring when the ground is soft.

John also experiments with biological control by seeding patches of noxious Dalmatian toadflax with stem-boring weevils (see McClay 2010) and the results have been impressive.

John's management also challenged the ranching precept that the cow comes first. He gives grass priority over cows, instead. This is not to say that cattle or rancher suffer for it. It is rather a win-win-win situation: (a) given a lower stocking rate, cattle have more forage available; (b) given a per capita fee structure the lessee does not incur a loss of opportunity as if he was required to put fewer cattle on the land after paying a flat rent; and (c) given a substantial carryover of forage for winter, the habitat of wild herbivores is enhanced and thriving populations of deer and elk distract large predators from livestock. The customer has had much to gain from in the first instances, (a) and (b), and nothing to lose from the third, (c), probably gaining from it.

John's pragmatic approach embraces a broad constituency of entities and his preoccupation with the welfare of a large membership has been beneficial all around. The activities of beavers improved the stand of grasses, John surmised, and improved cattle habitat. In this sense, his brand of utilitarianism is broad gauge rather than narrow gauge.

Classical utilitarianism embraces the notion that actions are right to the degree that they tend to promote the greatest good for the greatest number (Bentham, et al. 1970; Mill and Crisp 1998). It has a very narrow view of the range of significant beings, however, and its theorists assume that humans are the only subjects worth consideration. More recently, theorists have deplored utilitarianism's denial that animals are sentient beings capable of feeling pain: this was tantamount to 'speciesism' (Dawkins 1993; Ryder 1971; Singer 1990).

Local land users are seldom as inclusive, however, and this has added to the quandaries of the NCC. And it has been a source of aggravations for John. Local ranchers do not object on principle to a complex ecosystem as long as: it does not interfere with their operations; it requires no expenditure on their part; and there are no significant opportunity costs. Many preach that they are conservationists and again the NCC has endorsed them as champions. Yet, their cow ecosystem runs on very narrow gauge tracks once its native plant communities have been radically modified and have become more susceptible to disturbances like weed invasions, drought, and so on (Adams, et al. 2003b). For his part, John has followed the tenets of environmentally sustainable ranching insofar as ecological 'functionality' is concerned. And by the same token, the interests of his customer's business enterprise have been satisfied. His substitution of local ranching precepts nonetheless goes against current practices and constant vigilance is necessary.

Local ranchers are busy during the summer with their farming and haying schedule, and possibly with outside employment to subsidize the ranch. The operational margins of ranching are narrow and a small ranch, 150 cows or so, cannot afford to hire someone. It is estimated locally that on a year when the market is not bad, it takes one hundred cows to "pay for a man". There are few local ranches that make any profit at all, which is also the case for similar "mountain ranches" in Montana (Pearce 2004).

A grazing regime that allows cattle to range freely within fenced pasture suits them best. When the Barlows first leased the Russell pastures, they found it much more practical to leave the gates open and let their cows circulate freely. The lessees were then free to attend to more urgent tasks. John had to issue an ultimatum before the lessees agreed

reluctantly to abide by the grazing schedule, and a constant watch and reminders have been necessary ever since to make sure that cattle get moved as planned. John also had to repair the fences although it was their contractual obligation. And when he was absent at the end of the 2012 grazing season the lessee let the cattle graze for an extra two weeks. John was dismayed at the loss of grass carryover and he observed that regrowth was slower during the following spring, granted that it was particularly cold, which is a confounding factor.

The problem of allocation

The paradox in the above case study is more explicit at the landscape scale. From that perspective, the outstanding opportunity cost for local ranchers is the loss of available pasturage. John's program assesses the carrying capacity of the range according to the principle that heavy stocking rates are detrimental to native grass species (Willms, et al. 1988; Willms, et al. 1985). John implements light or moderate stocking rates that leave considerable carryover of forage. In that sense, he makes concessions to the native range. By the same token, John deliberately leaves carryover for deer and elk. From a local rancher's perspective, however, John extracts from an inventory that is conventionally available to cows and reallocates it to wildlife instead. It is not much comfort to the rancher that his costs have not increased when the cumulative effect of light stocking rates brings about a shortage of available forage. If this program becomes popular, the portion of the overall landscape available to ranchers shrinks. The carrying capacity for livestock is lowered for fanciful reasons in their eyes, which forces them to reduce the size of their herd

or else compete for additional pasture. In view of the fact that the NCC acquired most of the local ranch land, the implications are therefore enormous. In the interim, the competition for forage has heated up.

On two quarter sections adjacent to Charlie's ranch – excised from the ranch after a divorce – the same cattle owner grazes cattle all season-long, leaving the range severely grazed. The landowners know little about grasslands, and they do not dare challenging local conventions. One section of adjacent land to the north has been locked in intergenerational conflict. Early on, the NCC had bought a half-share in the property and it took over ten years before a court settlement transferred the title to half of the property to the NCC. The NCC has tried to entice the Barlows to sell their ranch with a leaseback option in return for access to additional grazing, including that latest acquisition.

With these deals, the NCC tries to satisfy several agendas. It is very aware that ranchers become resentful when conservation infringes on their entitlements to a livelihood. For all intents and purposes, the NCC has been committed foremost to a public relations campaign. Yet the attrition of ranch operations serves its purpose as well when the demand on resources diminishes. It has been a waiting game, which helps explain the other paradox about the *laissez-faire* arrangements between the NCC and its lessees. At the same time, a hidden tug-of-war has worn down the resolve of the NCC. The effects have been very insidious.

Most landowners who have recently migrated to the landscape did not object to livestock.⁷⁵ Only one has banned livestock altogether but the others have allowed them to graze. The rate of success has varied considerably. One has let the rancher who sold him the land graze his livestock for free afterwards but has grown very dissatisfied since; others have leased their pastures and, for lack of clear guidelines, grazing has been very severe, especially on the properties of part-time residents. These landowners have been looking for guidance and have become so disenchanted with the performance of the NCC that they refuse to sign an easement. One owner, who also refused to sign an easement, has negotiated renewable grazing contracts every year rather than a lease. Her grazing protocols were stringent, specifying the dates for the grazing season and the stocking rates, and the contracts have worked out very well.

The search for cause and effect continues

The NCC has attempted to satisfy so many agendas that it has alienated people in the process. Short of finding any consistency in its strategies, it is necessary to tease out the reasons for it, and one avenue is to compare it with the Horseshoe experiment. On the one hand, the latter shows how cattle can be managed to help revitalize native grasslands and wildlife habitat.⁷⁶ On the other hand, the experiment illustrated the reluctance of local

⁷⁵ People who migrate to attractive landscapes near the Rockies in the US and Canada, have been referred to as 'amenity migrants' or 'amenity seekers' (Moss 2006; Power 1996; Power and Barrett 2001; Thompson 2006).

⁷⁶ It bears mentioning that this kind of revitalization is more likely in a 'mesic' environment where the precipitation regime is predictable and consistent. Conversely, severe grazing has long-term effects in drylands environment (Adams pers. comm.).

ranchers to abide by such reform. In this sense, John's struggles and those of other landowners are also a cautionary tale. Unless the protagonists somehow align the priorities of ranching with those of conservation, the need for surveillance gets more acute as protocols get more complicated. Ensuring compliance amongst scattered interests is a tall order to begin with, and ensuring herd mobility requires an even higher level of surveillance. From that perspective, the predicaments of the NCC are not all self-inflicted through poor planning but stem also from resistance to a change in practices. But for fear of controversy and lack of dialogue, its attempt at place-based governance has failed to gain traction. During the early days of the Project, the NCC staff convened landowners on several occasions, but only those who had signed easement or leaseback contracts, never those who had misgivings. Dissidents were also shunned. One landowner with an easement on his land was not invited again after he disagreed with a decision on the part of the NCC to subsidize the usage of herbicide nor was he advised when the NCC created a local landowner advisory committee in 2007.⁷⁷

The NCC admits in private that John's approach is a model for grazing practices. Two visiting members of the NCC scientific committee, one grasslands specialist and the other a riparian ecologist, were impressed with the range conditions on the ranch and asked the NCC to acknowledge John's results officially. But the NCC has yet to give its public stamp of approval for fear of entering the fray of local grass politics.⁷⁸ The NCC has

⁷⁷ The NCC also organizes green initiatives and invites volunteers to its yearly 'weed pulls'. See: <http://www.natureconservancy.ca/en/where-we-work/alberta/news/seventh-annual-conservation.html> accessed Jan 13th 2013.

⁷⁸ The Russells understand the public relations dilemma and give NCC their full support to keep on buying land. They are glad to let the NCC make use of their home, the Hawk's Nest, and its environs.

nevertheless a reason to be reluctant to give guidance. Range science gives no concerted guidance to begin with, and John's grazing program defies the forewarnings of orthodox range science. As mentioned in Chapter 1, any micro-mobility is identified as 'rotational grazing systems' that have been tested and debated for decades. Scientists are divided about its utility. Rangeland specialists working for Public Lands in Alberta nevertheless officially recommend rotational grazing along with herding to help restore native plant communities and riparian areas (Adams, et al. 2003a; Adams, et al. 2003b; Fitch, et al. 2003; Fitch and Ambrose 2003). Yet, agricultural extension agents in Alberta are just as divided. To get around this, some specialists recommend variations on the same theme under different names like 'skim grazing' for a method of using mobile mobs of animals (Best 2008). In 2009, the NCC sponsored a multiday course on 'planned grazing' (Savory 1999) that also promotes herd mobility. It was well attended but none of the local attendees implemented it. It is nonetheless popular elsewhere in the province, and in Saskatchewan and Manitoba. The 'New Ranch' movement in the U.S. uses similar principles (Sayre 2001; White 2008). In some respects, longstanding practices in the Cypress Hills used similar guidelines (see Bennett 1969:194-5). Locally, however, old school ranchers frown on it. Besides, the NCC has yet to implement appropriate stocking rates, let alone systematic herd mobility.

The NCC would rather excite the imagination of the public with high profile demonstrations than engage with ranchers about practices. One of the Waterton NACP conservation measures is to rehabilitate at least 5 acres (2 ha.) of tame forage pasture into

The Hawk's Nest has long been a destination for the who's who of conservation and the NCC brings VIPs there regularly.

a native grass grasslands by 2014: “Demonstration sites [will be] established where signage and tours [will] take place to showcase these efforts” (Iachetti, et al. 2009:48). The NCC has partnered with Ducks Unlimited for the demonstration and, thanks to the country’s largest industrial plant breeder, Viterra, the NCC will get a generous discount on trademark native Ecovar™ grass seed” (ibid.). Technicians will eliminate the existing vegetation with machines and/or herbicides to suppress competition, and then seed the enclosed plots with appropriate native plant species.

With these demonstrations, the NCC hopes to legitimize its mission. Signage will attract visitors, presumably, and people will stop at the road turnout above the Cottonwood Canyon to read a commemorative plaque and get a view of the panorama, and stop again further along the road for a guided tour of a patch of cultivated rough fescue, Alberta’s emblematic grass.

Bison behind bars

The NCC was not ready when it dabbled in rangeland management, but its involvement with animal icons raised the stakes to a wholly different level of contention. The possible failure of a small reclamation plot pales in comparison to other initiatives that exposed the NCC to the wrath of local people. An outstanding example of the fascination of the NCC with key species is a misadventure with another icon, the bison. This case study shows how the NCC neglected local advice at its own peril.

Fencing is a vexing issue between ranching and conservation, since the proliferation of fences adds to other linear disturbances like roads, pipelines, seismic and power lines, that fragment habitats and impede connectivity (Dyer, et al. 2002; Hanski 1999). The NCC

properties have limited conservation value if fences impede the circulation of wildlife.

When wires are too many, too high or too low or too close together, they interfere with the population movements of one wild species or another (see Gates 2006). John was a stickler in that respect and he abided by strict measurements and a minimum number of wires – he also surmised that if cattle are not stressed nutritionally, they do not put pressure on fences. The conservation easement for the Horseshoe property was the first one for the Project and it contained no provisions for the design of fences. John advised that precise measurements should be incorporated as part of the provisions for wildlife habitat.⁷⁹

The NCC bought the Mile-High ranch property at the northern edge of the National Park and then it found itself short of funds when another land transaction fell through. Some land asset had to be liquidated and a prospective buyer showed up who wished to expand his extensive bison operations from the prairies to the mountains. He seemed to fit the NCC conservation agenda. After all, bison is an attractive conservation target (Soulé and Noss 1998). For the first and only time in the Project history, the NCC sold a property with conservation easement attached. Ranching neighbors had hoped to acquire the property but could not match the price. To their dismay, the new owner proceeded to tear down the perimeter fences without telling anyone. He then installed tall wildlife-proof page-wire fences around most of his property.

⁷⁹ The NCC eventually gave guidelines for fencing but it has yet to include provisions for enhancing wildlife habitat.

These fences contravene regulations for game-farms adjacent to Public Lands (Gates 2006).⁸⁰ Fences impermeable to wildlife circulation had particularly grave effects at higher altitude according to the range specialist who had done the original rangeland baselines for that property. He estimated that the original survey for the property cadastre in the early 1900s reached much higher than anywhere else along the foothills. Consequently, the highest boundary on the Mile-High ranch encroached on Bighorn Sheep (*Ovis canadensis*) habitat. In the past, sheep had been able to circulate across old barbwire fences, but the new fence was impervious.

Bison escapees have since been the bane of the Mile-High neighbors, who object to their presence regardless. The Mile-High ranch fences were not impervious all around. It was a regular barbwire fence along part of the road and bison have gone out regularly. That was one source of local aggravation. Game-farms were a nuisance otherwise and other local game farms shared the same reputation as the Mile-High operator, including one nearby bison game-farm and one elk game-farm (now shut down). Neighbors complained about the damage to stream beds, that green slime has invaded Dungarvan Creek downstream of one of the bison game-farms and that the fish were gone.

Yet bison is the stuff of real nature in public perception and people attribute to the species inherent natural goodness. Bison is an “ethical eco-friendly alternative to beef”, claims a newspaper article about the operator in question.⁸¹ The article in the Globe and

⁸⁰ The operator in question was well aware of the regulations, having participated as stakeholder in the design of “fencing guidelines for bison on Alberta public lands with wildlife and access in mind” (Gates 2006).

⁸¹ <http://www.theglobeandmail.com/news/national/where-the-carpaccio-roams/article1788104/page1/> accessed Jan 13th 2013

Mail, a national newspaper, was a dream opportunity to put bison on their grocery-shopping list.

It is “raised in a conservationist way”, the article continued. Barely one season after his bison replaced cattle, the new owner found that “his grassland was the envy of his cattle-farming neighbors”. The reporter described how the “bison whisperer” gets on his in knees and “rhapsodizes” about the thriving native fescue. The article also portrayed the bison entrepreneur as a victim of prejudice:

“When Mr. Olson converted the Spread Eagle [ranch]– former Nature Conservancy land that had been grazed by cattle – a local cattleman pulled the gates down with a pickup. Mr. Olson's high, bison-proof electrified fences are routinely vandalized. [The fences] are also criticized by the Nature Conservancy in Calgary for disrupting non-domesticated wildlife. Mr. Olson denies these claims”.⁸²

⁸² The reporter obviously did not speak with the neighbors about the ecological status of the range in question. Neither did he speak to the family of the hiker who was gored to death by one cantankerous bison bull. The hiker was a trespasser, quotes the article, and the bison operator argues that he was exonerated of any liability. In another version of the events,⁸² the so-called ‘trespasser’ was walking on a public road that crosses a quarter section of rangelands the operator leases from *Public Lands*, and although it was rutting season there was no posting to indicate that bison roamed in the area. I spoke with a Public Lands bureaucrat who had to deal with the case. It was a public relations nightmare for the government, already embroiled in the game farm controversy. Every party involved except the family of the deceased, another wealthy oilman, was in a hurry to put a lid on the scandal and make the case go away quietly. See also http://www2.canada.com/edmontonjournal/news/cityplus_alberta/story.html?id=43f18be1-b103-497c-8023-a9eaf9af65e3 accessed Jan 14th 2013.

Misconceived nativism

The upshot of the ill-fated ranch sale was a prolonged lawsuit between the NCC and the bison operator, a wealthy Calgary lawyer and oilman, over non-compliance with the easement. The principal source of contention pertained to fencing, but the defendant challenged the validity of the conservation easement as a whole. As it turned out, the judge decided against the NCC and dismissed the charges, but he nevertheless upheld the validity of the principle of conservation easements.

It is nevertheless remarkable that the protagonists are not far apart in several respects. They both sell Nature in popular taxonomic packages. Both also recruit every media outlet possible to extract substantial dividends from icons of conservation. Like the controversial bison operator, the NCC contends that bison is best qualified to help restore biodiversity.⁸³ The taxonomic fallacy is the same for both: to re-naturalize, the fallacy goes, it suffices to substitute an isolated element for the whole in which it has evolved. A bison on a game-farm is still *Bison bison* phylogenetically. Relationally, however, the game-farm bison is nearer a stationary, fenced-in, predator-free bovine. In an effort to clarify its position, the NCC has reviewed the definition of 'ranching' in its most recent easement template and proscribes the raising of domesticated game animals, which is the current legal status of bison in Alberta. And yet the organization yearns to turn back the ecological clock and to restore native purity species by species.

⁸³ I mentioned earlier that NCC introduced bison on its Old Man on its Back ranch in Saskatchewan. The NCC was nonetheless required to contain these animals with heavy-duty fences. The ranch being near farmland rather than wilderness, this was of little consequence. See: <http://www.natureconservancy.ca/en/where-we-work/saskatchewan/featured-projects/old-man-on-his-back-ranch.html#.UPNsPuiBNiU> accessed Jan 13th 2013

The moral of the story

Divided between native purity and landscape functions, the NCC has fumbled with both. Always under intense scrutiny, it has been unable to satisfy conflicting expectations and, unlike John, most local people have become reluctant to get involved. Another professional rangeland specialist gave the following explanation:

The NCC is equipped and educated to manage landscapes "better" than the average landholder, through management directives and strict monitoring protocol. In theory this is great; however, in actuality, it is struggling to keep up with all of its commitments, and as a result, the newly conserved land may be rapidly declining in condition, unbeknownst to the NCC.

He used the bison misadventure as an example: "What was once a thriving foothills fescue landscape has seasonally been reduced to, essentially, a stubble field". The NCC "invests in real estate in the name of conservation".

Surely, the NCC walked into a quagmire by selling this particular piece of land. This misadventure aside, it found it impossible to satisfy every party and has become increasingly tentative. Given that the stewardship of grasslands is the least controversial part of conservation there, it did not attempt to regulate relations with wildlife either. Its conservation easements and leaseback contracts carry no provision for wildlife habitat. Ranchers nonetheless reached their own conclusions: "These people come from away with lots of money and expect we'll turn into Bambi lovers," one of them said. He had signed one of the earliest easements for the Project and received the first local award as NCC champion

of conservation. About this particular rancher, one NCC staff said: “[He] is too old to change, but he is on board and his ranch is conserved: that’s what matters”.

The next chapter shifts the focus from plants to animals as objects of conservation and sources of contention. It will focus on another important conservation target for the NCC, the grizzly bear *Ursus arctos*. For its sympathizers, the grizzly bear is a charismatic, flagship, and iconic species (Gailus 2010b). Conservationists also defend it as indicator, keystone, and umbrella species for entire ecosystems. But for people who live near them, grizzly bears have a much more personal presence. In sharp contrast with its earlier strategies, the NCC initiated public forums that introduced the communities to the views of wildlife scientists, public servants, Park rangers and so forth. The NCC took a new role as intermediary and a broker of information. And the earlier dilemma took on a very different complexion.

Part III Meeting the Enemy

Chapter 5 Bear Attack!



Figure 5.1 Bart the Bear posing for the camera (see footnote below)

The book “Bear Attacks: their causes and avoidance” by Stephen Herrero (1985) has become a classic scientific publication about grizzly bears. The author, a high profile Canadian bear biologist, exposes the dangers of wilderness and his chronicle of bear maulings has a powerful effect on the reader. The list of casualties mounts until it seems to add up to a veritable carnage. One reviewer writes:⁸⁴

⁸⁴ Beside Herrero’s ‘Bear Attack’ on the recommended list online there many books with sensational titles, like “Bear Attacks of the Century: True Stories of Courage and Survival” (Mueller and Reiss 2005), “A Kodiak Bear Mauling: Living and Dying with Alaska’s Bears” (Rogan 2012), “Fighting for your Life: Man-eater Bears” (Hron 2009), “Some Bears Kill: True Life Tales of Terror” (Kaniut 2011), “Bear Attacks: The Deadly Truth” (Shelton 1998), “Don’t Get Eaten: The Dangers of Animals That Charge and Attack” (Smith 2003), “A Grizzly End” (Champagne 2010). On the cover of “Mark of the Grizzly” (McMillion 2011 [1998]), the editor-at-large of the magazine *Outside* wrote: “This deft and gracefully written book is more terrifying than a shelf full of Stephen King novels”. The above is a photo of Bart the famous tame grizzly bear. See: <http://entertainmentweekly.tumblr.com/image/41807681401> 18/8/2013.

This is the single greatest academic look at bear attacks. Herrero is so exhaustive in his efforts to describe every type of bear attack that after a while you wonder how you can possibly survive a night outside.⁸⁵

Stephen Herrero's detailed accounts of casualties build up until the reader concludes that bears must crave the flesh of hapless hikers. A biologist and avid mountain hiker confided to me he was so haunted by these attack stories that he hesitated for an entire summer before returning to grizzly bear country. The sentiment seems general. After winter is over in western Canada, a week seldom goes by without a headline about a bear incident. Bears also took center stage both in local community meetings and in the public discourse of conservationists.

The theme of the next chapters is interspecies relations between humans and large predators. In the introduction, I submitted that the history of ranching was concomitant with the eradication of predators, granted, of course, that ranchers were not the only ones to persecute large predators. The loathing of large predators prevailed throughout the entire settlement episode (Lopez 1978; Nash 1973). Since then, however, wilderness has since become a national preoccupation on both sides of the border, and my theme focuses on animals that have become its most controversial ambassadors.

The theme also reconnects with another defining feature of ranching. The previous

⁸⁵ http://www.amazon.com/Bear-Attacks-Causes-Avoidance-revised/product-reviews/158574557X/ref=cm_cr_pr_btm_link_4?ie=UTF8&pageNumber=4&showViewpoints=0 accessed Jan 16th 2013.

chapter explained how turning cattle out on pasture to free-range posed a challenge to the conservation of rangelands. It also leaves them more vulnerable to predation. The rehabilitation of large predators presents an even more formidable challenge that has to do with a clash with human safety. Large predators are not only considered as pests that kill livestock: they are also very scary to humans. One of the most important sources of conflicts with conservation worldwide is that people fear getting killed by wildlife (Thirgood, et al.). In the case of grizzly bears, the transition from persecution to protection has been particularly abrupt. As late as the 1960s, biologists recommended that grizzly bears should be eliminated from National Parks for public safety reasons (Moment 1968; Moment 1969). Although the perception of risks has not changed and bear biologists recognize that the chance of injury “may be unacceptable”, they also estimate that “acceptance of injury rates is fundamental to bear conservation” (Herrero and Higgins 1999:208).

The wholesale killing of large predators obviously does not work for conservation. Secluding them is not practicable either since it is not possible to contain them in protected areas (Fascione, et al. 2004). Besides, the isolation of small genetic pools in enclaves threatens the survival of entire populations (Alberta Grizzly Bear Recovery Plan 2008; Soulé and Noss 1998). Habitat connectivity, however, is likely to bring humans and bears in close proximity and bears are said to become a threat once they become habituated to human presence (Herrero 1970a; Herrero 1970b). To circumvent this, the conventional recommendation is to reduce the rate of interactions between humans and large predators and it has become standard procedure for conservation officers to resort to ‘aversive

conditioning', scaring them or hurting them so that they will avoid humans (Alberta Grizzly Bear Recovery Plan 2008:22; Fascione, et al. 2004:263). Fear of predators is prevalent in humans to begin with, it seems, and for good measure it is deemed necessary to induce fear of humans in wild animals. A slippage into complacency is destined to have dire consequences. In other words, people and large predators are fundamentally incompatible and peaceful coexistence is synonymous with mutual fear and avoidance.

To follow through on this theme, the next chapters will explore the tensions between estrangement and rapprochement in interspecies relations. Most models of interspecies relations aim to enforce mutual aversion and Herrero's 'Bear Attack' has gone a long way to reinforce that stratagem. But since the probabilities of encounters are on the increase, other approaches are emerging. A later chapter attends to alternative protocols. As a counterpoint to 'Bear Attack', Kevin van Tighem (2013b), former superintendent of Banff National Park, wrote 'Bear Without Fear'. Fear is counterproductive, he argues, and it would be better to abandon aversive training for less interventionist measures.⁸⁶ In his view, radical measures like the relocation of 'problem bears' have led to the death of too many benign bears that might have otherwise taught humans to relax, and he foresees a more amicable kind of coexistence instead.

⁸⁶ I will describe later the methods of aversive training like the use of rubber bullets. Van Tighem recommends instead the use of bear spray in the event of an actual confrontation. The position of van Tighem is remarkable considering that his sister was attacked and terribly mauled by a grizzly bear in Waterton Lakes National Park in the 1980s. She wrote "The Bear's Embrace" (Van Tighem 2001) and committed suicide shortly afterwards. Kevin van Tighem estimates that bear spray would have saved her life, and he offers to make peace with bears, free of fear.

The status of the grizzly bear population

The first concerted campaign to kill grizzly bears was to acquire their pelts (Cowrie 1913) and by the latter quarter of the nineteenth century, the fur trade had extirpated them from their prairie habitat in western Canada (COSEWIC 2002). Considered a pest afterwards by settlers established near their mountain refuges, they were killed without restriction until 1928 and hunting continued to take a heavy toll until quotas came into effect in 1988 (ASRD and ACA 2010:20). Their numbers in Alberta continued to decline regardless of restrictions. The remaining population is now confined to the Rocky Mountains and the foothills and has been estimated at less than seven hundred (691), still on the decline (Alberta Grizzly Bear Recovery Plan 2008:7; ASRD and ACA 2010:23). The southwest corner of Alberta is a possible exception. An influx of bears from British Columbia and Montana may be boosting its small population, recently estimated at 51 (Alberta Government 2012b:8; Kendall, et al. 2009). However, the head of the Bear Recovery Team declared that those bears “may be caught up in the high levels of conflict and mortality in this province, essentially ensuring a permanent, and fatal, one-way trip”, apparently towards regional annihilation (Gailus 2010a:20).

The principal threats to the survival of grizzly bears are closely related: a shrinking population, mortality caused by humans, and loss of habitat. Bears have a low reproductive rate and human-caused mortality has exceeded the sustainable threshold by a significant margin (Alberta Grizzly Bear Recovery Plan 2008; ASRD and ACA 2010:7-9; Gailus 2010a). Unrestricted access to bear habitat, especially by motorized vehicles like All Terrain Vehicles (ATVs), has been the principal cause of the degradation of habitat, making it much less secure for bears (Alberta Grizzly Bear Recovery Plan 2008). Poaching accounted for

the greatest percentage of known and estimated mortalities between 1990 and 2007 (ibid:8). The Alberta Fish and Wildlife Division (1990) and other agencies gave many warnings that grizzly bears were in trouble long before the government halted the grizzly hunt in 2006. The Endangered Species Conservation Committee had already recommended in 2002 to change the status of the grizzly bear under Alberta's Wildlife Act (Kansas 2002). The Government of Alberta officially designated grizzly bears as a threatened species in June 2010 (Alberta Government 2012b).⁸⁷

Conservation organizations in Alberta have been very concerned about the shrinking bear population and even more distraught that the Alberta government was reluctant to follow the advice of the many panels of experts it had commissioned to make policy recommendations. One after the other, Ministers of the Alberta Sustainable Resource Development (ASRD) temporized; the Provincial Grizzly Bear Specialist was demoted in 2006 after complaining publicly about delays and for stating that the government withheld information.⁸⁸ It took many years of public campaigns before the government relented and changed the status of grizzly bears. Changes in status and policy, however, have yet to materialize in significant ways, and there is no legal mechanism in place to compel the Alberta government to follow through with its Recovery Plan even after it declared the species threatened (Alberta Grizzly Bear Recovery Plan 2008; Gailus 2010a:28). It has no

⁸⁷ According to the Wildlife Act, a threatened species is a species likely to become endangered if limiting factors are not reversed, and an endangered species is one facing immediate extirpation or extinction (ASRD and ACA 2010:43).

⁸⁸ See 'History' by the Alberta Wilderness Association:
<http://albertawilderness.ca/issues/wildlife/grizzly-bears/history>

policy to make bear habitat more secure and has failed to enforce regulations concerning access to Public Lands for off-road vehicles; nor has it taken into consideration the recommendations of the Recovery Plan in its management plans for mining, oil and gas, and forestry (Gailus 2010a:29). The government is committed instead to the highest rate of economic utilization and conservationists fear that its views have not changed since former Minister of Environmental Protection stated that the economic development of Public Lands had priority over wildlife habitat (Francis 1998:22; Nikiforuk 1998b).

In its trademark low profile way, the NCC has commissioned the Foothills Research Institute to elaborate its “Grizzly Bear Program”.⁸⁹ That Plan was not made public upon completion but the Conservation Plan for the Waterton area states that grizzly bears are a conservation target of exceptional importance:

As conservation biology would have it, grizzly bears function as an indicator species, an umbrella species, a keystone species, a flagship species and a species vulnerable to extinction⁹⁰ (Gittleman, et al. 2001). An umbrella or indicator species is one whose conservation is expected to confer protection to a large number of naturally co-occurring species (Roberge and Angelstam 2004). Grizzly Bears are considered to be a good indicator or umbrella species for wide-ranging carnivores because of their requirements for large, secure spaces and their susceptibility to high mortality

⁸⁹http://foothillsri.ca/sites/default/files/null/CEP_2010_09_PrtnrPers_NatureConservancyofCanada.pdf accessed July 21st 2013

⁹⁰ An umbrella species is a species with large area requirements for which protection of the species offers protection to other species that share the same habitat (Alberta Grizzly Bear Recovery Plan 2008; Caro 2003; Ozaki, et al. 2006).

(Bergman 2004) (Iachetti, et al. 2009:16).

The Bear Problem

The omnivorous diet of grizzly bears belies their reputation as large predator. In the Rocky Mountains and the foothills, their diet is made up in large part of vegetation, fruit and root, rodents and insects (McLellan and Hovey 1995).

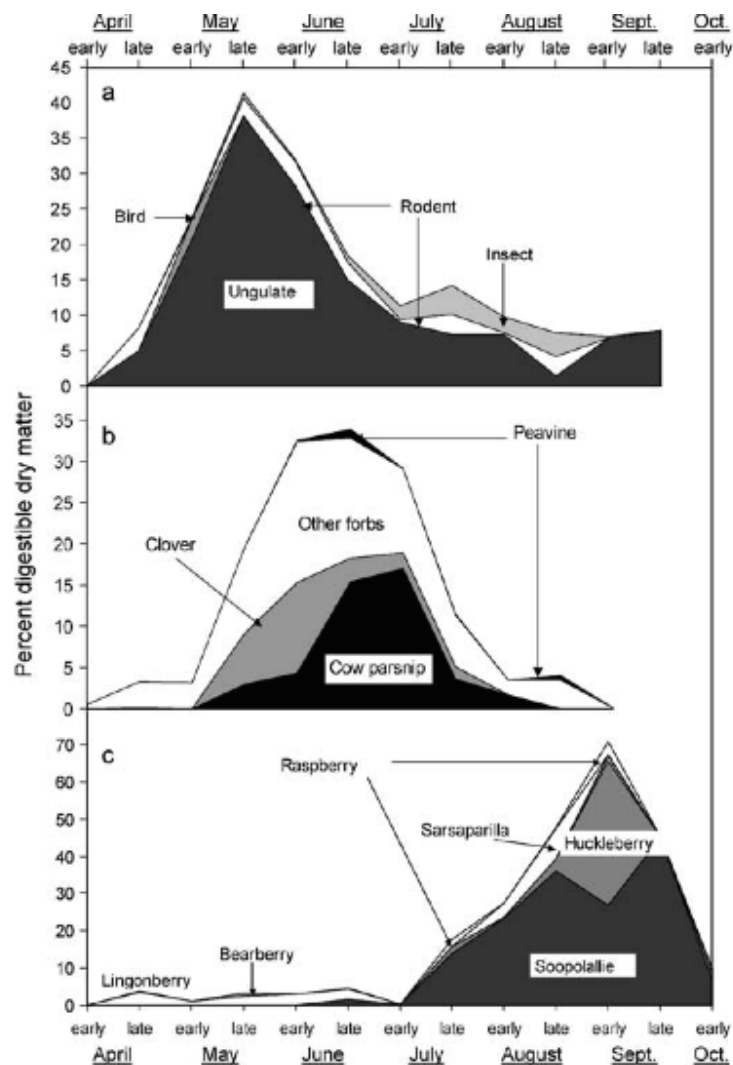


FIG. 2.—Seasonal trends in amount of digestible dry matter content of dominant food items found in grizzly bear feces collected in west-central Alberta between 2001 and 2003 as classified within 3 major food categories: a) animal matter, b) forbs, and c) fruit.

Figure 5.2 Graph of grizzly bear diet in Alberta (Munro et al 2006:1116-7)

Scavenging or killing large mammals is seasonal. Mainly carnivorous during spring, grizzly bears resume a non-carnivorous diet for the most part thereafter: see figure below (Munro, et al. 2006:1116-7). “In these ways,” two eminent bear biologists concluded, “the world’s 2nd largest carnivore can assume a diet that often is more than 90% vegetative matter” (Hamer and Herrero 1985:212).

Wildlife Predator	Claims	Compensation
Eagle	3	\$1,109.75
Cougar	8	\$4,664.62
Black Bear	7	\$4,462.05
Grizzly Bear	10	\$15,347.67
Bear (unidentified species)	5	\$3,823.48
Wolf	127	\$107,150.98
Unknown Predator	14	\$7,815.90
TOTAL	174	\$144,374.35
Shot Livestock	14	\$15,983.16

Figure 5.3 Confirmed losses of livestock in 2009-2010, from the Alberta Conservation Association (ACA) annual report (see footnote below).

Grizzly bears are nonetheless opportunistic. The figure below shows the confirmed livestock kills in Alberta for 2008 (ACA 2010).⁹¹ Ten confirmed losses or 6% of the total livestock losses were attributed to grizzly bears. By comparison, hunters were more lethal than any other class of predators except wolves. Wolves were involved in 127 claims causing 72% of the losses.

Since the 1970s, the Alberta Sustainable Resource Development Ministry has compensated for confirmed losses for 100% of the value of the lost animal on the day it was killed or wounded beyond reasonable recovery (Bergman and Mack 2007; Morrison 2013:4). If the loss is probable but cannot be confirmed, the compensation is limited to 50%. If wounds are not extreme and the animal can be treated at a cost not exceeding the value of the animal, veterinary costs are covered. A recent change of policy has denied compensation for losses to coyote, and for the losses of horses and exotic species such as llamas. It remains legal for a landowner to kill a grizzly bear without first advising the wildlife officer if it threatens human life or property, otherwise the maximum fine for unwarranted killing is \$100,000. (Alberta Grizzly Bear Recovery Plan 2008:3). A landowner (or any Alberta resident with permission from the landowner) can also kill wolves, coyotes and black bears without a hunting permit.⁹²

⁹¹ See the 2009-2010 annual report of the Alberta Conservation Association. Notice that hunters have done more lethal damage than grizzly bears. See p. 50. http://www.ab-conservation.com/go/default/assets/File/Publications/AR/ACA_09-10_AR_WR.pdf accessed Jan 13th 2013.

⁹² See: <http://www.albertaregulations.ca/huntingregs/genregs.html#predation> accessed July 24th 2013.

Livestock losses to grizzly bears have not been exorbitant but the trend is on the increase, with compensations almost doubling from 2008 to 2012 (Morrison 2013:22). Ranchers have been unhappy with the compensation program, arguing that the Conservation officers have failed to confirm genuine kills, and that the official toll does not reflect actual losses. They also felt it was unfair that since carnivores have become a 'public good', most of the burden of protecting them has fallen on them, especially in the south-western corner of Alberta. A report showed that the area was a hotspot with 37% of all compensation claims in the province between 2000 and 2010 (see also Lee 2011; Morrison 2013; Urmson and Morehouse 2012b):

The majority of more serious grizzly bear occurrences (public safety or property damage situations) were recorded in southwest Alberta, particularly in the agricultural landscapes surrounding Pincher Creek and Cardston (Alberta Government 2012b:4).

'Occurrences' are evidently a problem. From 1999 to 2011 in southwestern Alberta alone, the Enforcement Field Services of the Fish and Wildlife Division recorded 5073 such cases:

Of those 5073 occurrences, 1265 were grizzly bear occurrences, 1962 were black bear occurrences, 709 were wolf occurrences, 880 were cougar occurrences, and 257 were occurrences that were unfounded (meaning there was not actually a carnivore involved) (Urmson and Morehouse 2012b:5).

These statistics appear overwhelming until they are sorted out by category. Occurrences are classified as follows (Hopkins, et al. 2010; Urmson and Morehouse 2012b):

1. Sighting: carnivore seemingly unaware of the person, no observable stress-related

response during the interaction;

2. Incident: carnivore caused property damage, obtained anthropogenic food, killed or attempted to kill livestock or pets, or involved in a vehicle collision; or
3. Human Conflict: carnivore made physical contact with person or was intentionally harmed or killed by the person.

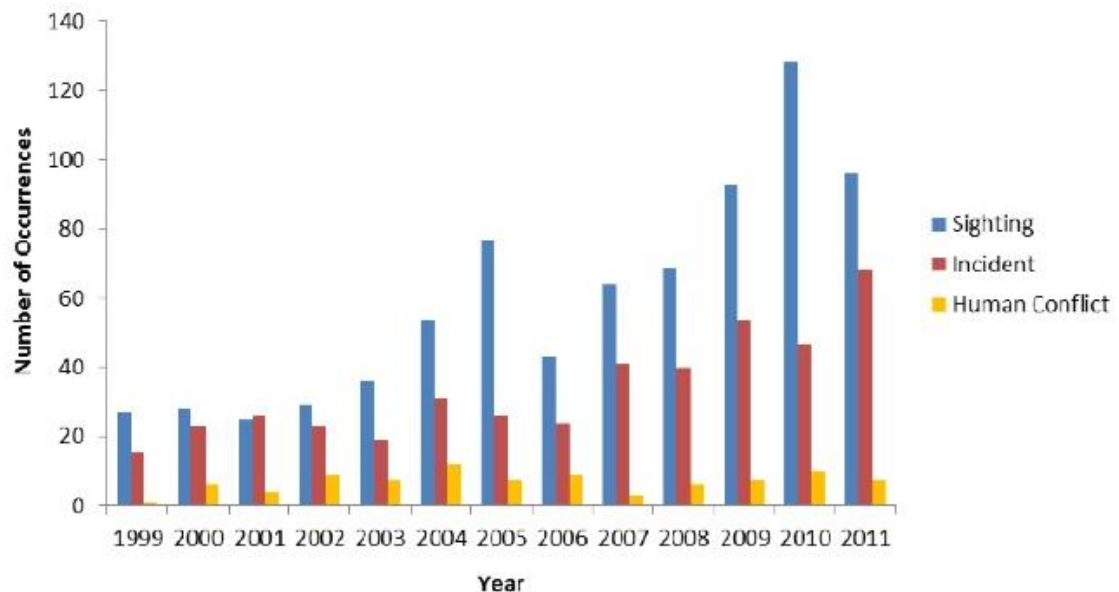


Figure 5.4 Graph of 'bear occurrences' in Alberta between 1999-2011 (Urmson and Morehouse 2012a:1).⁹³

The above figure (Urmson and Morehouse 2012a:1) shows that most occurrences involving grizzly bears were sightings (769). In the case of the 437 incidents, bears had been drawn by 'attractants', bone-yards, dead livestock, or granaries (62%) or else had harassed or killed livestock or pets (33%). The statistics for 88 conflicts include 30 'approaches', 30 'charges', 4 'physical contacts', and 18 instances when bears were killed or wounded

⁹³ See: http://www.watertonbiosphere.com/uploads/biosphere-resources_34_3743708562.pdf accessed July 16th 2016.

(Urmson and Morehouse 2012b:6).⁹⁴ Most of the sightings, nearly all the incidents, and half of the conflicts, occurred on private ranches. The rest took place on Public Lands.

In view that vehicle access and human presence have increased on Public Lands, bear habitat has become much less secure there, especially for bears. Against scientific prediction, however, the resurgence of problematic occurrences indicates that grizzly bears are choosing more dangerous habitat (Northrup 2010). In other words, ranches have become more attractive despite the risks.

The contradictions seem strident. Until thirty years ago, grizzly bears had stayed mostly confined to the high country, at least during daytime. They definitely did not venture very far eastwards beyond the strip of ranches along the mountains. Now that their overall population is ostensibly in steep decline, they have become more visible than ever. The incidence of conflicts has mounted and the landscape is said to be getting dangerous for humans also. Does that stand up to scrutiny?

The historical human toll

Grizzly bears and black bears inflicted 42 serious or fatal injuries in Alberta between 1960 and 1998 (Herrero and Higgins 2003:44).⁹⁵ Twenty-two of these occurred inside National Parks and 20 in the rest of the province where the grizzly population is four times higher

⁹⁴ There was one mauling in Alberta by a grizzly bear in 2011, resulting in non life-threatening injuries (Alberta Government 2012b:4). By comparison, the incidence of fatalities from dog bites, bee stings and lightning strikes is statistically much higher (Herrero and Higgins 2003).

⁹⁵ By comparison, lions have killed more than 563 people and injured at least 308 in the course of fifteen years between 1990 and 2005 in Tanzania (Ikanda, et al. 2005).

(ibid). Black bears, for their part, are nine times more numerous on provincial lands (36,000) than in National Parks (4,000).⁹⁶ Black bears were responsible for 12 of the 20 serious or fatal injuries outside National Parks. That leaves 8 cases involving grizzly bears in the course of nearly forty years.⁹⁷ Although the risks are higher in National Parks, the mean number of visitors was over 2 million per injury in the Waterton Lakes National Park (Herrero and Fleck 1990:27): there was one mauling in the 1980s by a grizzly bear and one child was killed by a black bear in 1977.

As for bear hazard in the vicinity outside the Waterton Lakes National Park, there was one instance of injuries inflicted by a black bear during the 1980s, and one death by a grizzly bear at a campsite north of the Park in 1998. There were instances of 'attacks' that made front-page news in local newspapers, but many community members remarked afterwards, in private, that these attacks invariably targeted hunters⁹⁸ and culminated with the wounding or death of the attacking bear; it was a peculiar coincidence, given that most people who circulate daily in these landscapes do not carry guns, yet they have somehow been spared attacks. This said, grizzly bears have reportedly charged people in 29 instances over thirteen years according to the above survey (Urmson and Morehouse 2012a:4). Then again, bluff charges are often induced by human behavior and these false

⁹⁶ See the Alberta government statistics at <http://srd.alberta.ca/FishWildlife/WildlifeManagement/BearManagement/BlackBears.aspx> accessed Feb 1st 2013.

⁹⁷ Contrariwise in British Columbia: although black bears were 12 times more numerous, grizzly bears inflicted 42 serious injuries or fatalities for 19 attributed to black bears between 1960 and 1997, more than twice the number, and eight of these were fatalities, the same as for black bears, with most incidents occurring outside National Parks (Herrero and Higgins 1999:213).

⁹⁸ Hunters make themselves inconspicuous on the landscape, and it is hypothesized that they are more likely to surprise a bear and cause it to charge.

charges are intended to drive people away, especially from a source of bear food (Hastings, et al. 1986; Herrero 1983; Herrero 1985). All told, bears are intimidating and they have done property damage, but they have not proved particularly dangerous in Parks, on Public Lands, or on ranches. And in fairness to bears, human behavior is also implicated. Unlike the negative effects of a regime of fear, the effects of practices that attract bears have received considerable attention.

To put risk in perspective in terms of body count, the alleged ill-tempered nature of grizzly bears pales in comparison with the wrath of domestic bovines. In the Alps and in England for instance, the body count imputed to cows and bulls is much higher than the number of victims to grizzly bears in North America. On British farms alone, rogue cattle have killed 74 people in the last 15 years, a significant number of occurrences befalling people hiking on public footpaths winding through farmland, while grizzly bears inflicted 21 fatalities in the North American wilderness during the same period of time.⁹⁹

The risks of attractants

Researchers have recommended “spatial separation” as a solution to conflicts between wild carnivores and people worldwide (Treves and Karanth 2003). Given that humans cause most grizzly bear mortalities, separation could well be in the best interest of the bears as

⁹⁹ About casualties in the UK and Switzerland: <http://www.independent.co.uk/news/uk/home-news/cows-officially-the-most-deadly-large-animals-in-britain-a6727266.html> Also: <http://geog.ucsb.edu/events/departments-news-word/1195/forget-sharks-cows-are-more-likely-to-kill-you/>. Also: <https://www.rt.com/uk/321389-farmers-walkers-killer-cows/>. <http://www.newlyswissed.com/fiona-the-savage-cow/>. In North America: https://en.wikipedia.org/wiki/List_of_fatal_bear_attacks_in_North_America; accessed July 24th 2016.

well. Ranches, however, attract bears with ready sources of food at the most opportune times when natural sources of food are not plentiful, at the end of hibernation in March, and in late fall when bears aim to fatten up for hibernation. These correspond with the early calving season when young calves are vulnerable to predation by bears (Wilson, et al. 2005), and in late fall when the granaries are full. The principal attractants have been livestock carcasses found on the range or in the ranches' 'bone-yards'.

Definitions of valuable bear habitat and definitions of conflict vary amongst scientists. To make risk assessments, the categories of occurrences (sightings, incidents, and conflicts) were conflated and conflict was defined as any "activity that *could lead* to damage or harm to people, pets, or property, or that involved unnatural attractants or food sources", including when "a bear was travelling close to dwellings, as this ultimately *could lead* to a bear-human conflict" (Northrup 2010:70-1 italics mine ; Northrup and Boyce 2010; Wilson, et al. 2005).

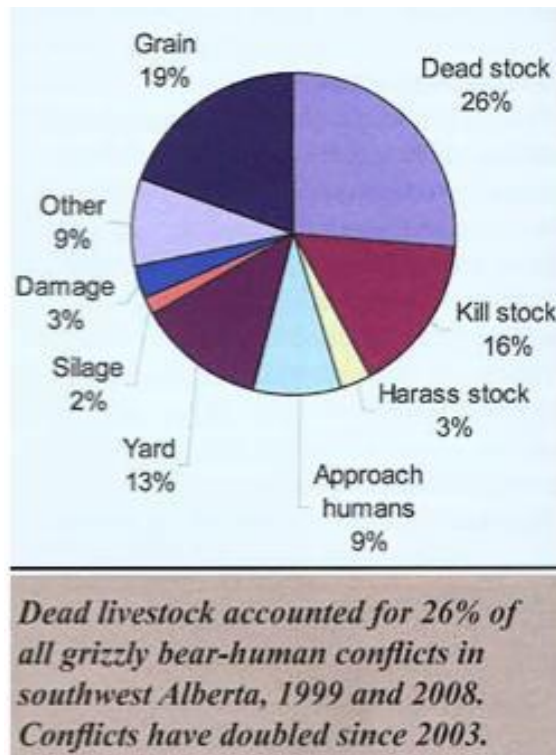


Figure 5.5 A graph depicting the incidence of conflicts with bears (Northrup 2010:89).

Biologists conducted a local study to find out about the whereabouts of bears in order to assess risks. They captured and fitted twelve grizzly bears with radio-collars in 2004 and tracked them until 2008 (Northrup 2010:72). An unexpected land-use pattern emerged: bears sought secluded areas in the high country to bed down during the day and moved down to ranches after dark. Bears were shifting from good quality and safe habitat in high country towards an 'ecological trap', which, in scientific terminology, is substandard habitat that is falsely attractive and threatens a wildlife population with extinction (Dwernychuk and Boag 1972). The cause of this was anthropogenic attractants, carcasses in bone-yards in particular. Although conflicts by way of sightings were still relatively rare since the activities were mostly nocturnal, the researchers estimated that the risks of

conflict were nevertheless high and it was a pressing concern to remove these attractants from ranches (Northrup 2010:78-9; Northrup, et al. 2012). Once bears become habituated to non-natural foods, the axioms goes, they inexorably lose respect for humans and are destined to cause more serious conflicts thereafter (Herrero and Fleck 1990). The graph above shows the distribution of instances of conflicts by categories (Northrup 2010:89; Northrup and Boyce 2010:10).

Researchers also concluded that the government policies had exacerbated the problem after the BSE (bovine spongiform encephalopathy) or Mad Cow disease crisis in 2003 (Northrup and Boyce 2010; Northrup and Boyce 2012). Recent laws have determined that all livestock that died on ranches are 'toxic waste' and imposed regulations that made shipping and processing a complex and onerous procedure (see Morehouse and Boyce 2009). Before the crisis, carcasses were picked up for free but their removal from ranches virtually stopped afterwards. Predictably, scavengers of all kinds, bears, wolves, coyotes, cougars, eagles, ravens, converged on bone-yards.

Counter-narratives about risky bears

Perceptions of large predators vary considerably. The above studies of conflict concentrate on negative perceptions and take reports of conflict to be an accurate reflection of interspecies relations. During my fieldwork, I have concentrated instead on the interface between perceptions, with an aim to elucidate alternative approaches to coexistence. People with a positive perception did not want to draw negative attention to bears and never reported sightings. They seldom saw grizzly bears to begin with and yet bears were

an intrinsic part of their quality of life: they got along well with the bears whose home range extended over their ranch and they objected to their persecution.

People with positive perceptions also emphasized the idiosyncrasies of animals. Species were not made up of generic animals with wired-in behaviors. Many recognized regulars with whom it was possible to achieve mutual respect: why get rid of those 'good bears' that ostensibly keep away troublemakers? Granted that animals come and go: there is constant flux and negotiating relationships is an ongoing process. Animals nevertheless have personal histories and the trend of current incidents also revealed a history of ranching practices.

The raiding of granaries is a case in point. Bears caused a lot of grief in the past when the density of residences was much higher and homesteaders raised pigs, sheep and chickens.¹⁰⁰ Conflicts abated after homesteads were amalgamated into ranches and thirty years ago there were no reports of incidents involving granaries. As older ranchers pointed out, the current raiding was actually a resurgent phenomenon which started again in the 1990s when a few bears started frequenting some old wooden granaries that leaked grain. The behavior spread from there; bears began tearing granaries apart and before

¹⁰⁰ The history of attractants is an old one. Homesteads were a hub of bear activity compared to today's cattle ranches. One of the key ranches on the Project is a good example. Before becoming a cattle ranch, the homestead waged warfare for decades against bears until the owner stopped raising pigs. Another homestead raised mink, pigs and sheep, and collected vast amounts of meat scraps to feed the mink. Bears eventually converged there: it was a war of attrition on both sides and the bears won in the end, eating virtually everything except the mink and the homesteader. Similar practices continue to this day on a few ranches – enough to give the bears a bad reputation. Grain sweetened with molasses is fed to cattle on some of those ranches. Although bears feeding at the troughs do not even attempt to harm the calves, they still get labelled as free-loaders. Other ranchers who complain that bears haunt their yards at night do not confess to leaving carcasses in or near the corrals a long time before disposing of them. Nevertheless, the rate of incidents has declined overall although some ranches still invite them.

long they were prying doors off steel granaries. Some ranchers now resort to heavy-duty railroad cars to store grain. This is local landscape history but it is noteworthy that the phenomenon had emerged independently in some places and was unheard of in others despite similar circumstances.

The history of scavenging is another case in point. It differs from the granary problem to the extent that scavenging carcasses does not necessarily stem from a direct loss. The inference, however, is that predators kill livestock once they develop a taste for beef. Some ranchers disagree with that and do not want to be troubled with removing dead stock. A few even advise against removing carcasses altogether. Their rationale is that bears are more likely to resort to killing young calves when they are short on scavenge especially during late spring snows.¹⁰¹ One option, then, is to avoid calving at that time. Also, in their experience, bears do not systematically shift from dead livestock to live ones. In a study of cattle and grizzly bear interactions, scientist estimated that the incidence of depredations was very low to begin with and that those bears that scavenged on cattle dead from causes other than predation did not develop a propensity to predate on cattle afterwards, whereas a few individuals became habitual killers regardless (Anderson and Ternent 2002).

¹⁰¹ Since the late 1990s, the Fish and Wildlife Division has started a 'bear intercept program' using helicopters to distribute road-kill carcasses of deer in the higher country during spring in order to keep bears away from ranches during early spring (Alberta Grizzly Bear Recovery Plan 2008; Bergman 2003). This has been successful to some extent. Another program has subsidized the removal of cow carcasses from ranches. There was a record number of dead stock removed from ranches in the spring of 2013, over forty on the Cardston side of the River, and about the same number on the Twin Butte side. Snowstorms came in rapid succession during April and there were a record number of calves killed by bears near the mountains. This is perhaps a spurious correlation, but some ranchers speculate that the removal of a large number of carcasses has exacerbated the problem.

The aforementioned ranchers do not deny that predation happens, of course, but in their view, the scale of the problem depends on particular circumstances. They argue that cowherds have social histories too. Local herds, for instance, become 'wise' about bears and can detect suspicious behavior. A herd may ignore a bear ambling nearby one day and rush to mob him on another day. Then again, some bears are opportunistic and they sometimes ambush 'naïve' younger livestock especially if they are unfamiliar with the landscape. The risk of predation is not the same for every class of livestock either. Groups of yearling cattle, for instance, have no herd cohesion, yet they are often trucked from the prairies, dropped off on a foothills pasture and left to fend for themselves, unaware of what they may encounter – predators or poisonous plants. All told, the risks of losses are to a large extent a function of management.

Another inference is that the risks to human safety escalate once bears begin to circulate on ranches. The problem of habituation to anthropogenic foods therefore translates into a problem of familiarity with human presence *tout court*. This said, these risks are inherent when cohabiting on the same landscape whereas it is precisely the hope of the National Park, the Waterton Biosphere Reserve and the NCC administrations that landscape residents will share their landscape, especially with grizzly bears. Again, perceptions and levels of tolerance vary considerably.

As ranches and grain farms became increasingly attractive, bears have migrated further away from their mountain refuge and ventured eastward where they had never been seen before, at least in recent memory. The maps of problematic occurrences show a high concentration in places where bears were an unfamiliar sight until recently (Urmson and Morehouse 2012a:6-9). Ranchers nearer the mountains reported that grizzly bears

have circulated on ranches for a long time. But it is too simple to attribute the difference in levels of tolerance to a lack of familiarity. Tension has also mounted in areas nearer the mountains where some people object to the increased boldness of bears. Unlike those who held the above counter-narratives, ranchers with a negative perception of bears have expressed concern that bears had quickly responded to a change in status and were taking liberties with their new privileges.

Getting the Real Story

During a visit with Dick, a member of the local Butcher Creek Grazing Coop and community leader, the discussion covered a broad range of topics about the ranch economy and the involvement of the NCC. I was about to leave, quite satisfied that we had covered the key points, when he remarked that we had not touched on the most critical issue for local ranchers these days. “This cannot go on, you know, with all these bears coming around”, he said, “they are coming right to the house!” I had not known Dick to exaggerate just for effect and he was clearly distraught. He came from an old ranching family and had spent a lifetime at the foot of the mountains. Dick’s urgency was disturbing: were bears truly more numerous? Were they changing behavior and becoming bolder? Or were people changing attitude? As this chapter attests, I began focusing on another facet of local conservation.

I was well aware that some local ranchers held extreme views and shot coyotes, black bears, cougars and wolves at every opportunity. They resented the presence of any wildlife on their ranch and their personal agenda was to cleanse the landscape as of old and extract some compensation, for pelts or bounty. They were especially appalled that the grizzly hunt had been closed. What was not so clear, however, was the prevalence of that

faction. In the view of its proponents, if conservation was left to scientists and policy-makers it would morph into an endorsement of transgressions and wild animals would get to rule the landscape. Unlike the above bear sympathizers, bear detractors take every measure possible to further their cause in the public eye. I entered the Twin Butte store one day to pick up my mail when a poster in the window drew my attention (see figure below). It was an advertisement for grizzly bear sightseeing tour. The language of the invitation was striking: "Come View South Western Alberta's Grizzly Bears in their natural Ranch Land habitat". "Come and Learn the Real Story", it advertized. The juxtaposition of nature and ranch habitat was especially remarkable, given whose business it was.

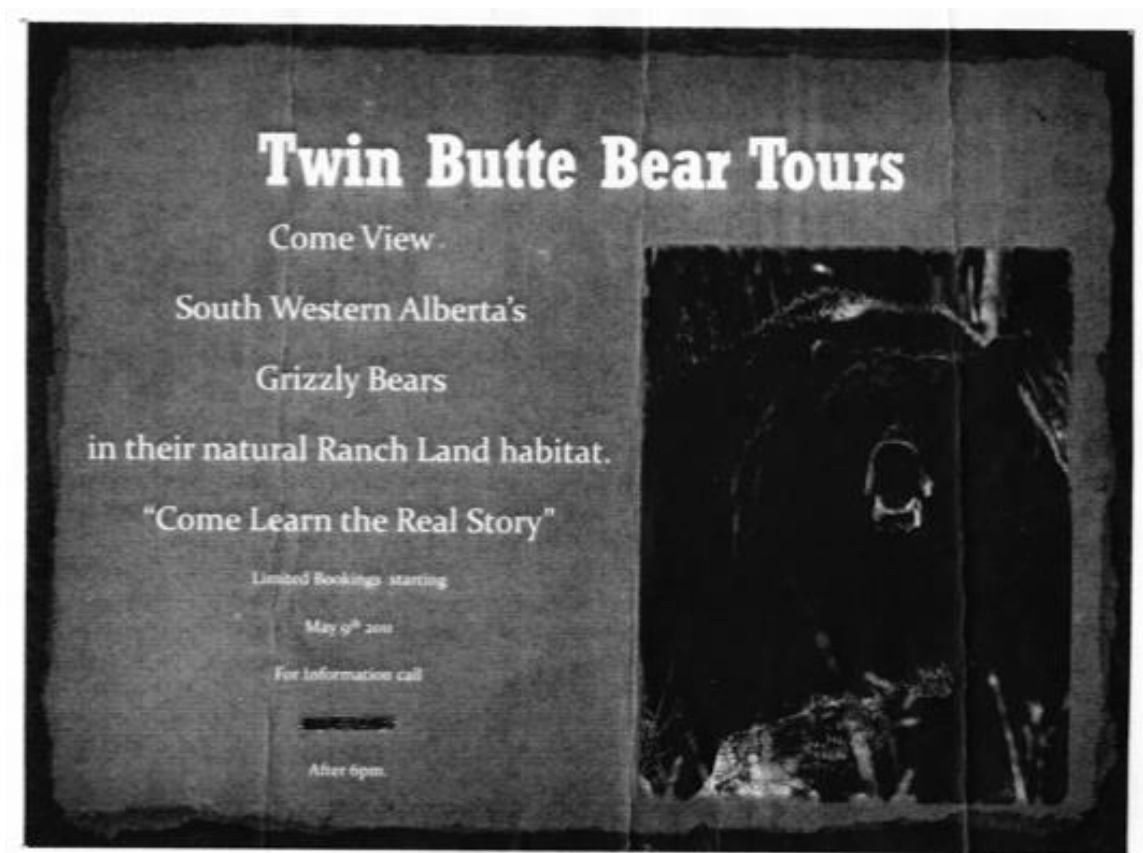


Figure 5.6 Copy of a poster at the Twin Butte General store advertising bear viewing tours

I drove to the village in the National Park soon after to visit a seasonal resident there, retired anthropologist and member of the NCC scientific committee. I handed him a copy of the poster. He soon realized who the entrepreneur was and he also realized the implications. If the entrepreneur was charging a fee for bear sighting, his only chance of success was to bait them, and baiting bears is not legal. The outfitter baited coyotes and wolves at his bone-yard to shoot them, which is legal. But he used it also to attract bears. And there was no ambiguity about the Real Story he was promoting either, although he had sold conservation easements to the NCC and leased some of its land – he even extracted from the NCC a permission to kill wolves there. To cap it all off, the NCC had declared him a ‘champion of conservation’.

During our conversation, as in many others I had with NCC officials, I tried to fathom how the NCC aimed to reconcile their discourse with practices on the ground. The NCC championed large predators as keystone, umbrella, indicator species, and so forth. That much was clear. It was nevertheless peculiar that easements and leaseback contracts were devoid of any terms or conditions pertaining to wildlife other than allowing hunting. Boneyards were still in use on NCC ranches – a hunter shot a grizzly female (thus orphaning cubs), ostensibly in self-defence, at one such boneyard near the Waterton River in 2012.

Throughout my inquiries, the theme was the same for wildlife issues as for rangelands issues. The NCC was a silent partner and issues were dealt with privately. People directly involved in the Project who had divergent views did not get to air them out in a forum. Harmony in public relation matters was paramount. Such was also the NCC’s intent when it organized annual ‘Meet and Greet’ events and invited guest speakers to talk

about conservation subjects, twice under the headline ‘Living with Predators’. These were tame affairs unlike other community meetings organized by local committees like the local Carnivore Working Group and the Drywood Yarrow Conservation Partnership.

A predator tribune

The following is a summary of such a meeting at the Twin Butte Community Hall. It leaves aside the wolf issues that were presented (see Chapter 6) and focuses instead on the issue of grizzly bears. The meeting illustrates the volatile intersection between the views of scientists, Park wardens and local people on the ground of environmental governance. The meeting was staged for a panel of experts to speak about interactions between wildlife and people. The evening’s proceedings echo many other public events like it.

The master of ceremony set the tone by saying that the main drive behind local organizations like the Drywood Yarrow Conservation Partnership (named after two local creeks) was community-based conservation. A delegation of local ranchers and scientists had just returned from a visit to a Montana community of ranchers that has spearheaded the ‘Blackfoot Challenge’.¹⁰² The community there was dealing successfully with its grizzly bear and wolf problems – more on that later. Evidently, the predicament was similar on both sides of the border and the speaker suggested that the solutions implemented in Montana could be emulated in Alberta.

¹⁰² <http://blackfootchallenge.org/Articles/> accessed Jan 23rd 2013.

The sequence of presentations began with the wildlife biologist for the Fish and Wildlife Division in Pincher Creek:

It's all about values, and we value big open spaces, just look out the windows of this hall at this beautiful landscape. And it's also all about bears and wolves, big predators that share this landscape with rural communities. They claim this landscape as much as we do. And there must be a common grammar between you as a community and this panel of scientists and experts to try to resolve our common issues.

The government wildlife biologist went on to enumerate scientific findings: that grizzly hair samples from special barbwire traps had been identified by DNA tracking and showed that there was about fifty grizzly bears in the general area (see also Alberta Grizzly Bear Inventory Team 2007); as for wolves, there were also about fifty of them distributed amongst seven packs along the eastern slopes of the Foothills. Conflicts were inevitable but mitigation measures had worked elsewhere by removing attractants like bone yards and substandard granaries. Locally, bears had opened up steel granaries like "sardines cans", he said, but these granaries could be reinforced and yards could be surrounded with electric fences. These measures were also subsidized by the conservation organizations, including the NCC. Furthermore, the Montana experience had demonstrated that electrified fences around the perimeter of calving fields and the presence of "range riders" had nearly eliminated the incidence of predation by wolves. All told, it was a community effort that made co-existence with problematic wildlife possible, and since there was

tremendous knowledge acquired over generations of ranchers in the community and given much good will, there should be ways to get along.

The next speaker was a local conservation officer. He estimated that over the years most of the predator issues in the district had been related to bears. There had been no issue with wolves on this side of the Waterton river (across from the Mormon community of Mountain View) until the last six to seven years. Since then there had been only one confirmed livestock loss in 2008, none in 2007, and two in 2006 (this was 2008). During his tenure as conservation officer, the trend of grizzly bear problems had been steady over the last thirty years and for the most part involved mischief by sub-adult bears that had just been “kicked out by their mom”. There had been 5 grizzly bear “actions” in 2008 (‘actions’ involved ‘aversive training’ with the use of noise deterrents like ‘bear bangers’ and physical deterrents like rubber bullets), and three bears were relocated; the rate of interventions varied from one to five yearly, and seven on a bad year. Most conflicts occurred on small acreage properties (also called ‘ranchettes’) rather than on ranches, and their owners were much more difficult to deal with than ranchers. Electric fencers were given out to protect grain bins, or else reinforced doors for grain bins were manufactured by machinists paid by the government. Regardless, large bears sometimes banged on the walls of steel bins until grain sifted out.

Next, Robb Watt, warden for the Waterton Lakes National Park (WLNP) presented a summary of the Park’s bear history. In the midst of chronic problems, the learning curve had been flat for decades, he said, until it picked up over the last 30 years. The real challenge has been to change people and their attitudes. Bears are not hard to live with in

most cases, unlike people who caused problems. Park bears have often been destroyed in the past, and until 30 years ago about thirty were trapped and relocated every year. With a change of human behavior and an improvement in the Park's management of attractants, incidents were nearly a thing of the past. The Park people hoped that the same could be achieved outside its boundaries, since it is a relatively small Park. Bears travelled across international and provincial boundaries and crossed from public to private lands. The Park holds only about 15% of the area's total grizzly bear habitat.

The next speaker presented a study of the expansion of the road network in the high country. Its cumulative effects magnified the loss of bear habitat and the incidence of bear deaths had risen, especially near roads. Between the disturbance caused by vehicle traffic and the influx of wilderness users, bears were displaced from their regular habitat towards ranch country. The speaker had also done the study on the problem of attractants but he did not broach the subject.

After the presentation, several ranchers asked to be informed about the specific whereabouts of collared bears. The government biologist stated that such information could not be made public but agreed that the information would be made available privately. He did bring up the subject of carcass removal and mentioned that a subsidy program was in place to provide communal bins locally for ranchers to drop-off their carcasses.

The local verdict

Two other presenters spoke about wolves – I will return to that later. But the main subject of contention that night was grizzly bears and the audience wasted no time to get that message across. The master of ceremony put it to the audience for questions and commentary. One irate listener immediately stood up and erupted:

I'm sick of this crap, sick of coming to these meetings and get fed all this bullshit! These studies are all horseshit! There are more bears out there than what researchers say. They don't go in places that have problems and somebody will die soon!

The commotion was a bit out of line even by Twin Butte standards. But calm was restored once it was established that the intervener was from 'across the river' in Cardston County. It was understood in Twin Butte that conflicts with bears and wolves in Mountain View were blown out of proportion, which was, of course, a relative measure. A roll call was immediately requested to identify who was local rancher, who was from a conservation organization, government agency, and so on.

Next, a regular local spokesman (the bear tour outfitter with the Real Story) read a prepared speech:

We need more community discussion like this and I want to call attention to the mismanagement of grizzly bears. Grizzly bears and ranchers have lived here for over 100 years, so that means something is working! The loss of ranches also means the loss of bears. We know better we who live here than anyone else. Bears grow

really big here, and we have more density of bears than anywhere else in North America except in some places in Alaska and BC near salmon streams.

He went one to point out that by the biologists' own admission, a grizzly bear hunting season was the best method for managing bears. Hence, the limited spring hunt of two bears per year was a good program, he argued, and it was a shame that it was cancelled for conservation reasons. Hunters and hunting guides did the community a great service. Large 'boars' (male bears) must be controlled:

Big boars push sows away and eat cubs sending them off somewhere else [sic]. And the wrong bears are now where there used to be less dangerous bears. With transient bears coming from BC and Montana, there is a greater number of boars now. These bears are killing chickens in front of children. One rancher who was trying to feed his cows at night met a bear and barely escaped over the corral fence. Sheer luck and an experienced man is the only thing that prevented a death. Since this would have happened to a landowner on his own property this would only result in a major lawsuit against the provincial government, giving us all a black eye. Grizzly bear management during the recent years has been run by Disneyland emotions and environmentalist agenda that run animal politics against the interests of people who live on the landscape. We need instead a genetically strong bear population. Instead, the population of bears is going out of control growing so much just to satisfy city people and make the bear numbers go up.

Bears are studied to death. Collars damage animals like bears. Landlords of this landscape provide habitat, feed, protein, and live with these bears and have

more at stake than anyone in Calgary. Shoot, shovel, and shut up is what is going to happen. Good bears must be kept not bad ones. Let's put personal agenda aside here and do the right thing.

There was general applause. Another member of the audience, a new rancher to the area and retired professional hockey player, stood up and made a tribute the greatness of ranching: "The future of this beautiful landscape depends on ranchers", he declaimed, "and to defend it, it is inevitable that shoot, shovel and shut up will get bigger". More applause.

A divided landscape constituency

Apparently, the main contention was that grizzly bears were too numerous and represented an unacceptable danger. The antagonistic discourse had become the norm at community meetings over decades, although that was more a reflection of who went to these meetings, who got to speak for the community; in other words, it boiled down to who dared to speak in its name and who got away with it, which is a function of moral authority and social capital, whether it is acquired through affiliation with an established family, or through bullying – or hockey fame. The Park warden, for his part, expressed the view of the Park and also the Biosphere Reserve and the NCC that ranches constituted important bear habitat: the Park made up a small fraction of actual habitat which effectively overlapped Public Lands and ranches. It was therefore vital for grizzly bears, a threatened species, to share landscapes with cattle and ranchers. The map of the Waterton Biosphere Reserve below (Lee 2011:15) shows the Park in dark green as the core of the Reserve, and

the buffer zone which is made up of Public Lands in light green and then the largest area, which also contains the Project, is mostly made up of private ranches.

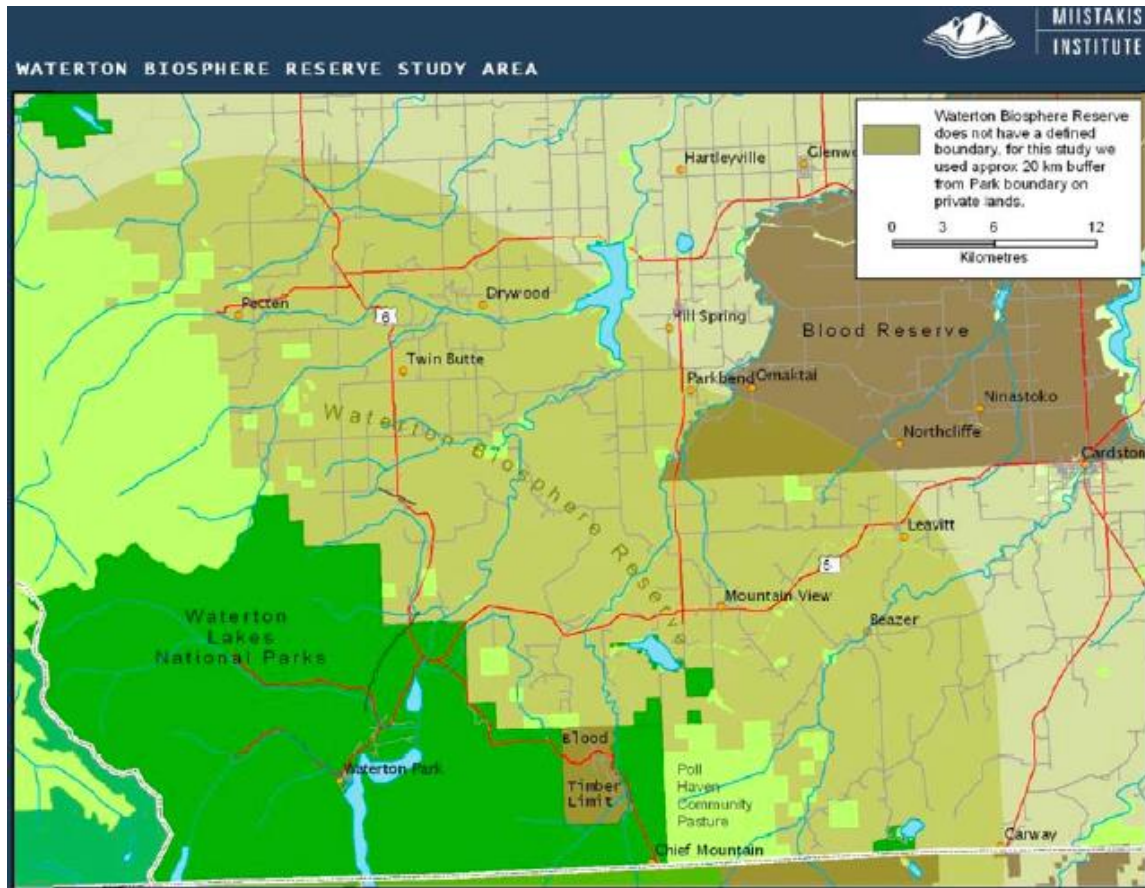


Figure 5.7 Map of the Waterton Biosphere Reserve, National Park, and Public Lands (in light green) in (Lee 2011:15)

As I have explained earlier, some researchers also judged that ranches were dangerous 'non-critical' habitat and bears have infiltrated these falsely attractive 'ecological traps'. These landscapes were inappropriate because (a) they were strewn with anthropogenic attractants and therefore unnatural, and (b) they were intrinsically insecure for bears.

Ranch habitat that is both healthy and secure for bears was altogether implausible and it was imperative to eliminate whatever attracted bears so they would stay put in desirable habitat at a safe distance from humans.

Security was also a priority for the community speakers who disagreed with current scientific estimates of population size. Instead, bears had become too numerous and should be hunted. The ecological value of a trophy grizzly hunt will be discussed later along with alternate models of interspecies relations that reduce the incidence of conflicts.

The master of ceremonies mentioned the Blackfoot Challenge as an exemplar. This community-based initiative unfolded in an identical environment across the border in Montana; the community there realized fully that it shared valuable habitat with wildlife including grizzly bears and wolves, and thereby reduced the incidence of conflicts especially with grizzly bears by 96% in less than a decade, without hunting and without aversive training (see Chapter 7).

Noteworthy also is the discourse of the government biologist for the Fish and Wildlife Division with respect to claims about large predators and sharing landscape with them, and the common grammar between landscape actors. The discursive use of the trope 'common grammar' was rather felicitous here, given that terms and phrases like 'community values', 'community discussion', 'sharing landscape' and 'personal agenda' are carefully tailored to get the message across to various memberships within the audience about the proper hierarchy of things. Thus, also, is political ascendancy asserted according to status in the community, all of which ties in with the currency of ecological/moral inclinations. The implications of this layout of *place-making* will become more obvious in

later chapters elucidating the additional involvement of bureaucrats and scientists in networks, alliances and political alignments in the conduct of landscape.

Chapter 6 The Wolves are back!



Figure 6.1 Statue of George Lane at the Bar U Ranch National Historic Site.¹⁰³

¹⁰³ I took the above photo at the Bar U Ranch National Historical Site. It depicts a famous incident in the late 1800s. The scene, taken from a canvas by Montana painter Charlie Russell, shows George Lane getting attacked by a wolf after he had charged a pack of wolves feasting on a cow they had killed. George Lane was a co-owner of the Bar U, one of the largest foothills ranches, near the area where I conducted my case studies.

Wolves receded as a thing of the past on foothills ranches during the 1900s. They had learned to stay put in the mountains and towards the northern parts of the province, it was thought, and other than a few complaints, they did not cause much grief during the 1980s (Alberta Forestry Lands and Wildlife 1991; Bergman and Mack 2004). Seeing the tracks of an errant wolf was an extraordinary event. But when wolves were detected again in the 1990s, they seemed to be no longer transient. The Waterton Biosphere Reserve quietly celebrated (Dolan and Frith 2003). Shortly thereafter, the pack that was attempting to get established on cattle summer range near the Park was promptly eliminated. Nobody else paid much notice. That is until the beginning of the new millennium when wolves, seemingly overnight, made a systematic recovery and several packs laid claim over the entire foothills once again.

In sharp contrast with the local public meetings in 2008, a confidential survey of local attitudes towards large predators done in 2009 revealed that people overwhelmingly agreed that it was possible to share a landscape with large predators (Quinn and Alexander 2011). Most people considered that wolves posed less threat than grizzly bears in regard to personal safety, but that they were a greater danger to livestock.

This goes against the general trend throughout the Mountain West in the U.S. where controversy about wolves has flared again with the reintroduction of wolves in Yellowstone Park. There is a lot of speculation that unless wolves are systematically hunted, their instincts to kill humans reawakens. Also, the diseases they carry are readily transmissible to humans, some scientists declared, and circulating on landscapes inhabited

by wolves will no longer be safe for that reason alone. The enemies of wolves drum up support for their claims that wolves are incorrigible killers and deplete wild game populations to the point of no return unless they are drastically controlled. The spectre of human-killer wolves is their latest wild card. Another movement champions wolves, which has garnered even more support. Both sides claim that science is on their side.

The ban on mass destruction

There is a long history of antagonism towards wolves in North America. They were nearly exterminated from the U.S., excepting Alaska, and from most of southern Canada by the 1950s. Strychnine poison was the most effective method for mass destruction. Wolves had been intensively hunted and trapped in Alberta in the late 1800s but again it was strychnine that was instrumental in exterminating wolves from southern areas during systematic campaigns in Alberta in 1922 and 1943 (Alberta Forestry Lands and Wildlife 1991:5).

The widespread use of poisoned bait inflicted untold collateral damage to other species (Lopez 1978; Mech and Boitani 2010) and poison is now under strict control, although it remains available to private landowners for getting rid of animal pests (see Alberta Agriculture and Rural Development 2010; Alberta Government 2008; Bergman and Mack 2004). Furthermore, those who advocate another round of cleansing have to contend with the public at large, given that wolves in the foothills inhabit mostly Public Lands and an all-out campaign of annihilation would not go unnoticed. And this time around, the persecution of wolves has gone out of favor. “Now the tables have turned,” writes David

Mech, a well-known American wolf biologist, “The Satan wolf has become a saint in the minds of most of the general public” (Mech 2012:143). The fate of wolves lies in the public sphere, and recent outcries against about the severe reduction of wolf packs that ostensibly threaten woodlands caribou in the northern part of the province indicate that eliminating wolves from the southern foothills is no longer an option.¹⁰⁴

Besides, Parks Canada has policies of its own under federal jurisdiction. The National Parks along the mountains are islands of protection for any wild animal. In the past wolves were persecuted in Waterton Lakes National Park but now that they have found permanent refuge there; the prospects for wolf control have completely changed for the surrounding areas, regardless of the policies on Alberta’s Public Lands.

The anti-wolf and pro-wolf camps

About the polarization of perceptions in respect to wolves, researchers have found patterns pertaining to residence (rural versus urban), level of education, age, and vocations (hunter, rancher, outdoor enthusiast, etc.) (Naughton-Treves, et al. 2003; Williams, et al. 2002).

Stereotypes emerge, for instance between an older male rancher, not highly educated, who is most likely to be anti-wolf, and a young urban professional woman, highly educated and outdoor enthusiast, who is most likely to be pro-wolf. The physical distance that separates people from wolves is also a key factor (Karlsson and Sjöström 2007): the further away

¹⁰⁴ See: <http://www.canada.com/topics/news/national/story.html?id=f806c904-1399-4204-98f0-306d26c001e5> ; also: <http://cpaws.org/news/guns-and-poison-albertas-approach-to-little-smoky-caribou-management> accessed August 20th 2013.

from wolves people's everyday life is, the more likely they are to be sympathetic; conversely, people who live in their vicinity are most likely dislike them. As the above survey suggests, however, that this kind of profiling glosses over a lot of ambivalence vis-à-vis large predators even amongst ranchers (see also Quinn and Alexander 2011).

Scientists are not impartial bystanders in all this and the involvement of science in conservation is not without ambiguity. "Subtle biases could creep into their science, for example, simply by the choice of study they do", deplores David Mech (2012:147). Along these lines, I investigate in this chapter how science feeds the debate on both sides of the divide.

Given that cleansing the entire region of wolves is out of the question, ranchers have four options to choose from: (1) Non-selective lethal control with conventional methods (trapping, poisoning or hunting). The objective is to eliminate wolves from a specific area. (2) Selective lethal intervention to remove specific culprits only. The notion of rehabilitation through selective culling is more attractive to conservationists and a few ranchers were willing to experiment with it. (3) Non-lethal intervention involving herd surveillance, lending itself to an open range situation. This novel alternative has been tested to evaluate if it detracts wolves from preying on livestock. (4) No intervention at all. A lot of ranchers were a lot more pragmatic about large predators than their profiling suggests. Wolves could come and go: like the taxman, they took a toll that was tolerable so long as everybody got taxed. It was therefore only fair that those directly affected received some compensation for their losses.

The law of the land

In June 2008, a special meeting was called at the community hall in Mountain View, a small hamlet near the eastern edge of the National Park on the Cardston County side of the Project area. Nearly one hundred people crowded the room, high attendance given the small local population. Rick West, a local rancher (from the settler family that had been in the area the longest), was master of ceremonies. He courteously introduced a group of six officials, mostly staff from the nearby National Park and two from the Alberta Fish and Wildlife Division. First, the Park officials made a presentation about current research on predators and the population status of bears, wolves, and cougars. The Fish and Wildlife conservation officers also explained the programs for the compensation for livestock losses to predators. Like in Twin Butte, this kind of information was common fare for these ranchers and they wanted more than a repetition of legal mandates and scientific findings about the scarcity of large predators, which, in the case of grizzly bears, was dismissed with guffaws.

The atmosphere was tense from the start and as soon as the presentations ended it broke into a storm. Before long the force of the general recriminations backed the six officials against the wall of the hall. At least eighty-three head of livestock had been killed, members of the audience decried. Usually, grizzly bears were to blame, but his time wolves were the principal culprits, and coyotes, grizzly bears and cougars were also implicated. The Park harbored dangerous animals, every intervener reiterated. It was not evident what offense the officials had really committed but the audience seemed to expect a confession. The officials countered that these predators had not been introduced and that

as far as the grizzly bears were concerned law mandated coexistence. “Law?” the spokesman exclaimed. If the government did not listen up he warned, and if local did not get some satisfaction quickly, people were going to take law in their own hands. The “law of the land,” the spokesman warned, has more traction in these parts than the law of the state (see also Niemeyer 2007).

Formal law is not kind to wolves to begin with. Landowners in Alberta and anybody with their permission can shoot wolves at any time, without a license and with no restrictions (Alberta Forestry Lands and Wildlife 1991:47). Granted, neither are ranchers subject to hunting regulations on their own land for controlling pests, be it wolves, coyotes, black bears or cougars. But the ranchers wanted extra help. The Cardston County Council had already stepped in with offers to pay \$500 bounty for every wolf killed, up to a maximum of \$5,000 per year for all wolves killed in the county. The use of strychnine was prohibited but another poison (sodium fluoroacetate also known as Compound 1080) was available at some municipal district offices (Alberta Forestry Lands and Wildlife 1991).¹⁰⁵ The ranchers resented the limitations put on the use of poison and wanted the restrictions on trapping removed.

The spokesman proposed measures to deal with rising losses of livestock: first, ranchers should not have to provide fresh evidence for every kill in order to be

¹⁰⁵ The 1991 Alberta wolf management plan recommended continuing using of strychnine as a cheap and effective method to reduce livestock. And the practice is ongoing. One rancher related to me that at a meeting of his rancher cooperative that sells beef under the label of *Natural Beef*, one presenter made a demonstration for preparing and setting poison baits to kill wolves. Another rancher called a wolf biologist about methods to avoid wolf predation, mentioning in the course of the conversation that the local conservation officer had directed him to a municipal office where he could get poison over the counter.

compensated; second, regardless of evidence of depredations, an insurance scheme should cover losses in excess of 2%, which in the past was considered a normal loss when cattle came back from summer pasture. Insurance payouts would also reflect the value of the animals when they are sold in the fall rather than their value at the time they are killed. The scheme would be paid with taxpayers' money, of course, and the rationale was simple: the National Park next door harbored problem animals merely to entertain the public, and ranchers wanted compensation for the damage they caused.¹⁰⁶

Shortly after the meeting I went to chat with Rick West, the community-meeting spokesman. I was curious about the currency of the "law of the land". Rick held a very different discourse in the privacy of his home. He considers himself one of the few conservationists south of the Waterton River. He enjoyed the occasional sight of a grizzly and remembered fondly the awe on his grandson's face upon hearing wolves howling for the first time. Rick just wanted the wolves to howl from the Park, not on his place. And he made sure that his grandson would learn to kill them too. Ranchers enjoyed living in this "God blessed part of the country," he said, and they wanted it conserved, as long as wildlife respected boundaries. Rick has sold an easement to the NCC and like many others who had signed on also, they were no blind fools for the love of wildlife, especially wolves.

Wolves kill in a particularly repulsive way, another rancher explained. He had recently gone out at night to inquire about a loud commotion and heard the death throes of

¹⁰⁶ Also, the Park had recently spent \$250,000 to build tunnels under the main road in the Park to provide safe passage for migrating long-toed salamanders. The assembly was outraged that 'newts' came ahead of cattle in the institutional hierarchy of animal importance.

a cow getting eviscerated by wolves. It was not only an economic loss to him, he insisted, but also the loss of an animal he cared for and a loss of face. As Rick also said, he was “put on earth” to look after his animals and it was his duty to protect them. Letting wolves kill with impunity meant that he was not doing his job. It was God’s will and the law of the land that gave him full sanction to take the law in his own hands (see also Niemeyer 2007:292).

From venison to beef

Ranchers were concerned that wolves are by nature incapable of controlling their urge to kill far beyond their immediate needs. More important, what was happening across the border seemed to confirm that they reproduced infinitely. The wolf population in the Greater Yellowstone Area had expanded quickly after they were reintroduced, growing from 31 to 216 individuals in a matter of seven years when it occupied “virtually all potential wolf habitat” in the Park (Smith, et al. 2003:334). What escaped the attention of ranchers was that the population had stabilized since (ibid). Finally, the prospects were not good for local ranchers if the reported voracity of Albertan wolf packs was any indication.

Wolf biologists have recently set out to elucidate the problem of wolf depredations in the Alberta foothills. Little was known about the diet of wolves, and to remedy this, they studied the behavior of three of the six wolf packs north of the National Park in big ranch country (Morehouse 2010; see also Morehouse and Boyce 2011). Researchers monitored the movements of the packs by tracking collared wolves. Clusters of telemetry readings

signaled where a wolf pack had spent a lot of time and probably fed. The analysis of wolf scat further determined their diet.

The research established that the diet of wolves changed seasonally: mostly beef from late April to mid-October and mostly wild prey for the rest of the time. These periods corresponded with the seasonal shifts between home ranches and pastures nearer the mountains:

Livestock constituted 45% of the animals killed by wolves from spring to late fall and made up 73.9% of the total biomass consumed during that time. Also, 82% of the kills were calves and yearlings (Morehouse 2010:19).

The three wolf packs (one was eliminated during the research) killed fifty head of cattle in the course of sixteen months, from June 20, 2008 to October 14, 2009 (Morehouse 2010:13, 20). By comparison, the authors point out, the average rate of kills of each pack was more than seventeen times higher than the rates of confirmed losses reported by biologists in the U.S. in areas where wolf habitat overlaps with cattle range (Morehouse and Boyce 2011).

There is very little known about the effects on populations of wild herbivores of a massive seasonal migration of cattle, whether part of the wild herbivores populations gets displaced temporarily or they altogether recede over time. To that effect, the study did not point out the scale of the bovine influx in the area, which amounts to several thousand head of cattle during summer.¹⁰⁷ And a rough estimate of the seasonal cattle population suggests

¹⁰⁷ An accurate tally was not available. Nevertheless, several thousand head of cattle move in that area west of highway #22 during spring. Over 4,000 head of cattle grazed in the territory of the Willow Creek pack, a small part of the area under study (Pissot et al. 2006).

that the yearly toll in the summer pastures was less than 2%, loss, which puts into question the alleged voracity of wolves in southern Alberta. This percentage of casualties, for dead and missing cattle combined, is roughly equivalent to the rate of loss from all causes expected by ranchers during that time of the year (see also Bangs and Fritts 1996). And in the Chilcotin ranching country of the Interior B.C. where the density of cattle occupation on summer range is much lower, 3% yearly losses to wolves (including unconfirmed kills) are nevertheless common occurrence and considered a part of the cost of doing cattle business there.¹⁰⁸

The findings proved regardless that losses which go unreported and many missing cattle were actually killed (Morehouse 2010:20, 64). This is the gist of the study, which is important for ranchers considering that, instead of full compensation for confirmed kills, they receive 50% of the value of animals if unconfirmed and no compensation for missing cattle (Morehouse and Boyce 2011). A large number of carcasses are never found or found too late to ascertain the cause of death (see also Oakleaf, et al. 2003). The research was designed to circumvent this, relying on telemetry to locate the feeding sites quickly so that Fish and Wildlife officers could determine whether the wolves had killed or whether they were scavenging.

Like for most similar research, the dynamics behind the patterns of depredations remained obscure. The evidence was that the wolf diet shifted “from venison to beef” in

¹⁰⁸ I spent several months working on a ranch in Chilcotin country near Alexis Creek, where wolves were heard vocalizing almost daily near cattle herds. The yearly rate of depredations was said to be extremely inconsistent but it was understood that a rancher who cannot withstand a 3% yearly loss of cattle inventory, most likely due to wolves, was in the wrong business.

the spring and shifted back to mostly deer, elk and moose meat in the fall. The researchers could not determine whether wolves were actually “switching prey”. “Prey switching”, in scientific terminology, is a mechanism that drives a predator to select another kind of prey (Murdoch 1969). If this mechanism was at work, the wolves had begun targeting livestock systematically because of a growing preference for beef. Given a choice then, they would rather hunt cattle. If that was not the case, the change of diet simply reflected the seasonal flux of cattle, in which case wolves were merely opportunists when cattle made up most of the potential prey on their hunting territory. The greatest concern for ranchers was that wolves were actually targeting cattle rather than wild prey regardless of seasonal patterns, and that they were poised to descend on home ranches and begin killing cattle at the same rate during winter as they did in the remote summer pastures. Wolves already ventured onto home ranches to scavenge in bone-yards during winter albeit without taking much of a toll on live cattle (Morehouse 2010; see also Morehouse and Boyce 2011).¹⁰⁹

Ranchers in the study area in question pointed out that the incidence of wolf kills varied considerably from ranch to ranch, cattle herd to cattle herd, and wolf pack to wolf pack. This suggest, in turn, that the research makes light of human agency as confounding factor, as well as herd and pack histories, therefore leaving out crucial contributing factors and building in bias from the start. It effectively drew attention away from practices that possibly made livestock more vulnerable on summer pastures and others that deterred

¹⁰⁹ Biologists subsequently recommended to get rid of these attractants. Cattle that died for unknown causes were suspected of threatening to spread bovine spongiform encephalopathy (BSE) to carnivores and the proximity of carcasses to ranch headquarters increased the risks of conflicts with wildlife (Morehouse and Boyce 2011).

wolves from killing livestock on home ranches despite the fact that bone-yards attracted them there. Arguably, ranch headquarters offer more protection for cattle due to regular supervision or simply because of the proximity of humans. A more comprehensive research focus takes into account that depredations may also be site- and herd-specific (not only pack-specific) and that particular behaviors on the part of cattle, and practices on the part of ranchers are likely to enable or else diminish depredations. Beyond inquiring about wolf diet, the overarching question becomes: what are the cattle and ranchers doing?

A setup for predation

The following is a summary of a presentation by another wildlife biologist, Timmothy Kaminski, during one of the Twin Butte meetings organized to inform people about large predators. Kaminski studied conflicts between wolves and ranchers for twenty-seven years. He worked with ranchers to help reduce these conflicts, first in the western U.S. and for the last ten years in the Alberta foothills north of the Oldman River, in the same area as the wolf diet study. Kaminski highlighted several factors that contributed to the problem of depredations after the reintroduction of wolves in the western U.S. states:

1. *Age of Cattle:* Patterns of depredations showed that wolves killed mostly younger cattle. Yearlings (one year old cattle) were particularly susceptible, being 'naïve', curious, anxious, and prone to panic (Berger, et al. 2001b; see also Kaminski 2009; Kaminski, et al. 2007). This behavior contributed to the incidence of depredations considering that wolves are less likely to attack when wild prey make a defensive stand instead of fleeing (Lopez 1978:57-8; 2006). It was nonetheless common practice to separate yearling steers and non-breeding

heifers from cows before moving them to the high country to fatten up. First, yearlings spent a lot of time in high-risk areas and, being naïve, they lacked vigilance; second, they scattered in small groups, which requires more individual vigilance to begin with (see also Roberts 1996). By comparison, cowherds avoided dangerous areas and were much more vigilant (see also Kluever, et al. 2008).¹¹⁰ Older cows also transmitted vital information to the next generation of breeding heifers about what danger to look out for, what to do about it (give the alarm, gather up calves, mob an intruder, or whatever), and what sites to avoid because of a history of attacks.

2. *Location:* The grazing allotments where ranchers brought their cattle were not uniformly wolf habitat with sites of predilection for an ambush (Oakleaf, et al. 2003).¹¹¹ However, some pastures overlapped with wolf habitat to a large extent and, unlike wild prey, cattle herds were confined within fenced perimeters. Wolf packs, for their part, were quick to make the best of that opportunity. The confinement of herds allowed them to make systematic stakeouts. Wolves were consummate strategists: they learned the layout of pastures and the daily whereabouts of cattle in preparation for a strike (Sime, et al. 2007). Stalking was a collective affair: some pack members would drive the prey, sometimes using fences to funnel cattle towards to the best sites where they would dash in for the kill. Aside from the advantage of hunting as a pack compared to the ambushing techniques of lone bears, the key point was that newcomers and inexperienced wolf packs

¹¹⁰ Another assessment of wolf predation (Sime et al. 2007) estimated instead that wolves killed mostly younger calves in Montana. And for the most part, depredations occurred on private land rather than public lands in the high country.

¹¹¹ For a more comprehensive paper by Oakleaf et al., see: <http://www.pinedaleonline.com/wolf/pdf/Oakleafpaper.pdf> accessed August 17th 2013.

learned to exploit very quickly the potential of killing cattle, especially when eradication campaigns removed pack members experienced in the art of killing wild prey.

3. *The ineffectiveness of eradication:* While doing his research in the U.S., Kaminski kept track of thirteen wolf packs that were decimated repeatedly. In every case, the reprieve for livestock was short-lived (see also Bradley 2004; Gittleman, et al. 2001). Wolf packs quickly recruited other wolves in the aftermath or were replaced by other packs. Either way, the killing resumed within a few months. Kaminski suggested that it was misleading to attribute the incidence of chronic livestock killing to specific wolf packs. Lethal interventions only perpetuated the problem whereas it was possible to use preventative measures to deal with the causes. Ranching practices were the common denominator in any case.

Breaking the cycle with selective culling

Historically, wolves were killed indiscriminately and intensive non-selective lethal control is still the norm. Selective lethal control is a second option, still at the experimental stage (see also Breck, et al. 2012). To evaluate its potential, the closest case study I have found was in big ranch country north of the Oldman River. A few innovative ranchers had welcomed members of the Defenders of Wildlife to help them deal with problem wolves. They joined with other organizations to form the Oldman Basin Carnivore Advisory Group in 2003, which later gave rise to COWS, the Community Oriented Wolf Strategy. The rationale behind their initiative was put this way:

A cycle of livestock depredation, followed by a non-specific killing of wolves suspected of depredation and then re-establishment of wolf numbers, has been repeated over the last decades in southwestern Alberta. Frequently, wolves begin a depredation cycle again and the response is the same. Depredation losses are serious burden to some ranchers and pose a perennial challenge to wolf conservation. [Short of a better solution], one rancher observed, “we’ll keep doing what does not work... only harder” (Pissott, et al. 2006:24).

The participating ranchers also recognized that wolves kept in check the population of deer and elk. They were willing to try a program that targeted the worst culprits in the hope that the rest would stay focused on wild prey. That kind of selective culling had been tried elsewhere. Wildlife Control Specialists in B.C. operate from the principle that very few wolves are involved in killing livestock, one or two within a pack, usually the breeding female.¹¹² Once these were removed, the rest of the pack was likely to stop killing livestock; in addition, they kept other wolves from invading their hunting grounds (MacKay 2005:2).

Consider that for years, [...] wolf control method [...] involved poison. When improperly used, the wolves that experienced the poison either by watching other pack members die or ingesting enough to become sick, soon became trained. [Instead,] “poison wary” wolves [eat] on the carcass until a human attends the kill site. Once a human attends, the pack will often not return to feed on the carcass.

¹¹² See: <http://www.agcanada.com/canadiancattlemen/2010/02/08/focus-on-removing-the-real-predators-the-ones-that-are-killing-cattle-and-ignore-the-rest/> accessed August 8th 2013.

[...] This can lead to the pack killing another animal to replace the food source they have just abandoned (MacKay 2005:1).

According to these observations, the indiscriminate killing of wolves was self-defeating. The B.C. experience indicated that wolves were getting wise to the use of poison and killed more cattle instead. Cows also avoided areas with a history of attacks. By contrast, follow-ups on selective interventions showed that once the culprit(s) was/were eliminated and the attacks stopped, cows returned to parts of the range they had abandoned (MacKay 2005:3). The B.C. specialists emphasized that it was imperative to remove a *minimum* of wolves; otherwise the territory of the decimated pack would be taken over by dispersing wolves or another pack, in which case the cycle was likely to repeat itself.¹¹³

Specialists from B.C. were invited to introduce southern Alberta ranchers to their method. A demonstration project began in 2008 on the vast Waldron ranch at the northern edge of small ranch country. Ranchers soon lost interest in the project because of the efforts involved: long periods of observation were necessary to get acquainted with the wolf packs and the culprits had to be clearly identified before trapping began. Ranchers to the south doubted that it was possible to rehabilitate wolf packs with surgical removals. Instead, a core rancher group of radical interventionists in the vicinity of the Waterton Project joined with the Alberta Trapper's Association and trained in the art of trapping wolves. In their view, the only sensible option for ranchers was to cleanse the countryside right up to the foot of the mountains and maintain a defensive line to keep wolves out.

¹¹³ A team of B.C. specialists in selective culling made presentations in Alberta about their method. Dan and Kyle Lay explained that intensive culling and removing the wrong wolves disrupted the social stability of wolf territories and reduced the chances of rehabilitation.

As mentioned earlier, proponents of selective culling were already active in the foothills before the B.C. specialists came on the scene. Since the Waldron ranch experiment turned out to be short-lived, the COWS initiative on other big ranches north of the Oldman River provides the only extensive track record for selective culling in the foothills. The history of interventions on two adjacent wolf packs, the Bob Creek and the Willow Creek packs, is particularly edifying. As it will soon become clear, the contrast with the results in B.C. is striking.

Selective culling goes drastic

The Bob Creek pack got its name from the ranch where it established its territory. Troubles on the large ranch (35,000 acres or 14,164 ha) began in 1999. Between 1999 and 2002 the pack killed forty-sixty head of cattle (confirmed) (see Bergman and Mack 2007). In retaliation, twelve wolves were killed indiscriminately in 2002, including the breeding male. Other wolves joined the two remaining pack members and the ranch did not report any further loss for three years. The COWS initiative began in 2003 and as part of the program, eleven wolves from the Bob Creek and Willow Creek packs were collared. At the beginning of the selective culling program, no other wolves were eliminated from the Bob Creek pack while the break in depredations lasted (see Bergman and Mack 2007).

The Willow Creek pack, for its part, had started killing in earnest in 2001. The COWS team began tracking the pack in 2003 and attempted to scare the wolves with loud noises when they came too close to the herds. The trend of depredations nonetheless continued and 28 kills were confirmed during that year. A first intervention (with

helicopter) culled four wolves in early 2004 and removals continued until early 2005 at which point the depredations stopped. By that time, twelve out of the fourteen wolves had been eliminated (see Bergman and Mack 2007). Outside wolves began immigrating but like on the adjacent Bob Creek ranch the truce lasted until 2006. Conservationists rejoiced that...

For the first time in many decades, it is apparent that stable wolf territories are contiguous from Kananaskis Country [north of big ranch country in the foothills] right to the U.S. border, an encouraging step forward in long-term sustainability of wolves in southwestern Alberta. We are compiling a list of promising non-lethal methods to reduce the likelihood of depredations (Pissott, et al. 2006).

Domino effects

The Bob Creek ranch serves as summer pasture to two home ranches owned by members of the same family. Over the years, the number of yearlings grazing there has varied from 1,100 to 2,000 depending on the length of the grazing season. After a three-year lull, the Bob Creek wolf pack resumed depredations in 2006 and the yearly losses averaged about 15 confirmed kills and 20 missing during the next three years, between 1.75% and 3.2% yearly – killed and missing livestock combined.

The owners of the Bob Creek ranch became frustrated with the new-fangled method and withdrew from the COWS program in 2009. COWS biologists had tried to no avail to get the owners to modify their grazing program in order to avoid specific pastures while wolves were actively predating on elk there. Members of the COWS group were camping in

one of those sites in the spring of 2009, doing more tests to deter wolves (surveillance and aversive training with noise-makers) when a new campaign of eradication started in earnest. The Pincher Creek office of ASRD (Alberta Ministry of Sustainable Resource Development) sent a special team by helicopter along with telemetry gear to locate the wolf pack.¹¹⁴ A COWS staff member wrote of the event:

I was standing and watching in Bob Creek. It took them a week to kill the four radioed wolves in the pack, and they had to take pups out of the den and kill them before they could get the female...the last one they shot. She was not involved in depredations... A day after they shot her... there were 3 wolves at the den [including] a large male.

The intervention team estimated that the area had been cleansed but three small packs quickly re-occupied fragments of the territory. They started killing livestock within one month as members of COWS kept watch. The small packs were made up of sub-adults and had presumably less capacity to hunt elk compared to a large stable pack led by an experienced breeding pair. Their predecessors had been adept at hunting wild prey, but the newcomers targeted small groups of yearlings. Unlike elk, yearlings scattered when attacked and a single one had little chance against three, two, or even a single wolf.

Due to a constant campaign of eradication, the wolf population has been in constant flux on the Bob Creek ranch since 2009. The social upheaval of packs combined with the fragmentation of the former territory increased the likelihood of depredations (see also

¹¹⁴ The Bob Creek pack was one of the three packs studied by Morehouse (2010).

Fritts, et al. 2003). COWS biologists also estimated that the rate of reproduction of the wolf population was faster for multiple small packs each with a breeding pair than for a larger pack with a single breeding pair.

As noted earlier, groups of naïve yearlings are particularly vulnerable. Moreover, herds of yearlings that were left to graze unsupervised in high-risk sites invited predation. Observations on the Bob Creek ranch revealed particular patterns. Instead of vacating the area after a kill, as cowherds usually do after such attacks, yearlings regularly gathered around the sites afterwards to inspect the remains – see photos below (Kaminski 2009). Their location was predictable and a chain effect followed. Wolves killed yearlings in quick succession and carcasses got strewn along their flight path. And the pattern was repeated.



Figure 6.2 Yearling cattle investigating cattle killed by wolves at the Bob Creek Ranch (Kaminski 2009).



Figure 6.3 Herd of yearling cattle investigating cattle killed by wolves at the Bob Creek Ranch (Kaminski 2009).

Observers also reported a different kind of domino effect: during one episode, wolves killed six yearlings in a span of six days. Grizzly bears detected the carnage and displaced wolves from their kills (see also MacKay 2005). Four grizzly bears claimed most of the kills, eating and guarding them while wolves were feeding on a single carcass (Kaminski 2013, personal communication). After being displaced, the wolves went on to kill more yearlings.

All told, the culling experiments on the Bob Creek and Willow Creek packs had produced similar results over the course of eight years. The non-selective strike on the Bob Creek pack in 2002 and the series of selective removals from the Willow Creek pack had removed most of the wolves from each pack – twelve out of fourteen according to reported

counts. In both cases, a period of calm followed the drastic interventions. The history of the wolf territories took very different turns after 2007. The owners of the Bob Creek ranch chose to eradicate wolves afterwards and hired a trapper, which only perpetuated the above pattern. But COWS tried something different on the territory of the Willow Creek pack – what little was left of it.

Non-lethal interventions

The COWS group remained active in the area after the Bob Creek ranch left the program. It eventually became evident that there was little hope of rehabilitating a pack after removing most of its members. The proponents of selective culling had hoped that inoffensive wolves would reproduce (Pissott, et al. 2006) but did not take into consideration the high rate of influx by wolves dispersing from other packs (see also Mech and Boitani 2003). As the B.C. specialists had warned, radical culling disrupted the social dynamics of wolf territories. It also became evident that depredations occurred in the most remote areas and the herds were unattended when attacks occurred. To devise non-lethal interventions, COWS relied on the premise that wolves avoid human presence.

To that effect, the horizon of antecedents is limited in the New World. Indigenous people held wolves in high regard and there is no indication that they had much conflict with wolves (Lopez 1978). It is conjectured instead that wolves developed an aversion for humans after centuries of persecution by European colonists. They have learned to avoid encounters with humans even in Parks where they are protected (Whittington 2002). But in unusual circumstances, wolves have become habituated, in which case some wolves have

become aggressive towards humans (Yellowstone National Park 2003), and in other cases, biologist studying them reported that they became harmless company (Mech 1998). But for the most part, wolves have avoided close proximity to people (see also Theuerkauf, et al. 2003).

It was a steep learning curve for COWS. The culling of the Willow Creek pack had hardly been selective in the end. Evidently, the last collared wolf had learned too and escaped to Montana (Bergman and Mack 2007) while the remaining un-collared one was joined by dispersing wolves. Several small packs took over the Willow Creek territory, making new territories of their own and expanding from there. Like on Bob Creek ranch, the lull in depredations ended and they began attacking cattle in 2007. The combined death toll for 2008 and 2009 was 89 confirmed kills (Kaminski 2012 unpublished). Four to five small packs were involved in the depredations, affecting about twenty-five ranchers who were using summer range adjacent to the Bob Creek ranch (Kaminski 2012 unpublished:1). In the aftermath, COWS decided to implement a program of surveillance instead of going back to lethal measures.

Since then, the COW Strategy has been to unsettle the patterns that provoke attacks on livestock. The notion that some wolves are good and some are bad does not help much, explained Timm Kaminski. He proposed instead that ranching practices have predictable effects on the incidence of predation. Reducing vulnerability was one avenue: herds of yearling cattle were mixed with herds of cow-calf pairs at the onset of the next stage of experiments. But the most promising way was to increase human presence. A program of

herd surveillance began in 2011 and extended into the 2012 season. The COWS program set out to interfere with the stakeout strategies of wolves.

The role of riders

It was estimated that a wolf pack needed to spend three consecutive days to get ready for a strike. The implementation of surveillance faced several constraints: numerous wolf packs, a small number of riders, and the large size of the area. The broken topography also presented a big challenge, especially inasmuch as thousands of animals split in numerous herds occupied several creek basins. Riders were deployed in a way that would be unpredictable for wolves: shifting from one creek basin to another at irregular intervals, one day here, two days there, but never more than three days between surveillance periods. During each visit, riders stayed near the herds in high risk areas like wolf 'rendezvous' sites, dens, and areas frequented by elk and deer where wolves were likely to be stalking. Riders occasionally drifted the herds towards safer areas at the end of the day. Put simply, the aim was to get predators to associate cattle herds with regular human presence so that they would redirect their attention towards wild prey:

We observed large carnivores or their recent sign on approximately 75 % of days we rode or travelled pastures in attendance of cattle [. . .]. Wolves and grizzlies travelled regularly through pastures occupied by cattle but did not remain. We recorded no conflicts between livestock, wolves or grizzlies in areas we regularly attended cattle. In every area, cattle remained settled, resulting in no instances of

known large carnivore-livestock conflict including depredations or wounding resulting in livestock losses (Kaminski 2012a:5).

The COWS program aimed to develop a “working model” of livestock grazing practices and depredation avoidance tools (Kaminski 2012a). Results have been promising. During 2011 and 2012 summer grazing seasons, the losses were minimal: two head of cattle were killed and one calf was wounded by wolves; grizzly bears for their part killed nine in the span of one week during late fall in 2012. All said and done, two years into the program, the surveillance method remained tentative but the outcome was more promising than any other previous attempts to mitigate depredations. It was not yet possible to discern the effects of specific changes of practice, between the amalgamation of age groups, surveillance, and other factors.¹¹⁵ The surveillance periods and trajectories of riders were recorded with GPS (Global Positioning System) waypoints, as well as the position of cattle herds and signs of predators. But it was difficult to gather sufficient data to back up an actual working model – a published report is forthcoming (Kaminski, personal communication).

One objective of COWS was to map the movements of wolves, cowherds and riders to detect significant patterns: wolves leaving an area when riders showed up or staying nearby and not causing damage, returning after the departure of riders, or whatever might be the case. Ideally, the precise whereabouts of the wolf packs would have been recorded with telemetry as planned (Kaminski 2012a; Kaminski 2012b; Kaminski 2012

¹¹⁵ For an indication, the Bob Creek ranch switched after 2011 to mixed herds with no supervision and the depredations continued.

unpublished). Since wolf packs are very mobile, radio collar information would have also made it possible test specific practices with the location of the packs known in advance. Although sightings were recorded with GPS readings, it was not possible to translate these coordinates into maps of the actual whereabouts of wolves with the accuracy of regular telemetry monitoring. All told, it was difficult to demonstrate the effect of surveillance on wolf behavior. Consequently, some people dismissed the findings as anecdotal and the favorable outcome as fortuitous. Detractors of the project spread the rumor that wolves had left the area and the whole exercise was in vain. However, unlike other local studies of wolf behavior (for example Laporte, et al. 2010; Morehouse 2010), COWS was not able to collect GPS data to record wolf activities. The project did not get research permits to capture wolves and install collars for GPS tracking until the project was nearly over – the surveillance program had funding for two years.¹¹⁶ And once the Fish and Wildlife Division of SRD finally issued the permits, the project was denied permission to administer drugs to tranquilize wolves before installing collars although the project staff included two wolf biologists with several years of experience.¹¹⁷ Bureaucratic hurdles arose at the most inopportune times. And the same people who made it difficult to gather data were the first ones to dismiss the project for lack of solid evidence – more about that kind of obstruction in the following chapter.

¹¹⁶ The project received \$235,000 funding through the Municipal District of Ranchlands as part of the provincial Rural Community Adaptation Program. See: [http://www1.agric.gov.ab.ca/\\$department/deptdocs.nsf/all/csi12825](http://www1.agric.gov.ab.ca/$department/deptdocs.nsf/all/csi12825) accessed August 15th 2013.

¹¹⁷ By comparison, a graduate student doing wolf research in the same area received a permit without delay and was given permission to administer drugs after a two-week long training. The research aimed to verify the extent of wolf predation and did not challenge lethal methods of wolf control.

A shrinking problem

As mentioned earlier, wolves had started killing livestock again before surveillance began in 2011. Although losses are usually measured in terms of death toll, ranchers reported that their most significant losses were due to 'shrink'. 'Shrink' in ranching terminology refers to the loss of weight during transport or other times of stress. In 2008, the yearlings had gained so little weight during the summer that shrink eclipsed all other costs of predation (Kaminski 2012a). Those that had survived attacks, it was thought, had been fearful and worried by wolves all summer long. By contrast, ranchers did not report any significant loss to shrink after the beginning of the surveillance program: the weight of yearlings at the end of each grazing season was within normal range (ibid). Surveillance was nevertheless discontinued after the funding dried up – preliminary reports in the spring 2013 indicated that the cycle of killing had started again on some ranches whereas on the single ranch (the Spruce Grazing Coop) that has continued surveillance, the foreman reported in 2016 that depredations had ceased for several years.

The above case studies of wolf control do not bode well for the prospects of coexistence with wolves unless ranchers change their practices. Non-selective lethal measures and experimental selective culling both seemed to exacerbate predation, on the one hand, and on the other, the experiment in herd surveillance, despite initial success, did not convince ranchers to change, although they might change their mind again if the killing cycle gets into full swing again.¹¹⁸ Most important, the fear experienced by cattle seemed to

¹¹⁸ Indiscriminate lethal control has started anew in B.C. after the government lifted restrictions on hunting and trapping wolves. The population of wolves had grown so much in the course of the last three years that they were ostensibly killing too many moose, aside from intensifying depredations

magnify the problem of depredations. Its economic effects had not received attention before in a ranching context. Its ecological effects, however, have been an important focus of research in ‘trophic cascade’ ecology where fear has been found to play a vital role.¹¹⁹

The Landscape of Fear

Recent studies of elk populations in the Greater Yellowstone Area proposed that the non-lethal effects of predation by wolves (an increase of fear, or ‘behaviorally-mediated’ effects) added significantly to its lethal effects (a reduction in numbers or ‘density-mediated’ effects) (Eisenberg, et al. 2013). In other words, the presence of wolves, besides the death toll they took, changed the foraging behavior of the population of elk in terms of diet and the energy budget (Creel, et al. 2005). Before wolves returned, the food web relations had intensified: elk \Rightarrow aspen. Of course, wolves had lethal effects upon returning, but fear magnified these effects, thus reducing the grazing intensity even more in areas of predilection: wolves \Rightarrow elk \rightarrow aspen. By way of the *non*-lethal effects of fear, then, large herbivores avoided high-risk areas because of the likelihood of attacks, and this reluctance kept them out of areas they had over-utilized in the past (Beschta and Ripple 2008; Laundré, et al. 2001; Ripple and Beschta 2006b). A chain reaction followed and wolves thereafter became instrumental in revitalizing riparian areas: the wetlands vegetation

on cattle. See: <http://www.env.gov.bc.ca/fw/public-consultation/grey-wolf/> and also http://www.huffingtonpost.ca/2011/09/03/british-columbia-wolf-open-season-ranchers-poor-science_n_947623.html accessed August 15th 2013.

¹¹⁹ Trophic cascade ecology studies the top-down relations in food webs between apex predators and primary production, vegetation, plankton, whatever the case may be, through the effects these predators have on the direct users of that primary production, usually herbivores (Eisenberg et al. 2013).

regenerated, which improved habitat for migratory birds (Berger, et al. 2001a); the re-growth of willows stabilized stream banks, which in turn reduced the rate of erosion (Beschta and Ripple 2008; Ripple and Beschta 2006a); and the resurgence of aspen trees attracted beavers (Ripple and Beschta 2004). Similar effects were detected in the uplands where over-browsing had been chronic. Wolves had also reduced coyote numbers (Berger and Gese 2007; Crabtree and Sheldon 1999; Prugh, et al. 2009). Evidently, the absence of wolves had compromised the functions of many ecosystems in the Park since they were exterminated in 1927. Within ten years after they were reintroduced, however, there was evidence that fear was re-structuring the landscape from top to bottom (Ripple and Beschta 2004). In view of the radical changes, researchers proposed that “the landscape of fear has the potential to become a unifying concept in animal ecology” (Laundré, et al. 2010:1).

The public relations of wolves

Scientific evidence that wolves were healers of landscapes was welcome news for the pro-wolf camp: their icon now had the stamp of approval of science. Some scientists got worried, however, that “ecologists (and particularly conservation biologists) do seem obsessed to the point of blindness with predator-induced trophic cascades” (Mech 2012:144). In other words, the conduct of research was perhaps biased in favor of the salutary effects of the presence of wolves on vegetation and riparian areas. Further studies put a damper on the enthusiasm for top-down cascade effects (Kauffman, et al. 2010; Middleton, et al.). Fear was not necessarily a big factor: some populations of large

herbivores were not consistently deterred from browsing in high risks area; wolves did not invariably reduce prey populations nor did they consistently outcompete the coyotes; and in some places the vegetation had not regenerated on account of a landscape of fear at all (Mech 2012). In many instances, the cascade had dried to a trickle, as in “trophic trickle” (Eisenberg, et al. 2013), and bottom-up effects, like precipitation, fire, snowpack, and other causes for changes in plant communities confounded the whole theory. No explanation fits all, evidently, and the theory is still getting worked out. But the cause of worry was that the wolf was idolized by advocates who came to rely wholly on a unifying concept about a wolf reality that has been mediated by debatable science-making. As noted earlier, in the wolf diet study in Alberta, there was significant bias behind the choices that were made to highlight some factors and overshadow others; apex predator effects on vegetation did not obtain in studies that retested the trophic cascades on the same landscapes where they were studied earlier; and scientists disagree on the instinctual makeup of wolves, an issue that gets compounded at the interface with livelihood, of course, but also one that concerns the safety of people – as it will become apparent shortly.

In the absence of fear

The fear factor is of vital importance to a project of coexistence with wolves even if the notion of a landscape of fear is not the unifying concept it is purported to be. The reintroduction of wolves meant that ranchers had to contend with fear regardless of its ecological role on a landscape that was not formally protected. Granted, the ecological relations in the Park were anthropogenic all along: Park → wolves → wild prey →

vegetation. But there was a compound kind of complexity outside: ranchers → wolves → cattle + wild prey → vegetation. When scientists began studying the response of livestock to predators in the vicinity the Yellowstone Park, they admitted that the “true magnitude and extent of wolf reintroduction effects on grazed rangelands is essentially unknown” (Breck, et al. 2012:7). It had yet to be established scientifically whether cattle could learn to avoid dangerous sites and develop sufficient vigilance to avoid predation. There was even less known about the repercussions on their diet and energy budget.

Removing the need for vigilance against predators, let alone predation itself, was the agenda of several generations of professional game managers like Aldo Leopold. He was at first a strong proponent of the eradication of wolves in Southwest U.S. (Meine 1988; Ripple and Beschta 2005). But his anti-wolf convictions eventually gave way to profound misgivings:

I now suspect that just as the deer herd lives in mortal fear of its wolves, so does the mountain live in mortal fear of its deer (Leopold 1970[1949]:140).

Prescient of the importance of predators in food webs, Leopold had gone on to study the ecological impact of the irruption of game animals (Leopold 1943; Leopold 1946; Leopold, et al. 1947; Ripple and Beschta 2005). Rangelands management was also part of his duties and he found that the parallels were unmistakable. Appalled at the devastation wreaked by floods on denuded landscapes, he wrote:

History and experience have shown . . . that to graze the range at all usually means to overgraze the watercourses and bottomlands. Some concentration of stock at these points is unavoidable, even under careful management. History and experience have

shown that this unavoidable overgrazing of the watercourses and bottomlands causes the first flood to begin tearing them out, starting a cumulative process of destruction that ultimately results in ruin (Leopold 1946:629 in Stauder 2009:9).

Given the dismal ecological record of livestock and given also that letting a herd live in fear is not an acceptable state of affairs, the alternative is to replicate its effects. In Alberta, ranching practices have come under scrutiny after it was determined that 89% of riparian areas in the province were either “damaged or impaired” (Fitch, et al. 2003). A program to fence off these areas has helped remedy the situation (Fitch, et al. 2003; Fitch and Ambrose 2003).

Ranchers are faced at this juncture with the legacy of the practices that defined ranching: (a) the lethal control of predators and (b) the free-ranging of livestock. To be fair, ranchers in some regions have already taken initiative. Ranchers in Montana have deployed riders to do herd surveillance – more on that in the next chapter. And herding has already been used in the Southwest U.S. to restore riparian areas and utilize the range more effectively in the process (for a study of use of herding for ecological rehabilitation, see Bailey and Stephenson 2013). The crux of the matter is that livestock depredations and rangeland degradation are closely related problems, and the same preventative practices might help alleviate both. In either case, they involve the effects of the distribution of grazing activities. The notion of ‘density-mediated’ effect is to food web science what ‘stocking rate’ is to range science, and the same goes for ‘behaviorally-mediated’ effects and the control of mobility in grazing systems. The analytical tools of food web science, however, could be put to good use in range science. The subject of livestock mobility has

caused endless turmoil amongst range scientists and range managers that has to do with the means to achieve mobility rather than the value of mobility itself (Briske, et al. 2008; Briske, et al. 2011; LaRocque 2014). Despite the resistance of range scientists to the idea (especially of ‘rotational grazing’), there is no getting around the fact that the systematic supervision of livestock mobility is necessary for the sake of the health of rangelands *and* the safety of livestock on rangelands where large predators are necessary to prevent the irruption of wild herbivores (see Stauder 2009). It stands to reason that food web science involves all herbivores and every factor that affects their whereabouts, by way of predation *or* protection. In the end, it is anthropogenic all the same.

The challenge is undeniably formidable, but worse yet, it faces a monumental obstacle: the demonization of large predators. Problems with wolves are usually measured in terms of economic damage, and the scale of the losses is often exaggerated (Niemeyer 2007).¹²⁰ But as retired U.S. Fish and Wildlife Officer Carter Niemeyer (2007:289)

¹²⁰ In 2005, the losses of livestock to predators in Montana, including coyotes, wolves, bears and cougars, amounted to 4.5% of the total losses incurred (Sime et al. 2007). This is not substantial comparatively, considering that the other losses were attributed to “accidents, lightning, poison plants, and disease” (Sime et al. 2007:22). It would conceivably be a lot more productive to try to reduce the incidence of other losses than to obsess about wolves. Especially given that since 1987 wolf depredation caused annually about 0.04 percent loss of the number of cattle grazing in the Northern Rocky Mountains (Niemeyer 2007). The losses are extremely small proportionally, but they may be significant locally. The overall significance of predation is lost in controversy. As mentioned earlier, the study in the Alberta foothills emphasized the rate of predation (number of livestock kills per wolf pack), ostensibly seventeen times higher in the Alberta foothills than wolf packs in the western states, but omitted to take in consideration the scale of the predation in terms of the total cattle population in the area occupied by the wolf packs under study. It is precarious to extrapolate from these findings that wolves in southern Alberta wolves are in general exceptionally lethal towards cattle. Especially given that researchers did mention that certain operators were more affected than others, the discrepancy can be attributed, on the one hand, to an environment propitious to predation, like in the case of the territories of the Bob Creek and Willow Creek packs, but on the other hand, it can also be indicative of practices that attract depredations.

remarked about the wolf controversy: “Few wildlife issues are so driven by misconceptions that have so little basis in biological fact”. It is “an example of science ending up at the doorstep of public opinion, and public drama” (Royster 2004:1).

The harmless wolf fallacy

Some scientists have contributed a great deal to the ideological arsenal of the anti-wolf camp. According to one theory, a particular set of circumstances precipitates a chain of predation that ends inexorably with human deaths. Wolves reproduce at a terrific rate, and when a scarcity of wild prey is followed by a shortage of livestock, the human population is next in line. And when the humans in question are unarmed, the results are predictable: wolves → ~~wild prey~~ → ~~livestock~~ → humans. The human-killer wolf theorists point to episodes in Russia when scores of people disarmed under the Soviet regime were slaughtered by wolves (Geist 2007a; Graves 2007).¹²¹ There is also plenty of archival evidence that the same pattern culminated in episodes of wolf slaughter throughout Europe when wolves preyed on rural populations (Fabre 2006; Geist 2007a; see also Linnell and al. 2002; Moriceau 2007). Wolves had to be systematically annihilated, political rulers often decided, before the countryside was again safe for humans and livestock alike.

The consensus amongst conventional wolf biologists, however, is that there is no scientific evidence that wolves target humans as prey (Kellert, et al. 1996; Mech 1970; Mech 1998). The wariness of wolves, their detractors counter-argue, is merely a function

¹²¹ Hunting and firearms lobbies are particularly avid for that kind of argument. See for example: <http://prfamerica.org/indices/WolfReintroductionNY-Index.html> accessed August 16th 2013.

of centuries of relentless hunting in North America. The true nature of the beast is concealed behind its current wariness. Human-killer wolf theorists surmise that, based on their limited experience with furtive wolves, North American wolf scientists have fabricated a myth of their own that is destined to cause an upsurge of attacks on humans.¹²² The harmless wolf fallacy is pure self-deception, in this view, and an entire generation of researchers has succumbed to it (Geist 2007a; Geist 2008c).

Siberians invaders: red in tooth and claw

Proponents of the human-killer wolf theory argue that problematic predators are of Siberian extraction. Protecting these Euro-Asian immigrants, so their nativist argument goes, is a misguided conservation project. Wolves, grizzly bears and wolverines are poorly adapted compared to their North American counterparts, coyotes, black bears, and raccoons. Siberian predators were never exposed to the unique “predation hell-hole” of North America during the Pleistocene era: they never acquired the adaptability of those native ones that had learned to shy away from mega-predators, dire wolves, short-faced bears and saber-tooth tigers (Geist 1989; Geist 2007a:15-16; Geist 2008c:17). Will Graves (2007) argues that with their killer instincts intact the Siberian predators never lost their ferocity and wolves are the worst of the lot, ravaging game populations and transmitting infectious diseases and parasites in the process. After studying the natural history of wolf populations on both sides of the Bering Strait the latter advocates the extermination of

¹²² To consult Valerius Geist’s forensic analysis of a human casualty in Saskatchewan attributed to wolves, see: http://graywolfnews.com/pdf/dr_valarius_geist_re_carnegie.pdf accessed August 23rd 2013.

wolves, “lustful killers” that inexorably take to stalking human beings and have kept remote villages in Siberia under siege (see also Geist 2007b; Geist 2008a; Geist 2008b; Geist 2008c).¹²³

Proponents of the human-killer wolf theory are not without credentials. Valerius Geist is a wildlife biologist and professor emeritus at the University of Calgary. He has studied under esteemed ethologist Konrad Lorenz and received many awards from conservation organizations. Furthermore, he has a considerable readership besides his academic journal articles. His writings circulate widely in popular hunting magazines, online grey literature, and various venues and conferences. Special interest groups recruit him to introduce the public to their propaganda. In a preface to the wolf research of a colleague, he repents of his earlier adherence to the harmless wolf myth, warning instead that having lived on a landscape that had been recently recolonized by wolves, he had experienced them as the very embodiment of a regime of terror.¹²⁴

¹²³ Will N. Graves, reputed to be an expert in diseases and parasites carried by wolves, gave a public presentation at one of the panels in southwest Alberta. His assertions that wolves had killed a great number of Russian children and spread diseases and parasites rekindled local enthusiasm for the persecution of wolves. For a brief summary of Will N. Graves’ argument about wolf diseases and parasites, see his comments as representative of the Property Rights Foundation of America to Ed Bangs, leader of the wolf reintroduction program for Yellowstone: <http://prfamerica.org/2011/GravesLetter1993.html> accessed August 17th 2013.

¹²⁴ See: <http://www.rangemagazine.com/features/winter-08/wi08-russian-wolves.pdf> accessed August 23rd 2013.

A matter of social contract

The survey of several ecological disciplines I have made in the course of the previous chapters has revealed the broad spectrum of epistemological signposts to choose from for orienting the conduct of interspecies relations. I do not opt to arbitrate what realities are most credible among those distilled by scientific research. I choose instead to make the contradictions explicit in the layout of signposts which has portentous implications given that many of them have been adopted in a variety of contexts. In the next chapter, I follow up with a local history of interspecies relations to find out their outcomes over the course of time. I have investigated them at multiple social scales, of institutional, community, and family genealogies. And I wish to convey that at each scale these relations shape up as social contracts in interspecies affairs that mutate according to the passing of precepts in ecological moralities. It is a rather recent phenomenon that science has become, at least in discourse, the principal signpost in the conduct of landscape. I proceed forward with the proposition that science-making in matters of landscape makeup is pregnant with moralities, which is what this chapter has illustrated. And from there I continue in Chapter 8 with the proposition that science is recruited to serve the agenda of those positioned as intermediaries between science-making and its practical implementation.

Chapter 7 The predator problem: a maze of approaches

In this chapter, I bring a historical perspective to the problem of interspecies relations. Attitudes have changed considerably in the course of the last century and the variety of perceptions of people who live near big predators challenges the stereotype of rural intolerance – granted that the latter remains well entrenched in some quarters. The main issue, however, is that the change of attitudes towards accommodating predators is out of sync with established rural practices and instead of converging through negotiations in order to deal with the resulting friction, people have split into factions. I do not propose that polarization is inexorable in these situations. A crisis of practice can also mobilize a community, mending bridges as it did for the Blackfoot Challenge from Montana for which I will provide a short case study to give insight into a more radical turnover of ecological relations. Also, the striking contrast between the two adjacent case studies, in Alberta and Montana, points to the issue of the constitution of place and the verdict about countenancing social diversity in the human sphere, let alone in the animal sphere. The ranching community on the Montana side, which I do not claim is representative of the state, has brought every interested party to the same table of negotiation whereas the place-making politics on the Alberta side abetted divisiveness. Still a force to reckon with, the commitment to the ecological order from the frontier days has changed discourse more readily than practice. The behavior of animals, on the other hand, defies received scientific wisdom and animals display a tremendous capacity to improvise and adjust to changing circumstances.

It just isn't what it used to be

First, I return to the commentaries of local people made in the survey report I introduced earlier, the 'Carnivores & Communities in the Waterton Biosphere Reserve'. I selected a few entries to illustrate the broad range of attitudes towards wildlife:

I'd suggest that my wife and I are more concerned with moose than with bears, or wolves, or cougars; and I'd suggest that coyote might, on average, be more of a threat than any of the listed species [of] carnivores. Grizzly bears, in particular, and based on a number of encounters, show a remarkable sense, more than most people, in dealing with human threats and/or inadvertent blunders. Even grizzly sows with cubs surprised at close range, and grizzlies protecting freshly killed moose calves have, based on our experience, proved themselves astute assessors of the situation, not prone to do more than each situation warrants (Quinn and Alexander 2011:51).

For other residents, the key to good interspecies relations is a healthy dose of fear:

Over the years, a large number of bears (black and grizzly alike) have passed by (within a few yards of our home) on their way somewhere else – we don't have any issue with these fine (sometimes a little curious) but primarily shy neighbours. It's the ones who have a disposition to want to move in and stay awhile that lead us to want to do something about it. I feel very strongly that it is extremely healthy for bears to FEAR humans – we just were never meant to be buddies – when bears lose their fear of man, problems start, especially for the bear.

As for cats [cougars] – if you start having trouble there isn't much you can do (they don't fight fair and if they aren't scared – you won't scare them off. Coyotes and wolves usually aren't a problem until they get a taste of beef.

I don't know anyone who doesn't enjoy seeing all the diversity of wildlife this area has, but when there is a problem animal it would be nice to be able to get rid of it without the media and environmentalists acting like an oil tanker just hit another reef (Quinn and Alexander 2011:53).

By this way of thinking, the most effective way to instill a climate of mutual respect is to cull animals that do not have a favorable innate disposition. But this is considered a total waste of time by those who long for the scorched earth policy of the old pioneer days:

I think my opinions do not really matter when decisions are being made and I will kill every predator on my place and I wish every landowner would do the same and things would be like they were 50 years ago when we did not have any wolves in this country because they had been killed when settlers first came into this land to make it a safe place for people to live.

50 years ago grizzly bear, black bear, and cougar sightings were rare, coyotes are very hard to kill but there are more of them than ever before. I hope to live long enough to get the proper weapons to kill them off. There used to be a bounty on the hides of predators and it is the way it should be now (Quinn and Alexander 2011:52).

What this kind of nostalgia does not take into consideration, however, is that during the early 1900s game animals were scarce throughout the region and some species had vanished altogether from the prairies (England and DeVos 1969). When elk returned to the district in the 1930s, people did not know at first what kind of game animals they were. Aliens in the annals of the settlers, they multiplied at such rate that by the 1950s ranchers had to defend their haystacks at gunpoint. The predictions of Aldo Leopold about the irruption of wild herbivores had materialized. The nearby National Park was taken to task for perpetuating the problem, which put its administration into a quandary that forced the entire revamping of its wildlife policies.

The National Park: a paradise for trappers and ranchers

As peculiar as it may seem now, many species of wild animals were banished from the wilderness of National Parks when they were first created and it took several decades before they became entitled to live there. Before it was renamed Waterton Lakes National Park in 1930, the Waterton Lakes Forest Park began modestly in 1895 around the small village on the shore of the largest lake by the same name. From the time of its inception, wardens “had standing orders to eradicate . . . puma, wolf, coyote, lynx, bear (if nuisance), gopher, porcupine, eagle, hawk, woodpecker and blue heron (for eating geese eggs)” from the general area (MacDonald 2000:74). This was not entirely exceptional for a Park. In 1909, regulations for all Mountain Parks directed wardens to destroy predators considered “noxious, dangerous, and destructive animals” (Parks Canada 2011).

James Harkin, Park Commissioner for the Mountain Parks between 1911 and 1936, had different ideas. The proper mandate for a Park, in his estimation, was to ensure that “the beauty of the landscape is protected from profanation, the natural wild animals, plants and forests preserved, and the peace and solitude of primeval nature retained” (Parks Canada 2011). Many years after taking office, however, Harkin reported that the Park in Waterton was “virtually paying [the wardens] a salary to carry on a general trapping business” (MacDonald 2000:74). Kootenay Brown, the first Superintendant in Waterton, had set the tone right from the start: ex-wolfer and liquor trader, he was a good friend with Albert “Death on the Trail” Reynolds, a park ranger across the border in Montana’s Glacier National Park. They agreed that a Park had to pay for itself, perhaps affording them a profit, and these two frontiersmen made conservation into a very good free-trade business. Nine ranchers and a professional wolf hunter were hired as honorary wardens. Beside hunting, they were put to work trapping beavers, ostensibly to safeguard the trout hatchery, and fishing the big lake trout with set lines and dynamite (MacDonald 2000:67-68). Kootenay Brown also made a deal with ranchers to look after their herds in the upper Waterton Valley (Hatfield 1907) and, with that precedent put in place, every spring for decades over three thousand head of cattle migrated to the area, even after it became officially part of the Park.

Those were good days for a lot of local people who worked in the Park as wardens, lumbermen, sawyers, road builders, guides, outfitters, hotel staff, or else were employed during the short boom in the ramshackle camps of Oil City, which was built around Alberta’s first oil-well – now a small relic in the middle of today’s Park. Until 1928, wardens in every Mountain Park were allowed to sell the pelts of any predators they killed

in the line of duty with the exception of bear skins, which had to be turned in (Parks Canada 2011). That year Harkin finally got his way and predators gained protection.¹²⁵ The tide eventually turned against ranchers as well. The severity of grazing by cattle already alarmed some people before the 1920s: “all the winter range for the elk and deer has been eaten off”, wrote one warden (MacDonald 2000:66). But it was not until 1947 that the Park authorities judged that the damage had gone too far and the grazing privileges of ranchers were revoked (Horejsi 1989; MacDonald 2000).

This precipitated another series of problems when the elk population in the Park exploded shortly thereafter (MacKenzie 1973). Scrambling to placate ranchers who felt twice cheated, Park authorities resorted to population control when elk began spilling out on neighboring ranches. Special abattoirs were built and 1,577 elk were slaughtered between 1947 and 1969 (MacDonald 2000:137). With their population rebounding during the 1970s and 1980s, elk began raiding haystacks again. They were the main source of acrimony between ranchers and the Park until wolves came back on the scene, which, of course, triggered another controversy.

At the heart of these controversies are the institutional perimeters of wilderness. The arbitrariness of the boundaries is seldom discussed, however, although it is apparent that it was left to political expediency to decide where the Park ended and ranching began.

¹²⁵ It took a long time for these policies to get implemented. In 1943, the Superintendent of Yoho and Glacier Parks (two of the Mountain Parks in the Canadian Rockies) was bitten by a grizzly bear while hiking. He directed the wardens to destroy every grizzly bear they saw near the busy visitors' centres. This was policy in all the mountain parks until the 1950s (Parks Canada 2011:7). At the same time, the pamphlet “Don't Blame the Bears” was distributed in the Parks (ibid).

The Park covered little more than the Waterton village early on, but in the course of the next decades it came to encompass the Castle Valley to the north and an area to the east referred to as the Poll Haven (80 sq. km).¹²⁶ There is therefore a historical precedent for ranchers to fear the expansion of formally protected areas. But in the in the mid-1900s, the federal government returned these two areas to the province which, in turn, made them available for grazing cattle. One of these tracts, since then named the Poll Haven Community Pasture, has been a depredation hotspot and a mortality sink for grizzly bears and wolves (Horejsi 1989; MacDonald 2000). That was the reason for the commotion at the Mountain View meeting. Local resentment stems in part from the perception that the Park betrayed them and the suspicion there are plans to expand it again. But at the same time, the dispute about institutional boundaries completely disregards the dynamics of wildlife populations. The large herd of elk, over six hundred head, has not been a problem on ranches for over two decades: it spends most winters in the Park, making short forays outside; the diet of the resident wolf pack is mostly elk at that time and the ranches north of the Waterton River suffer no haystack depredations during that period. Come spring, however, the main herd of elk drifts to Montana and the wolves shift to other prey, deer especially, which takes them to the Poll Haven district where cattle are put to pasture for the summer. The result is predictable, and yet the ranchers are loath to admit that reshuffling the boundaries back to where they were could reduce the strife considerably.

As suggested in the previous chapter, depredations were worse where the geographies of ranching and wolf habitat overlapped on the summer range. The COWS

¹²⁶<http://srd.alberta.ca/LandsForests/LandusePlanning/documents/IntegratedResourcePlan-PollHaven-1989.pdf> accessed August 29th 2013.

project indicated that husbandry practices and human presence were a decisive factor in the incidence of depredations. However, the danger that wildlife poses for humans is altogether a different issue regardless of depredations. In that respect, the history of interspecies relations within the Park is also enlightening.

Unnatural social becomings

It is conventionally understood that the behavior of animals stems from the biological nature of their species. In other words, its instincts. And, for the most part, behavior takes place in predictable fashion within a range of variability that is considered natural. However, I will illustrate shortly that this apparent normalcy is rather a function of social currents in landscape relations. Fear, for instance, along with estrangement and alienation, has been the predominant relational current in the streams of encounters I have visited here, as it pertains in the previous chapters to the bundle of relations between humans, livestock, and wildlife, especially large predators. But it is not destined to be forever embedded for it is a function of practical engagement. I recapitulate here with the proposition I borrowed from Tim Ingold, Deleuze and Guattari in my thesis introduction, each of 'us', which I take to be all-encompassing, is instantiated in a certain line of becoming. Relentlessly in the momentary mode, then, becoming follows trajectories that potentially breach expectations, especially that it is co-constitutive.

Taking that into stride analytically, there is less attachment to the essentialist expectations that the constitution of an entity is locked genetically. Rather, the trajectories

of becoming are rather like those of ontogeny. Hence, a cow is not wholly 'cow' to begin with as if its entire makeup was distilled from its phylogenetic essence; she rather becomes a cow of a particular kind as a function also of where and how she grows, which varies considerably, especially in matters of sociality, whether it happens to be free-ranging on a ranch, herded by pastoralists, or scavenging the streets of New Delhi. And the ongoing instantiation of becoming, ontogenesis as it were, is not readily perceptible until mutually conditioning relations steer it outside the bounds of ordinary patterns. The same goes for animals of other species.

Bambi goes ballistic

Blanket protection has devious consequences. During the public meeting in Twin Butte, the Park warden reported that conflicts with bears were a thing of the past. Careful garbage disposal had eliminated most incidents of wildlife problems, but the report was only a partial account. A malaise nevertheless persists and insidious issues of interspecies coexistence keep resurfacing. Going from the heavy-handed interventions of the early 1900s to trusting some kind of natural balance was a bold act of faith.

People who grew up and went to school in the Park do not remember the village as a refuge for prey. All kinds of wildlife were passing through and they recalled their mischief as kids, chasing bears with their dogs and generally keeping wildlife on the alert. In other words, the stalking and fleeing mode was rather prevalent everywhere. Then it became unacceptable to molest wildlife and the Park made new rules to ensure full protection. Dogs were put on leashes, and wardens renewed efforts to keep predators out of the village

in non-lethal fashion. Mule deer and bighorn sheep have taken advantage of the situation and over the years, they started to settle in the village using it as refuge from predators. In 2009, however, deer began attacking dogs to the great distress of the owners at the other end of their leashes. Park authorities warned that

Deer in Waterton can be aggressive. The females (does) are of particular concern during the spring fawning season (June). They aggressively defend their fawns when people, especially those walking their dogs, come anywhere near, and this aggression is escalating.

Also, this high concentration of deer in the townsite has led to the occasional foray of bears and cougars into the area, creating further public safety concerns¹²⁷.



Figure 7.1 Warning posted online for the Visitor Center of Waterton Lakes National Park (see footnote below).

¹²⁷ <http://www.pc.gc.ca/pn-np/ab/waterton/visit/visit4/visit4a.aspx> accessed Feb 18th 2013

Summertime in 2010: Park staff were seen hazing does back towards their fawns before tourists would take it upon themselves to rescue an abandoned fawn and cause havoc. Staff intervened when deer assaulted the unwary tourist and marked aggressors with blue paint balls. After two blue marks, the delinquent deer were marked with red. Once splattered in red, hard-core offenders were removed from the Park – their fate unknown.

While Park staff stalked deer with paintball-guns, Park trucks could be heard sounding the alarm as wardens rushed to the village's edge on aversive training missions against large predators. The Park administration changed strategy in 2011. A specialist with herding dogs has since been fully employed during the tourist season to escort deer out of the village.¹²⁸ Despite these precautions, some deer grew bolder and carried out some spectacular assaults. One tourist ran into the frigid waters of the lake holding her dog in her arms to get away from a rampaging deer; rescue came in extremis to save the severely hypothermic dog owner. Another deer chased another dog and dog owner into a cottage and the wardens had to be called in to end the siege.

All the while, predators have kept converging on the town-site refuge and the Park authorities multiply warnings like this one:

¹²⁸ Outside the Park, prey has also begun to seek the relative safety of human presence, and predation has taken place near the doorsteps of houses. In 2009, police officers went from home to home on the highway to the Park to warn residents that a grizzly bear had been sighted and that they should stay inside to avoid mauling; shortly after, the local newspaper set off the alarm that a cougar had killed a deer in someone's yard and kept returning to consume it.

The cougar (puma, mountain lion) was nearly or completely absent from the Waterton Park area when the park was created. . . The solitary and elusive cougar is now seen more frequently as populations gradually recover. The town-site and campgrounds, with their habituated deer and sheep, have become a favorite hunting ground for some cougars, especially in the quiet fall and winter seasons. Cougar attacks on humans are rare. There have been two incidents within Waterton Lakes National Park in the last decade when a child received minor injuries. Females with kittens and animals which are cornered, surprised or feeding on a kill may act aggressively. Cougars often show curiosity toward human activities without behaving aggressively.¹²⁹

Bears without Fear

For an opportunity to gaze at large predators, especially bears, tourists from all over the world drive up and down the roads of the Park. Parking their cars randomly, they gawk at bears on the roadside while Park attendants urgently wave them on to keep them from blocking the traffic. 'Bear-jam' duty is considered the dreariest job for Park staff, having to be always on the lookout for tourists straying from the safety of their vehicle to get the perfect close-up snapshot.

¹²⁹ http://www.experiencewaterton.com/waterton_wildlife/cougar.htm accessed Feb 18th 2013

Other tourists venture into the backcountry and as a cautionary measure the Park closes some trails after reports of bear sightings. Yellow plastic tape, the kind used on the sites of crimes, is then stretched across the path. In 2011, one bold bear caused a lot of agitation, and rumors of close calls became so prevalent that authorities held a meeting to reassure the community of town residents. At the time, a scientific team was making transects to study the ecological role of predators near the area haunted by that bear. After an encounter with a bear, team members complained and a gun-toting warden was assigned to escort them afterwards. Later inquiries indicated that the bear was merely inquisitive: no bluff charges, no stalking, no aggressive behavior, just curiosity. Yet people were adamant that they were at terrible risk.

Every National Park has had to deal with this issue. Retired Superintendent of Banff National Park, Kevin van Tighem (2013b), emphasizes that over the years it has become apparent that policies based on fear were misconceived. Until the 1980s, most grizzly bear deaths in the Park were the result of interventions by wardens to get rid of 'problem bears'. These incidents were for the most part eliminated after the disposal of garbage was improved during the 1980s. Park authorities thereafter implemented 'aversive training' to deal with bears that had lost their 'natural' fear of humans.

Aversive training involves a sophisticated array of deterrents: noise deterrents like bear-bangers, 12 gauge crackers and whistle crackers, air horns, sirens, loudspeakers and an arsenal of pyrotechnics. If a barrage of noise artillery does not induce sufficient fear, the next step is to inflict pain. Physical deterrence uses a variety of projectiles: stones, marbles, beanbags, and synthetic bullets. Another

resort is to frighten bear away with a special breed of 'bear dogs'. The objective of the entire program of bear aversion is to assert human dominance in the bears' best interests.¹³⁰



Figure 7.3 Practice of aversive tactics, sponsored by Bearsmart (see footnote above).

As Kevin Van Tighem found out, however, these aggressive measures affected mostly mild-mannered bears that respected humans to begin with and were the best bears to have around. Hence the pursuit of aversive tactics made for unnecessary tension between bears and people near public camping areas as well as in the backcountry. He wishes instead that people could relax and enjoy their presence while carrying 'bear spray' in the unlikely case of an attack – the device has proved to be a very effective deterrent (Herrero and Higgins 1998). Given that relations with large predators are usually envisaged along an axis of fear, whereas the absence of fear is said to be a harbinger of doom, and, conversely, mutual fear

¹³⁰ The BearSmart Society and BEAR Scare organization promote such methods. See <http://www.bearsmart.com/bear-management/non-lethal/training> accessed March 28th 2013. The photo above procured from this site, shows training sessions for bear trainers in training.

of humans is understood as a guarantee of safety, Van Tighem's suggestion therefore poses a significant challenge to the conventional views of both bear objectionists and bear sympathisers.

The proposition that encounters are potentially safer if freed from a history of antagonistic interventions leads down the path of a complete overhaul of present policies. By the same token, advocating a climate of mutual respect that is not founded on mutual fear foretells a turn towards a kind of interspecies rapprochement which, by some standards, is paramount to transgression. Such was the verdict for biologist Lynn Rodgers, co-founder of the Wildlife Research Institute, who has argued all along that bears are not intrinsically dangerous and unpredictable, and that the knowhow that comes with proximity is a better safeguard against a perceived threat than what distance through alienation can provide as a buffer.¹³¹ But the kind of interspecies familiarity with which he conducts his research is deemed inappropriate and the U.S. Department of Natural Resources revoked its longstanding research permits (an action that was also weighed by a judge's decision).¹³² Given the present rule of ontological politics that essentialize 'bear' as social delinquent, the current epistemological regime gets to enforce alienation through the lawful disciplining of subversive brands of science.

Undermining histories of mutual respect like that fostered by Lynn Rodgers and the Wildlife Institute is wholesale institutional capitulation. Policies are thus tailored to fit the

¹³¹ See: <http://www.bearstudy.org/website/about-wri/about-the-wri.html>

¹³² See: <http://www.twincities.com/2014/05/26/lynn-rogers-bears-pose-public-safety-risk-judge-says/> accessed January 2016.

lowest common denominator of interspecies relations for the sake of fending off the occasional worst case scenarios that invariably follow – however self-inflicted the latter might be. As the incidents in the Waterton village have shown, predation-free zones have effectively compounded the problem of interface by creating areas towards which both prey and predators gravitate. The subsequent aberrant behavior of deer towards humans is perhaps a minor consideration, which the resumption of predation could help resolve, but letting predators sort this out *in situ* raises the specter that they too lose respect towards humans.

This spiral of intensifying attraction of wildlife towards human habitation is not limited to the Park. This is the crux of the controversies, as told in the community meetings, since buffer zones where people are having a life rather than a holiday are effectively the arena where the future of conservation areas gets played out – hence the importance of the Waterton Park Front Project. The Project is potentially an experimental ground where alternate relations can be systematically tested.

The Russell family affair with bears

It is not necessary to look very far to find a scenario where relations have shifted towards affinity. The Hawk's Nest on the Russell place is perched on a promontory that offers, as the name suggests, a bird's-eye view over most of the Waterton Park Front Project. Built in 1923 as a hunting lodge for wealthy clients, it was a destination for grizzly bear hunters for several decades, until it completely changed vocation – I have already highlighted the range

management on the Russell place in an earlier chapter. Just as striking is the change in the family's narratives about bears that also suggests that today's bears are very different from their predecessors.

The Russells have an enthusiastic following nationally and abroad. A popular author, Andy Russell left a prolific legacy of writings in defence of wilderness (Russell 1968; 1973; 1983; 1984; 1987). Andy travelled internationally in the 1970s to show his film "Grizzly Country," which was touted by enthusiasts as "a Film of Adventure and Action without Bloodshed" (Loo 2006:254).¹³³ This popularity did not soften attitudes locally; quite the contrary.

His sons have continued in different veins to put into practice a sort of fellowship with wildlife in general. Charlie in particular proposed a comprehensive approach to sharing living space with grizzly bears and enjoying their company instead of dreading the very idea of their presence (see Russell 1994; Russell and Enns 2002; 2003).¹³⁴ Besides going on regular speaking tours across Canada and the U.S., Charlie has been invited to share his experiences and findings in Slovenia, Italy, Slovakia, and elsewhere in Europe.

¹³³ Andy and two of his sons got the film footage *in situ*, without the use of bears tamed or in captivity. And they had to go as far north as Alaska to secure enough footage, for lack of bear activity in the Waterton Lakes area.

¹³⁴ In 1997, PBS made the documentary *Walking with Giants: Grizzlies of Siberia* about Charlie's work with bears in Russia. In 2006, the BBC filmed the documentary *Bear Man of Kamchatka*. Shortly after, *The Edge of Eden: Living with Grizzlies* came out as an expanded version of this documentary. See also <http://cloudline.ca/>

Multiplying ontologies

Charlie's grandfather would have been astonished at Charlie's message. Frederick Herbert (Bert) Riggall was a mountain guide, outfitter, hunter, trapper, rancher, naturalist, photographer, writer and gunsmith.¹³⁵ Andy Russell wrote that his father-in-law Bert was the epitome of a mountain man and also a homesteader and a community-minded person. He shared his knowledge of wild flowers with schoolchildren, bringing his collection to the local Parkland schoolhouse to teach them the rudiments of plant taxonomy – his naturalist workbook for the little school is still in the Hawk's Nest library. A group of conservationists based in Pincher Creek named the Bert Riggall Environmental Foundation after him. As much as he loved nature, however, Bert had an aversion to bears and killed them at every opportunity. He wrote to the local newspaper, the Echo, to encourage citizens to put grizzly bear on their menu. Every incentive was valued to put an end to the menace, especially because in Bert's estimation the mountain range in the vicinity of Twin Butte was the haunt of a terrible kind of grizzly bears. In a letter to an official, Bert warned that...

... our bears are big, savage, and fearless, and I want to tell you that there is an awful lot of difference in the disposition of the grizzlies in different sections, not far apart perhaps in miles. For instance, in this particular section the grizzlies are *all* cattle killers and come right into the corrals and kill milk cows and calves right close to the

¹³⁵ Bert was born in England and grew up with a naturalist curiosity and a taste for adventure, which drove him as a young man to visit western Canada in 1904, work as a surveyor, and eventually settle there. Further information about Herbert Riggall can be found in the Bert Riggall fonds V-26 at the Archives and Library of the Whyte Museum of the Canadian Rockies in Banff, Alberta.

buildings, sometimes in broad daylight, but mostly at night. They run cattle for miles, like a hound, and several times have been seen to chase an animal across country and kill close to the home ranch. They act a good deal like lions in Africa, and at times my neighbours have set up all night with rifles and listened to bears killing and chasing cows 'round the houses and barns (Bert Riggall *in* Russell 1968:97).

Bear behavior varied regionally, explained Bert: "here the bears come out of the mountains to kill cattle every fall, and there [75 miles north] the cows invade the grizzlies' own territory in summer and fall with impunity" (ibid). But it is inexorable, in Bert's view, that anywhere bears meet cattle they soon get a taste for beef and become killers:

Likewise I predict that if ever a cow beast is killed by a grizzly in the section fifty to seventy five miles north of here, the cattlemen will have to kill all the bears off, or draw their cattle out of the mountain range, or lose a hundred head a year (ibid).

Local indigenous knowledge was also proof of the danger and ignoring it comes at one's own peril, Bert Riggall came to believe. Good hunting grounds were in short supply after settlers crowded the country and when Bert heard that game was plentiful in Yarrow Canyon, he cut trails up there to set up a camp for hunting bighorn sheep. Groups of Stoney hunters (also known as Nakodas) hunted near the Park at the time and Bert inquired why there were no trails up the canyon. It was home to very 'bad bears', the Stoney leader warned him. Sixty years earlier (around 1860) grizzlies had scavenged bodies from a camp decimated by smallpox and killed those too incapacitated to defend themselves. Grizzlies

in Yarrow Canyon have hunted humans ever since, in Stoney lore (Russell 1968:67).¹³⁶

Bert did not abide by the leader's advice and by his own account nearly paid with his life twice for his brazenness (ibid: 97).

Andy eventually differed with his father-in-law Bert Riggall on the matter of grizzly bears. He saw their ghastly reputation as a frontier phenomenon:

The homesteaders were carving a living by sweat and hardship out of the wilderness, suffering in country that knows no favorites, and sometimes they stared ruin and even death squarely between the eyes. Under the circumstances it is human to want something tangible to fight – something even to hate; and so the grizzly was hated and hunted unmercifully Although from the very earliest times of frontier penetration men have been fascinated by bears, they have also been to a large extent bear haters. The days of the old frontier are gone. The grizzlies are still here in reduced numbers, and although some still kill cattle on occasion, they have mostly learned over the years to avoid trouble. They do not hunt men anymore. The temper of grizzlies does vary in different portions of the country. But when one looks deep enough, it will be found that the most unpredictable and dangerous bears usually live where humans have recently come to administer their particular brand of “missionary” work. I wonder what Bert Riggall would have said, could he have lived to see his grandsons fraternizing with grizzlies, shooting them while

¹³⁶ While I managed the ranch at the mouth of the same canyon in the 1980s, after Charlie's tenure in the 1970s, I received the visit of Joe Crowshoe, Pii'kani elder and Keeper of sacred bundles, who kindly warned me about the same dangers. The grizzlies, however, did not live up to their reputation despite my daily forays deep in their territory, which actually happened to overlap my entire ranch workplace.

armed only with cameras, and what is more important, sincerely liking the big animals (Russell 1968:99-100).

Early in his career as outfitter, Andy took clients on bear hunts, and good sportsmanship was paramount. Although he was also employed by ranchers to eliminate bears that were chronic cattle killers, he did it as a consummate tracker: for him, the common practice of baiting and trapping bears was “obscene” (see Russell 1968:157). It became evident instead that most allegations against bears were false: benign bears were slaughtered while those that specialized in livestock depredation became all the wiser – the same theme as for wolves in the last chapter.

Charlie grew up with campfire stories and tall tales about the unbelievable feats of bears during pioneer days steeped in fear. He encountered nothing of the sorts, however, while managing a ranch in the 1970s at the mouth of the infamous Yarrow Canyon. While riding there one day, Charlie spied a grizzly bear approaching his herd. The cows were lounging about, many of them laying down and chewing their cud. The bear casually wandered his way through them without alarming a single animal. Charlie was astonished at the cows’ indifference. The revelation, however, came afterwards when he followed behind the bear. Although his cows were very tame, unlike many ranch cattle, it was too much pressure when he rode through and the cows stood up to wander off. Furthermore, Charlie also knew that a grizzly bear was at the time killing yearling cattle regularly at his neighbor’s ranch, and the bear had to go through his own place to get there. Put together, these incidents were very puzzling and opened up many avenues of inquiry. After he retired from ranching, his interest in the bear conundrum took him to Russia to live in close quarters with brown bears in the wilds of Kamchatka, far away from the ranching

drama.¹³⁷

Kinship with animals

Kinship amongst humans, writes Marshall Sahlins (2013), is best described as “mutuality of being”. Charlie related his experiences with bears along similar lines after seven summers in the Kamchatka peninsula of Russia living in daily proximity with brown bears, which, like grizzly bears, are also *Ursus arctos*. The bears, especially those he shared his days with, were for him what Sahlins describes as ‘kinfolk’ or “persons who participate intrinsically in each other’s existence” (2013:ix). Charlie raised more than twelve orphaned cubs, returning them to live autonomous in a remote valley populated by wild bears. He felt like a parent as he accompanied the cubs into adulthood, protecting them from predator bears all the while.

¹³⁷ For a comprehensive treatment of the subject, I highly recommend reading Charlie’s work, especially “Grizzly Heart: Living without fear among the Brown Bears of Kamchatka”.



Figure 7.3 Charlie Russell visiting with a brown bear he raised in Kamchatka near his camp.
Photo courtesy of Charlie Russell and Maureen Enns.

Once Charlie released the older cubs to fend for themselves, it was apparent that their bonds endured. Sahlins refers explicitly to bonds that unite humans, and there are ostensible limits to the reciprocity animals can invest in these relations to the extent that relatives across species can, like kinfolk, “live each other’s lives and die each other’s deaths” (2013:ix). But it is nevertheless implicit in Sahlins’ exposé that kinship reaches beyond the realm of humans to bind them inextricably with other beings (2013:5-6). In addition, Charlie found that his respect for the wild bears he met on a daily basis elicited the same in

return.¹³⁸

Back to the Hawk's Nest: it is fair to say the notion of neighborliness with bears was not an innovation. While growing up, Kay, Bert's daughter, went with her father on his packing trips in the mountains to help as a camp cook. She and her sister Doris met bears in very different circumstances than their father had, however, and Doris' account of their youth speaks of playful animals rather than ghastly killers (Burton 1990; Burton 1995). Kay raised her children in the same carefree way, conveying to them that there was no reason to fret about sinister beasts on the prowl. Her husband Andy tells how in late summer, Kay would go picking berries with her little dog, and her trips often took her to patches where bears were already busy feeding on berries. The dog stayed between them, concerned that they were too engrossed to keep from bumping into one another (see Russell 1968). Kay did not mind the bears being there. Neither did the bears mind Kay. It was the dog that was concerned.

Family lore has it that in later life, she was often visited by a large grizzly bear. He would stand up at the door of Hawk's Nest and bend his neck to peer inside. Kay took this to be a friendly call by a curious neighbor. She would go on a walk with her dog sometime afterwards, being just as curious to find out what was going on in the bear's world. She did not try to get close to bears; she just did not go out of her way to avoid them while she went on walkabouts on a landscape she loved. It does not matter here whether a bear really 'visited', or, like her son John likes to tell about, that he sometimes escorted her. What stands out, however, is that the presence of bears, whether it was in the back of the ranch

¹³⁸ The photo above was taken by a companion of Charlie's while he was meeting with one of his grown cubs after it had returned to a wild existence was taken in Kamchatka, Russia.

or near the Hawk's Nest, did not threaten to breach any kind of safety zone. The Russells welcome their innocuous presence and the appearance of wild animals is so sporadic that they object instead to the presence of dogs that could intimidate them. This contradicts the principle that fearless large predators are destined to converge towards human habitation. There is no sign near the Hawk's Nest that bears have any compulsion to overwhelm humans like those bad-mannered ones that make the headlines. Surely they show curiosity and some of them occasionally seem to find comfort in Hawk's Nest company (one bear was known to wander up and sit down quietly on the porch joining the proceedings like a familiar neighbor). They are too busy procuring food to visit often, the Russells say, and the same goes for deer, elk and moose in the neighborhood, given that they do not find refuge in the proximity of humans either. Unlike the town-site in the Park, the Hawk's Nest attracts neither prey nor predators. And whatever 'attractant' a bear may find is put there deliberately. The birdbath, for instance, was built large enough (with a special back-scratcher) to accommodate a bear (see the photo below taken by Valerie Haig-Brown); yet bears do not linger nor have they yet raided the adjacent garden. As for the rest of the ranch, people circulate on it regularly; depredations on cattle are a rare occurrence and there is more likelihood of finding signs of wolves if one goes to a more remote area where human presence is not so prevalent.



Figure 7.4 Grizzly bear bathing near Valerie Haig-Brown's residence on the Russell place.
Photo courtesy of Valerie Haig-Brown

Clearly enough, there is something to be learned from the interspecies status quo at the Hawk's Nest, if only to dispel the axiom that the proximity of large predators inevitably brings about dire consequences. By comparison, conventional policies have had compounding perverse effects, triggering a chain of reactions that exacerbated the very problems they were intended to resolve. The problem, however, is that sympathy for wild animals has been associated with a complete blindness to the practicalities of coexistence. I asked a retired park warden about what he had learned about best practices to avoid bear conflict during his long experience in Waterton. Charlie's approach came up in the course of our conversation and the warden dismissed it as 'bear hugging'.

In the same register, Charles Jonkel, bear biologist and president of the Great Bear

Foundation in Montana (and occasional visitor at the Hawk's Nest), considers that "people singing to wild bears, walking around, and spending time with them" are "Bear Witches" (Jonkel 1999:3). And these witches are most wicked when they publish accounts of their nonsensical feats for personal gain, thus endangering the lives of people who might emulate them and even more so the lives of bears destined to be destroyed in the aftermath of an incident.

Charlie's experience of kinship with bears is thus construed in the professional bear milieu as transgression, and his counsel that bears are not the unpredictable beasts they are hyped up to be is somehow interpreted as a promotion of dangerous liaisons.

This kind of attitude on the part of professionals has been the bane of human relations with wild animals, counters Gay Bradshaw, a researcher in trans-species psychology: "Science and society are not tolerant of those who exhibit such ambivalence about human identity" (2012:52). Consequently, Bradshaw continues, Charlie's insight into the "intricate detail of bear etiquette" gets ignored and a vital lesson in "trans-species living" is lost to the people who have the most influence in policy-making.¹³⁹ Gay Bradshaw documented how the human handling of animals has caused severe post-traumatic stress disorders (PTSDs), especially in elephants (2009; 2012; 2005; 2006), and she has recently teamed up with Charlie to explore such connection in regard to grizzly bears exposed to many sources of trauma throughout their life: aversive training, relocation, 'hard releases' (with rubber bullets when a bear is released from a trap) and disrespectful handling while they are tranquilized. They hypothesize that the reasons for nasty encounters between people and bears can be readily identified; what is hard to understand, if the pathologies of

¹³⁹ See also: http://www.kerulos.org/news/archives_grizzly.html accessed Sept 2nd 2013.

elephants are any indication, is that beleaguered bears don't retaliate more often.

Some of the lessons to be drawn from the above interspecies histories are relatively simple. Interference with the dynamics of predation have been counterproductive in the first place: the irruption of elk and deer and their concentration in conflict zones like human habitations are directly related to a ban on the presence of predators. In the second place, traumatizing animals is not helpful if the objective is to get along with them. Another kind of counterproductive strategy is not so apparent. Scientific wisdom has it that the incidence of conflicts is particularly high near residences because of attractants like carcasses. On the other hand, many ranches, including the Russells', have always left carcasses in the remote parts of their range for grizzly bears and other animals to scavenge. The latest policy, however, has been to remove attractants from ranches altogether and in the spring of 2013, over sixty carcasses were duly removed from Twin Butte and Mountain View ranches – thanks to subsidies. In the wake of three successive April snowstorms, however, grizzly bears proceeded to kill a record number of calves – the uproar on the part of the ranchers who were worse affected was just as predictable. As far as Charlie is concerned, the carcasses that were removed would have fed the bears at that critical time when they emerge from their den; short of carcasses of wild animals or dead livestock they turn their attention to live ones.

Overall, the factors behind the incidence of depredation problems are predictably time-, site- and practice-specific. They are time-specific in the sense that they occur seasonally, especially in times of nutritional stress which in the previous instance was during spring storms; they are site-specific in the sense that they tend to occur at specific sites of habitat overlap, in the Poll Haven area during summer, for instance; and practice-

specific in the sense that some practices exacerbate depredations, for instance leaving vulnerable livestock like yearlings unattended at particular times at particular sites. Only rarely do large predators specialize in depredations regardless of these factors and go out of their way to rampage across the landscape. But in the event that a rogue bear becomes a chronic livestock killer when other foods are available, Charlie recommends (like his father Andy before him) the surgical removal of the culprit. The intervention is a concession to the imperatives of raising livestock, while recognizing it stems from a relational quandary about prerogatives. Conversely, it is rather illogical to reinstate a grizzly hunt that will most likely target benign bears that happen to fit trophy profiles. Then again, killing any bear (or wolf pack) is just as counterproductive in situations where human practices invite depredations to begin with. Unless these issues get resolved on a landscape scale – like the earlier quandary of managing grazing on a small ranch-by-small ranch scale – the prospects of a functional working landscape are very dim.¹⁴⁰

The quandaries of the Wild Law

Peaceful coexistence with large predators does not fit every conservationist agenda. Quite the contrary, some of the most ardent advocates of wilderness find the notion very troublesome. Mark (a pseudonym), a hard-bitten conservationist who lives near Beaver Mines west of Pincher Creek, is one of them. A veteran of many environmental battles, blacklisted by oil and gas, and timber companies, Mark has been branded a radical. In

¹⁴⁰ Beside the specifics of time, site, and practice, Bert Riggall would be quick to remind us about the era-specific dimension to the problem as well as the regional idiosyncrasies of bears. As part of their many profiles, then, animals are situated historical actors, and the dramas they partake in (improvisations really) change from one era to another, landscape by landscape.

2012, he organized ‘Timberwolf,’ an environmental coalition acting in defense of wilderness.¹⁴¹ Mark’s idea of the law of the land is a ‘Wild Law’ that assigns legal status to Nature and ecosystems as legal persons (Cullinan 2002). He is also a staunch supporter of the ‘big wilderness’ agenda of the Rewilding Institute (Foreman 2004). If it were up to Mark, the population of large carnivores would return to its original levels in order to restore landscapes (see Oliviera-Santos and Fernandez 2009; Soulé and Noss 1998).

There is a grizzly bear den on Mark’s land, which has piqued the interest of the NCC. The negotiations for a conservation easement had moved at such a slow pace, however, that Mark has gone ahead and declared his land a grizzly refuge. When I visited him, he was ready to hang his sign at the front gate. We went for a walk on his place and I asked him to elaborate on the new designation for his land. Mark was familiar with the key features of rewilding, the three C’s, core, corridors, and carnivores, necessary for maintaining the integrity of ecosystems.¹⁴² The first step is to protect large carnivores, reiterated Mark. If bears, wolves, and cougars are to survive, in his view, they need a lot more space than they currently have. A grizzly refuge on the edge of wilderness was his contribution. Mark is also an experienced outfitter and as we neared his tented camp in a lovely clearing he expounded on the realities of wilderness: a grizzly bear is not an animal to trifle with, he emphasized, and he had scores of alarming bear stories from outdoorsmen like him to prove his point.

Bears are not meant to live in the proximity of humans, it follows, and science, his

¹⁴¹ See <http://www.pinchercreekvoice.com/2012/03/timberwolf-revealed.html>, accessed April 2nd 2013.

¹⁴² See: <http://rewilding.org/rewildit/what-is-rewilding/> accessed Sept 4th 2013.

biologist allies would have him believe, was also on his side. That Charlie has got away with living with them in Kamchatka is actually problematic. In the end his stories undermine efforts to secure sufficient habitat for them. Regardless, Mark reiterated, stories of friendly bears will never convince descendants of European colonizers who have never known any other way than to persecute them.

How does he reconcile all of this on his private refuge? Before I could probe him about this, he remarked that he hesitated to use his camp anymore. Two years earlier, he had been sitting in quiet contemplation when a big grizzly bear ambled out of the forest and came directly towards him. By luck, Mark said, he had his rifle close at hand and he quickly fired a warning shot to frighten the bear before it got too close. Had the bear not left immediately, Mark feared he would have had to dispatch it to save his own life.

A key objective of rewilding is to make landscapes permeable in order to allow large predators to circulate between islands of protected habitat, providing corridors for connectivity. Presumably, rewilders realize that it is not possible to envisage rewilding vast parts of the continent without expanding buffer zones exponentially in the process. Promoting 21st century big wilderness while at the same time embracing old ideas about interspecies incompatibility, however, leaves them exposed to charges that they are willfully creating buffer zones dangerous for humans. Thus, advocates of wilderness are a divided lot in the face of a unified anti-bear front that has mobilized much more coherently around the same brand of predator hell-hole stories. People who resent the inroads of bears and wolves agree with Mark and the rewilding movement in one respect: wilderness is a distinct domain, and humans have had to concede some prerogatives to protect it. They see landscape permeability with a different eye, however, with a view that the onus is

on wild animals to behave when they venture outside their domain.

Self-fulfilling prophecies

During the public meetings in 2008 (see Chapter 5), the conservation officers reported that the incidence of bear problems was modest and had been steady during the last 30 years. In the regional Bear Management Area, the rate of interventions varied between one and seven yearly and officers intervened five times and relocated three bears in 2008. Since the Alberta Grizzly Bear Recovery Plan was implemented in 2008, however, the situation has degenerated markedly. Six bears were relocated in 2009 (Alberta Government 2010:3), but that number shot up to twenty-four the next year. And in 2012, the Pincher Creek Fish and Wildlife Office reported that thirty-eight bears were relocated after threatening public safety, attacking livestock or damaging property, and another four bears were euthanized.¹⁴³

After an incident in October 2012, Ryan McClelland, a Beaver Mines rancher, invited journalists to survey the damages to his property. The Edmonton Journal subsequently broadcasted the following photograph of a bear intruder:

¹⁴³<http://www.edmontonjournal.com/technology/Rancher+finds+nine+grizzly+bears+property+nigh/7452006/story.html> accessed March 31st 2013.



Figure 7.5 Photo of bear trap and damaged granary, with black bear, at the McClelland place, taken by photographer for the Edmonton Journal (see footnote below).

McClelland reported that nine grizzly bears had invaded his yard. They had vandalized his butcher shop and ripped apart one wall of his old granary (see photo). McClelland deplored having to carry a gun ever since to escort his three children to the school bus stop. Bears will soon maul or kill a neighbor, he predicted, unless the government comes up with better enforcement against delinquent bears. A spokesman for the Alberta Justice and Solicitor General expressed the government's concern for the safety of the landowner and his family and called for the immediate removal of the offending bears.¹⁴⁴

It makes sense to remove attractants from sites where the presence of wildlife is not wanted if the intent is to reduce the incidence of conflicts. The problem, however, is that

¹⁴⁴ See the same article as above:

<http://www.edmontonjournal.com/technology/Rancher+finds+nine+grizzly+bears+property+nigh+7452006/story.html> accessed March 31st 2013.

the onus for making adjustments to the presence of wildlife falls on people. Several programs like BearSmart¹⁴⁵ offer comprehensive educational manuals and clinics on conflict avoidance; and they help municipalities design bylaws to enforce preventative measures.¹⁴⁶ Municipalities in southwest Alberta, however, have no such bylaws. It falls entirely on provincial authorities to come to the rescue and control the damage, and on NGOs to offer subsidies to entice residents to take precautions. It seems absurd that a rancher would bring such predicament upon himself. But that is precisely the point. To attract nine intruders in one fell swoop out of an estimated regional population of 51 grizzly bears is a public relations coup that can be used against any proposal to entrench their immunity. A Minister in the limelight cannot side with an endangered species, not when an embattled rancher holds off nine grizzlies to protect his children. The Calgary Herald has since circulated a poll online to evaluate public support for the reinstatement of a grizzly hunt after reporting also that the population of grizzly bears in southern Alberta was much higher than earlier estimated.¹⁴⁷ Far from incongruous, the anti-protectionist strategy of ranchers like McClelland elicited a lot of sympathy and has received the full support of the pro-hunting Alberta Fish and Game Association. The reinstatement of the

¹⁴⁵ <http://srd.alberta.ca/RecreationPublicUse/AlbertaBearSmart/Default.aspx> accessed April 1st 2013.

¹⁴⁶ <http://www.bearsmart.com/becoming-bear-smart/community/bylaws-and-ordinances> accessed April 1st 2013.

¹⁴⁷ For the poll, see <http://www.calgaryherald.com/opinion/editorials/time+grizzly+bear+hunt+Alberta+Share+your+thoughts/7986159/story.html>, accessed April 1st 2013. As of April 1st, 43% of respondents was in favor of a hunt. For the earlier reportage about the grizzly bear status, see: <http://www.calgaryherald.com/technology/story.html?id=7978585>. For another view, see: <http://www.ctvnews.ca/canada/group-wants-alberta-to-bring-back-limited-grizzly-bear-hunt-1.1185223>, accessed April 1st 2013.

hunt would be a breakthrough insofar as it would demote a protected species. The limited hunt has otherwise little practical value in terms of demographic control. It pales in comparison with the 30% rate of mortality of relocated bears (Alberta Grizzly Bear Recovery Plan 2008:8), which, considering that thirty eight bears were relocated in 2012, could amount to a large proportion of their population.¹⁴⁸ At any rate, only two hunting tags were allocated yearly in the region before the hunt was closed in 2006. Besides, a grizzly hunt is a prestigious and very expensive affair. Advocates hope to raise a lot of money with a \$40,000 price tag attached to the privilege. A hunter who pays that kind of money, however, expects at the climax of a wilderness adventure to bag a trophy, perhaps a seven-hundred-pound male, not a delinquent sub-adult hiding in a grain bin. A wealthy hunter does not pay to do the job of a pest exterminator.

The ecological significance of a grizzly bear hunt

Bear biologists disagree about the impact of a hunt that targets adult male grizzly bears. Wielgus and Bunnell found that “[h]igher hunting mortality of older males coincided with higher numbers of potentially infanticidal, immigrant males” (2000:145). As a result, mother bears and their cubs were forced to take refuge in suboptimal habitat where they were less likely to thrive. Consequently, the study predicted, the hunt of adult grizzly bears is likely to reduce the overall reproduction rate of grizzly bear populations (Wielgus and Bunnell 2000). A later study in the vicinity of Waterton Lakes National Park, however, disproved these findings and showed instead that “hunted [grizzly bear] populations have

¹⁴⁸ Another study estimates that 38% of relocated bears die within two years. See: <http://albertawilderness.ca/issues/wildlife/grizzly-bears/archive/2012-06-19-high-number-of-grizzly-bear-removals-threatens-population-recovery-eng-news-release>, accessed April 1st 2013

greater recruitment than populations at carrying capacity” (McLellan 2005:154). Based on much larger samples, the results suggested “that if more males are removed than females, cub survival will be greater than if the sex ratio of the harvest is equal or favors females” (ibid).

The Blackfoot Challenge community initiative in Montana

A community project in Montana has proved it is not necessary to hunt grizzly bears into submission or to worry about the expansion of their population. Instead, their commitment to coexist with wild animals has attracted considerable material benefits. The mission statement of their initiative is similar to the NCC’s Project:

The Blackfoot Challenge is a private nonprofit organization whose mission since 1993 is to protect the natural resources and rural lifestyle of the Blackfoot River Valley (Blackfoot Challenge 2000).

The organization encompasses seven communities and 8,000 people, about the same as the combined population of the Pincher Creek Municipal District and the Cardston County. More so than the Waterton Park Front Project (WPFP), it is surrounded by wilderness, butting against the Continental Divide on the east side, while to the north lies the Bob Marshall Wilderness Area and further afield Glacier National Park. Its interface with wildlife is also identical. Eight wolf packs roam the area and it counts between thirty and forty grizzly bears (Blackfoot Challenge 2008:9). The population of large predators also seems to be expanding in that part of Montana, so much so that ranchers and biologists in

southwest Alberta suspect that bears and wolves migrate north from there and cause much of the trouble on the Canadian side.¹⁴⁹

Despite the rise in bears numbers, the Blackfoot Challenge program has reduced the frequency of conflicts with grizzly bears by over 90%, from a high of 60 instances of conflict in 2003 to fewer than a handful in 2010 (Blackfoot Challenge 2010:8).¹⁵⁰ Granted, it is not always an interspecies honeymoon. The Challenge faced a major crisis when a grizzly bear killed a big game hunter in 2001 (Burnett 2012:10). But instead of causing a revolt and triggering lawsuits (like their Albertan counterparts have threatened to do in such event), the event spurred the community into creating several task force committees to reduce the incidence of conflict (Blackfoot Challenge 2008:9). These have been busy on multiple fronts: one was put in charge of a campaign to pick up all carcasses and compost them at a central site – four hundred carcasses in 2011 alone (Blackfoot Challenge 2011:7). With the advice of wildlife biologists, ranchers opted to keep the landscape permeable for grizzly bears (Burnett 2012:10) other than a few safe zones. To that effect, another committee raised funds to construct electric fences around fourteen calving pens, which put a stop to the springtime depredations. The wildlife committee has also hired range riders since 2008 to monitor collared wolves from three local wolf packs and to do surveillance when they came into the vicinity of the cowherds. In 2011, there were no livestock losses under the surveillance program (ibid.).

¹⁴⁹ See: <http://www.calgaryherald.com/technology/story.html?id=7978585>. Accessed April 1st 2013.

¹⁵⁰ There was a slight increase one year, to a little over a handful when the same bear returned to the same homestead several times.

The Blackfoot Challenge also coordinates thirteen community education programs involving over 3,000 people at local, regional and national levels, from school children, to scientists, ranchers, hunters, conservationists, the Bureau of Land Management, the Fish and Wildlife Service, The Nature Conservancy, logging companies, and politicians, including the Montana state senators and the governor.

The Blackfoot Challenge promotes a working landscape dedicated to community-based conservation. Between private landowners, land trusts and public agencies, 231,795 acres of the Blackfoot River watershed (including 72,246 acres under the direct management of the Blackfoot Community Project land trust) are now under conservation management (Blackfoot Challenge 2011:4). Thirty years in the making, the Blackfoot Challenge attributes its success to “coalitions of the unlike” (Burnett 2012):

Using this cooperative approach, we address issues where roughly 80 percent of us agree, build trust, and use that trust to work on the other 20 percent where we disagree. This consensus-based approach is most effective when everyone is at the table, both voicing their concerns and fully committing to listening to the concerns of others (Blackfoot Challenge 2011:1).

From this nexus of social diversity, the approach to conservation veered from “biologist-centric” towards “partner-centric” (Burnett 2012:2; Neudecker, et al. 2011). Its implementation has aimed to circumvent “politics of expertise, lack of transparency and accountability, and inconsistent responsiveness to public concerns and issues [that] have made planning by agencies a superficial and top-down exercise” (Burnett 2012:8). Rather

than flounder in dissent, which distracts funders from joining the fray, these coalitions attracted powerful allies. When the Plum Creek Timber Company put a large tract of land up for sale, residents were distraught about the prospect of landscape fragmentation. The Nature Conservancy (TNC) stepped in as a potential buyer but did not act until a conservation plan had been agreed upon for the disposition of the land. TNC then bought and resold these properties to meet community objectives (Blackfoot Challenge 2008:5; Burnett 2012:5).

The Challenge addresses a broad range of issues, from drought response planning to the restoration of trumpeter swans. When monitoring reports showed that grass communities in riparian areas had degraded, ranchers partnered with the Natural Resources Conservation Service and retained the services of a consultant to help them devise individual grazing plans – including for the uplands. Ranchers subsequently implemented new grazing methods and began a program to deal with their noxious weeds problems (Blackfoot Challenge 2008:8). And the list goes on.

All these initiatives require funding, of course, and the Blackfoot Challenge receives it from private and public donors. The majority of the projects are funded with state, federal and foundation grants. And the positive results of the Community Project attracted a \$750,000 grant from The Nature Conservancy for an endowment fund (Blackfoot Challenge 2010:11). And despite a much more ambitious program, its operational expenses are a fraction of what the NCC spends on its own bureaucracy for the Project.

A Project demoralized

The community behind the Blackfoot Challenge had mobilized over several decades. Rural life in the Blackfoot River area was ailing for several reasons: poor profitability, declining production, ecological crises, a changeover of population, rising conflicts of values, and the fallout of unbridled development (see also Pearce 2004) – all very similar to the Alberta case. Instead of retreating to their respective strongholds, however, the protagonists, the Old West and the New West, chose to converge on common ground to elaborate a collective vision and pool their resources. With willingness on the part of the ranchers, the turnaround was rapid (a) to reform longstanding practices of unsupervised free-ranging of livestock and the indiscriminate killing of large predators; and (b) to relinquish the individualist creed in favor of a partner-centric approach to decision-making. Without resolving dissension amongst practitioners and the attending experts about a whole gamut of issues from the implications of the proximity of large predators to the necessity of livestock surveillance and grazing mobility, the Challenge would have had no traction at all.

During the last ten years, there has been a regular traffic of contingents of ranchers, scientists, government agents, and policy-makers from southern Alberta to the Blackfoot Challenge. They brought back the Blackfoot discourse and a few isolated practices, but, as this chapter has illustrated, conflicts have continued to spiral from bad to worse. In the next chapter, I will explain that this is not due to a more demanding challenge in Alberta – especially inasmuch as immigrant bears and wolves from Montana are said to be the worse culprits. Rather, in sharp contrast with the political goodwill that has bolstered the Blackfoot Challenge, after it had somehow recruited top tier politicians to its dialogical

undertakings, the conduct of natural resources management in Alberta makes no such concession to transparency. Political alignments spanning from local grassroots levels to the highest echelon of politics join in a diffuse array of networks that govern public affairs. At higher levels, political expediency is paramount. But from the ground up, and from who gets to speak at the local level, to who gets to be heard at the policy-making level, to who gets to influence decisions at upper executive levels, political alliances hinge on moral alignments.

Part IV Environmentalism and place-making

Chapter 8 Who gets to decide?

Following Foucault's principle of governmentality that knowledge and power saturate everyday life through the conduct of conduct (1991), Timothy Luke (1995:65) argues that "living became 'environmentalized', as subjects related with their history and biological life in new ways". Since the 1970s, subjects have been enrolled to think in terms of 'environment' as an object of concern that should be used in sustainable fashion (Luke 1999).

In the same vein, the concept of 'environmentality' refers to "a specific optic for analysing environmental politics" (Agrawal 2005b:226). For the sake of clarity in the following discussion, it is helpful here to unpack how Arun Agrawal explains environmentality. He attributes the emergence of environmental awareness to, and I quote from him (2005b:229):

- (1) the formation of new expert knowledges
- (2) the nature of power, which is at the root of efforts to regulate social practice
- (3) the type of institutions and regulatory practices that exist in a mutually productive relationship with social and ecological practices.
- (4) and the behaviors that regulations seek to change, which go hand in hand with the processes of self-formation and situated practices (Agrawal 2005b:229).

About key aspect (1): Agrawal found in his case studies that “a central and particular feature of the knowledges [...] was the genesis in and invocation of expert authority” (Agrawal 2005b:226).

About the locus of authority (2) in the making of environmental awareness: “It should be evident,” he emphasizes, “that the notion of ‘subject’ is not “in opposition to either *citizens* or *objects*. Our common sense meaning of *subjects* would be to see them as actors or agents. But subjected people are also subordinated” (Agrawal 2005b:165). Therein are the ambiguities which the environmentality analysis exploits to explore various rationalities: why some people join the ranks of those who care about the environment, and others decline.

About the actual emancipation of practitioners in (3): success hinges on the level of participation of complicit subjects in regulatory processes and their direct involvement in measuring the beneficial effects of improved practices (Agrawal 2005b:166).

About (4), the analysis hinges on a sort of positive feedback loop inasmuch as it proposes that appropriate behavior brings due rewards, thus “incorporating into [...] mentalities new propensities to act and think about the world” (Agrawal 2005b:167). And by way of regulation, pervasive change in ecological habitus is almost ineluctable: “Even if only a very small proportion of one’s daily experiences undermine existing understandings, over a relatively short period there may be ample opportunities to arrive at subject position quite different from those held earlier” (ibid.).

Implicit in Agrawal’s formulation is that the emergent knowledge (a) comes from outside sources since it invokes expert authority to define practices with an aim to

transform local perceptions; (b) disputes about its foundations (in Agrawal's case forestry science) fade in the course of the emancipation of subjects; (c) it informs regulations coherently in order to induce social change; (d) permeates the subjects' consciousness through the implementation of social practice, therefore "producing differences in the way subjects imagine themselves" (Agrawal 2005b:171).

By the criteria of environmentality, a shining example of environmental emancipation is the work of the Alberta Riparian Habitat Management Society or 'Cows and Fish' (mentioned in the introduction). To begin with, the organization created public awareness for the new conceptual category of 'riparian areas', aka the 'Green Zone', that which is transitional between "wetter than dry" but "drier than wet" (Fitch and Ambrose 2003:4). Researchers have demonstrated that riparian areas in Alberta had degraded radically in the last century, in terms of the vegetation cover, the populations of fish, amphibians, and insects, the quality of water, the rate of erosion, and so on. In 2002, the provincial assessment of riparian health showed that 40% of riparian areas are in unhealthy state and an additional 49% show impaired functions, which leaves very little in healthy condition compared with the hypothetical pre-contact status (Fitch and Ambrose 2003:14-5). Ranch cattle are directly implicated in much of the damage in prairie and foothills watersheds.

The Cows and Fish game plan is eloquent: the science is undisputed, the symptoms and the causes are apparent, and the ranch solutions are simple. Cattle have to be removed from riparian areas for most of the time. The good news for ranchers is that funding is

available for the technologies, fences and offset water systems, to keep cattle out. And Cows and Fish staff does follow-up health assessments.

The popular program has spawned dozens of watershed stewardship groups in Alberta. In a presentation to a U.S. organization with similar goals, the Quivira Coalition in New Mexico, the Cow and Fish representative explained graphically the implementation process in ways reminiscent of environmentalism:¹⁵¹



Figure 8.1 Slide from a PowerPoint presentation by the Alberta Riparian Habitat Management Society, or Cows and Fish, to the Quivira Coalition in New Mexico (see footnote below). Credit to © Cow and Fish”, www.cowsandfish.org.

¹⁵¹ See: http://quiviracoalition.org/images/pdfs/5889-Ambrose_Quivira2014a.pdf accessed July 26th 2015

The Cows and Fish field technician (with field glasses) is mediator and epistemological agent between scientist and practitioner. As the photo suggests, there is communication all around; it even approaches a dialogue. But the direction of knowledge production is unmistakable, the enlightenment going from the fountain of scientific formula to the practitioner's conceptual receptacle.

Perhaps the stroke of genius in the Cows and Fish initiative is a benign message that introduces a non-controversial environment figure, a fish, and by the same token does not exclude the agent of destruction, the cow. A vital function for the optics of environmentality, of course, is that the practitioner becomes ally to conservation. The greater public, for its part, pays for the mitigating measures (fences and solar pumping water systems) for cattle to continue grazing on private or public land, as the case might be.

This is a key factor, for the scenario is a far cry from the peasant forest councils studied by Agrawal whose function as epistemological agents was to convince practitioners to stint on forest resources, given that they also had the authority to enforce compliance regardless – with variable results. The distinction is a function of overall context for the conduct of conduct: the discretion in environmental governance is presently limited by the property entitlements accorded to ranchers. Ranch leaseholds predated the farming and urban settlement of Alberta (Evans 2004; Evans 2007a; Evans 2007b) and property rights in cattle have since trumped other prerogatives even on public lands – other than national parks. For the most part, the bovine-centric principles of ecological habitus have been immune to the gentle coercion to incorporate “new propensities to act and think about the world” in the ‘mentalities’ of practitioners, politicians, policy-makers and most

epistemological agents (Agrawal 2005b:167). The direction of environmental governance in that respect reflects more closely the dynamics of place-making, which I will explain again shortly. And the shifts in dispositions of habitus have more to do with epiphanies and initiatives in the personal sphere than with breakthroughs in the scientific milieu.

Also lacking in that kind of analysis is a capacity to appraise the moral freight of the knowledge, its conceptual categories, and the moral compass and horizon of everyone involved, knowledge-makers, epistemological agents, and practitioners.

The dynamics of environmental governance articulates with the process of place-making. The latter does not represent an optic about environmental politics specifically but it situates the where, who, and what of governance from the perspective of those directly involved rather than the institutions dedicated to changing them. Place-making specifies the makeup of place: the grounds of practice; the people involved as knowledge-makers, epistemological agents, regulators, practitioners, all potential environmental subjects; and finally the other ontologies that the novel conceptual category of 'environment' is intended to substitute for or articulate with. To begin with, as Daniel Murphy (2014:763) observes amongst Mongolian pastoralists, "environmental governance is [...] not the governing of the environment but rather an environment of governing in which human and non-human-derived actions are integral to the ecology of rule itself". The constituency is a lot more encompassing, which reflects also in the ways they co-produce one another: "we can trace the circulation of power, in its various human and non-human guises, through landscapes in ways that demonstrate the productive and material consequences of unequal agency" (Murphy 2014:760).

By the above definition, the NCC is a progeny of environmentality much more so than the subjects it signs up as partners. As for scientists, they are much more divided than what the concept of environmentality suggests. Ranchers, especially, were not compliant subjects at the beck and call of policy-makers and scientists. There is nothing exceptional in that, as Agrawal found out (2005a; Agrawal 2005b). But contrariwise to the article of faith of environmentality, these subjects recruited the kind of science that suited their designs. Then again, science-practitioners and policy-makers are subjects just the same. Bearing witness to that, David Mech (2012), renowned wolf biologist, laments the trend in scientific literature that spawns wolf saints to exorcise wolf demons; professor *emeritus* Valerius Geist, for his part, is unequivocal, raising the alarm that American wolf scientists are blind to the evils of Soviet wolves (see Chapter 8). Their arguments signal that the scientific literature, despite a reputation as a neutral venue, is an epistemological shopping mall for champions of all stripes, and that graduates fresh out of universities can be found tailor-made to serve as knowledge brokers for one mission or another. The right profile in animal politics is sometimes more important than academic credentials for getting a position as linchpin in the landscape affairs of the government.

A revealing map of networks

Witness the fiery community meetings mentioned earlier (see Chapters 5 and 6). In Latourian terms, the community spokesmen were *mediators*. They were positioned to weave specific strands of networks into stronger *alliances* (see Harman 2009:15; Latour 1987; Latour 1988). They were also positioned to exert pressure, weakening other strands

and aborting potential alliances that could be deleterious to their own brand of community interests. Outside speakers who made formal presentations, for their part, were *intermediaries*, and it was understood that they were mouthpieces. But those who became more involved in landscape affairs were at some point confirmed as worthy of alliances, or else dismissed or cast off as objects of curses.¹⁵² It is therefore arguable that place-making, with its flesh-and-blood place-makers, is involved in disciplining conduct in a more direct fashion than a diffuse ‘environmentality’.

Nevertheless, this does not preclude outside influence. “Places are nodes within relational fields”, writes Aletta Biersack (1999:81); “they are constructed historically in processes that spatially exceed the local and in which the extra-local is as constitutive as the local” (Biersack 2006:16). The historical dimension is important to emphasize here, given the atavistic sentiments expressed during the meetings. If the ovations were any indication, there was at least an appearance of consensus. The most vocal factions expressed the choice in stark terms to those in office. Mediators made it very clear that the inhabitants had evidence that some animals were bad through and through, and they requested that the worse culprits die before they begin picking away at humanity. The implicit challenge was: What will *you* dare do about what *we* are going to do?

Inhabitants of place, or ‘placelings’ in Edward Casey’s terminology (1996:19), are so deeply attached to their place that they *are* their place. The predominant factions behind the mediators who had worked their way to the top of the ‘politics of who gets to decide’

¹⁵² The predecessor of the current Fish and Wildlife biologist was considered too sympathetic to wolves and was harassed before transferring to another position elsewhere.

defended it on two fronts. An influx of the wrong animals disrupted the correct order of landscape. This animal front needed attending to and ranchers knew how to set straight a hierarchy of entitlements in the animal world. Their forebears had sorted out matters without fuss and no extra-local interference. On a second front, however, their fury stemmed from a pervasive reconfiguration of the gravitational fields that drive the moral spheres from afar. Local orbits resisted the pull of extra-local ones. The inclinations of outsiders had little pull – intermediaries were ignored unless they had political clout. Local leaders focused instead on reeling in influential people, Members of Legislature, Ministers, policy-makers, bureaucrats, and scientists to their side. An effective way to subvert extra-local influence was to switch team allegiance altogether but in name only. Newly-minted champions of conservation polished the rancher image and switched to a peace-making discourse for the benefit of the public at large. In short order the game paid healthy dividends.

Fueling Change for Cowboys and Carnivores

The above faction has mobilized a broad constituency of donors since 2008. Following the recommendations of ecologists for reducing conflicts with wildlife, the Waterton Biosphere Reserve allocated over \$200,000 of a federal grant (Environment Canada 2009) for upgrading grain storage and installing electric fences around calving fields, feed yards, and other attractants. An additional \$70,000 was spent for a ‘deadstock program’ to build storage bins for carcasses and for pickup services; and further funding went for a deadstock composting facility – \$50,000 for the facility and \$57,200 annual operating costs

(Romanow and Porter 2011).¹⁵³ These subsidies benefitted both the Twin Butte and Mountain View ranchers. In the spring of 2013, over one hundred carcasses were removed during calving season.¹⁵⁴

The Drywood Yarrow Conservation Partnership (DYCP) formed in 2008 began a Community Based Conservation Program in collaboration with the Miistakis Institute – an affiliate of the University of Calgary.¹⁵⁵ The partnership submitted a joint project to compete for the most popular conservation initiative in the country:

Ideally the project will result in fewer economic losses to the ranching community and maintenance of healthy wildlife populations through increased tolerance and a desire to share the landscape with carnivores. Ultimately, the outcomes of this project will touch not only those who are directly impacted by carnivores, but those Albertans and Canadians who place value on having bears, wolves and other species on the landscape.¹⁵⁶

¹⁵³ See: <http://www.watertonbiosphere.com/canadian-biosphere-projects.html> accessed October 12th 2013.

¹⁵⁴ As mentioned in Part 1, the early calving season is intended to produce larger calves in the fall to sell to feedlots as weanlings. In early spring when grizzly bears come out of their den, calves are particularly vulnerable. On ranches where cows calve later, the losses of small calves to grizzly bears are minimal.

¹⁵⁵ For information about the partnership see: http://www.watertonbiosphere.com/uploads/biosphere-partners_5_784509087.pdf accessed Nov. 23rd 2013.

¹⁵⁶ <http://www.fuellingchange.com/main/project/148/Cowboys-Carnivores>, accessed Oct. 20th 2011.

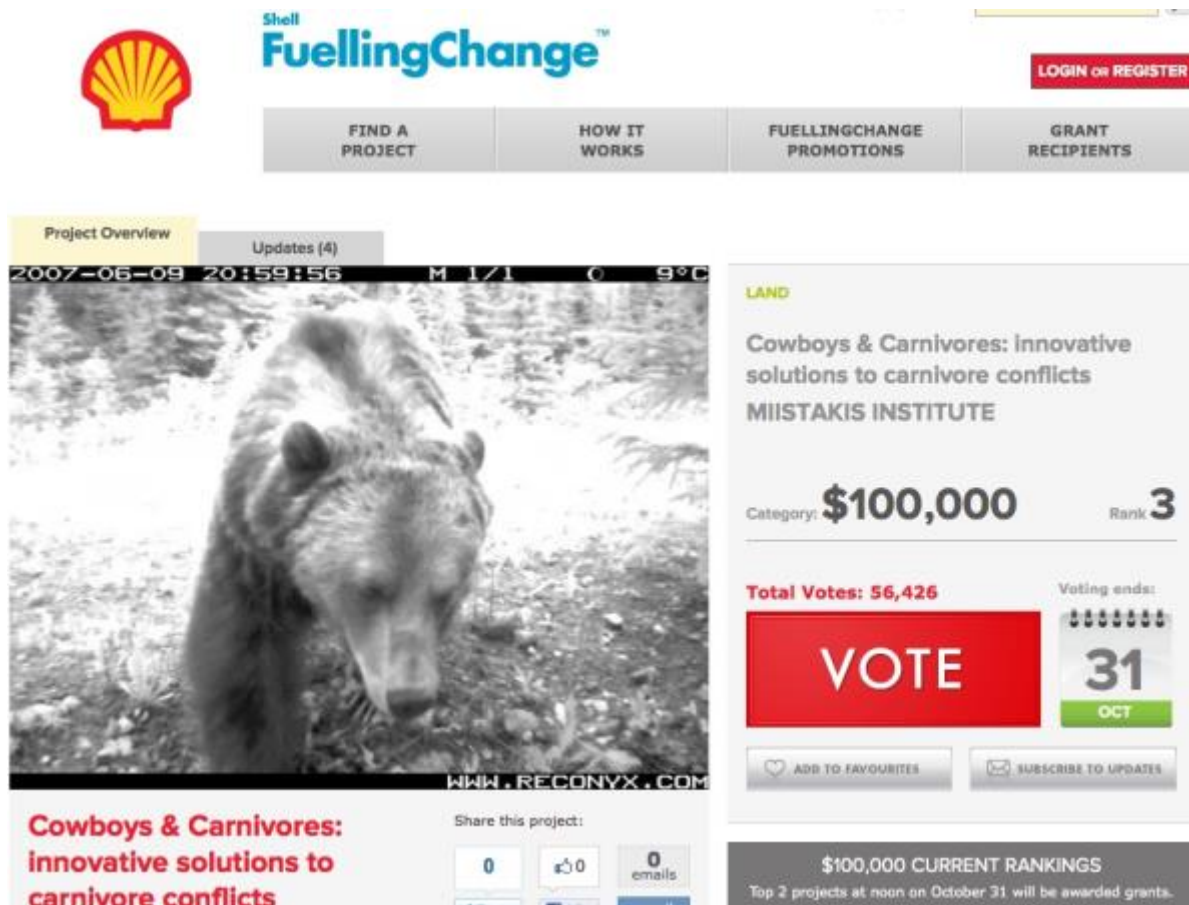


Figure 8.2 Canvassing votes for Cowboys and Carnivores (see footnote below).

The project came third, just short of winning one of the \$100,000 prizes for the two most popular submissions. The project received a consolation prize of \$10,000 from Shell Canada, and the Alberta Ecotrust granted the DYCP two years funding in 2010 (for \$24,000) and in 2011 (for \$30,000), and the Wilburforce Foundation contributed \$15,000.¹⁵⁷ The immediate DYCP beneficiaries were a few ranchers living in the Drywood and Yarrow watersheds.¹⁵⁸ When not in the limelight, the same participants organized

¹⁵⁷ See: <http://www.albertaecotrust.com/node/446> accessed April 28th 2013.

¹⁵⁸ See: http://www.watertonbiosphere.com/uploads/biosphere-partners_5_784509087.pdf accessed July 20th 2013.

workshops with the Alberta Trappers Association to hear the latest rationales about eradicating wolves and to train in the arts of trapping them.



The image is a screenshot of the Alberta Ecotrust website. At the top, a video player shows two bears walking away on a dirt path in a grassy field. The text "Walking the road to sustainability together." is overlaid on the video. Below the video player is a navigation bar with links: Partnership, Environmental Grants, Capacity Building, Community Collaboration, Results, and Support Us. A green banner below the navigation bar reads "Welcome to Alberta Ecotrust". The main content area features a project titled "Cowboys & Carnivores: monitoring the interface between agriculture and carnivore habitat" by the "Mistakis Institute for the Rockies". The project description states: "Landowners in SW Alberta share the landscape with large carnivores; as a result, interactions between the ranching community and carnivores are common. Grizzly bears are attracted to grain bins, silage, desirable agricultural fields and carcasses left on the landscape. These interactions often result in an economic loss to the landowner and may lead to safety concerns. Wolves occur in the area and are involved in cattle predation, again resulting in an economic losses to landowners. These conflicts often result in". To the right of the description is a box with project details: "Major Project Grant", "Year: 2010", "Cycle: Fall", "Amount: \$24,000", "Visit grantee's website" (with an external link icon), and "Monitoring Director: Leona Gibb". Further right is a "DONATE NOW" button with a green leaf logo and the text "Live Green, Give Green". Below the button is the "Watershed PROTECTORS" logo.

Walking the road to sustainability
together.

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Welcome to Alberta Ecotrust

 **Cowboys & Carnivores: monitoring the interface between agriculture and carnivore habitat**

Mistakis Institute for the Rockies

Landowners in SW Alberta share the landscape with large carnivores; as a result, interactions between the ranching community and carnivores are common. Grizzly bears are attracted to grain bins, silage, desirable agricultural fields and carcasses left on the landscape. These interactions often result in an economic loss to the landowner and may lead to safety concerns. Wolves occur in the area and are involved in cattle predation, again resulting in an economic losses to landowners. These conflicts often result in

Major Project Grant
Year: 2010
Cycle: Fall
Amount: \$24,000
Visit grantee's website [↗](#)
Monitoring Director: Leona Gibb

DONATE NOW

Live Green, Give Green

Watershed PROTECTORS

Figure 8.3 Canvassing votes for Cowboys and Carnivores (see footnote above).

The whereabouts of place

Initiatives like the Drywood Yarrow Conservation Partnership could be dismissed as superficial makeovers. In the light I have presented them, they seem to breed deceit. But that would be condemning them because of this notion that the conformation of places is firmly set. Arletta Biersack (2006:16) denotes 'place' as 'constructed'. But the building analogy is problematic. Places are not erected by following some blueprint, Tim Ingold (2000:199) argues. Since landscapes – and the places nested therein – are dwelled in and always 'a work in progress', the relationship between land and people is 'history congealed', he adds (2000:150, 199). A place, then, is a 'locus of experiences' from whence the landscape unfurls. Some theorists take exception to this view of place, dismissing it as 'localist' and arguing that it breeds petty nostalgia. Yet, practices of yesteryears should be emancipated, in their view, given that they are likely "out of joint" with nature and that "inhabiting is more than a human affair" (Hinchliffe 2002:207). But the affairs of landscapes are inextricable from those of place, the sense of which is, in this case, firmly embedded in parochialism while high-rank place-makers sing the virtues of a "global sense of place" (Massey 1997; Massey 2006).

A parochial kind of place-making enfolds memories of an old order. It keeps recycling to neutralize extra-local gravitational fields. Places are not the product of random snowball effects either: they gather strands of networks, keeping some and shedding others – dissidents are discarded to keep a sense of place from unravelling. Granted, a place can be challenged to the core and destabilized. And there are no maps on how to pilot through that kind of tumult. After a grizzly bear killed a hunter locally, the community

leaders of the Blackfoot Challenge opened up channels of communication instead of waging war. The leading faction here, however, operates on two registers according to two modes in contradiction: a mode of reconciliation on the register of public discourse and a mode of radical defense on the register of private rights. This high-wire act has been going on for a few years, anchored in divergent relational fields.

The academic definition of place has shifted from a notion of site in space to one of process in time. Tim Ingold (2006:13-14; 2007a; 2007b:35) further argues that places are 'meshworks', and these are more readily deciphered through a 'history of lines' than by contemplating a constellation of nodes. Granted, the makeup of networks and meshworks is a matter of theoretical interpretation whether the first are all about formal nodes and the others about informal webs (see also Escobar 2000; Escobar 2001; Escobar 2008; Harman 2009).

Bellwethers of change

On the scale of social units, identifying those that are the most pertinent for tracking social change is problematic. In addition, categories such as ranchers, conservationists, bureaucrats, scientists, and so on, are at once convenient clusters and hazardous descriptors. I use them with trepidation although inferences about ranchers, for instance, flag significant attributes that have endured over time. J. W. Bennett (1969) recognized in ranchers a profile of attitudes that are still present. But categories of that kind, especially in terms of dispositions, do not easily signify entire communities, especially now that the cohesiveness of rural life has been carried off by the traffic of social networks. People are

rather involved with diverse people in connected ways like those of their urban counterparts. Sloterdijk (2011) refers to such social assemblage as “bubbles”, “spheres”, and “envelopes” (see also Jones 2005; Noys 2011). In this way of thinking, the locus of experience of the protagonists I have highlighted belongs more and more to a space of neighborly existence with self-contained moral atmospheres than that of their occupational pursuits. Sloterdijk (2011) speaks about contemporary society as “social foam” due to its contiguity of solitudes, in proximity and yet in connected isolation, which ostensibly prevents friction from escalating too often into conflict. To make sense of this effervescence, a meshwork approach, with emphasis on ‘work in progress’, offers a more comprehensive alternative to monolithic/static notions of communities and identities – even as a web within networks. It lends itself to tracing the informal governance of place by following the conduits of alliances that breach artificial boundaries, especially those between categories of subject-makers and subjects. Scores of such instances, trajectories towards isolation or conjuncture, feud or alliances, recruitment or disbandment, are significant bellwethers of change.

With a network approach, going about finding who gets to decide what is good, as Mol (2002) puts it, begins with identifying key people, often mediators, and assessing their strategies. Tracing the ramifications of their influence may point towards a ‘culture’ of sorts from which decisions emanate. But the process is open-ended and it does not begin with the premise that there is such a phenomenon as an integral point of reference, a ranch culture for instance. As it turns out, the ramifications of these influences are pulling these places in all kinds of directions, far from such a core.

In my earlier exposé on ecological governance (see Chapter 3), I explained that everyone involved in the landscape valued the conservation of the range in theory, but in practice conflicts of interests impeded the progress of the NCC Project. The trend towards attrition in the continuing operation of autonomous ranches will bring relief in this regard, although I emphasized earlier in this chapter that the NCC was missing opportunities to prepare for the transition to a more integrated landscape under NCC management. Wildlife, on the other hand, did not even appear in the clauses of conservation easement contracts, for the NCC has washed its hands of responsibility for managing the ranching-wildlife relation. In its defense, it could be said that the impetus for a change about conservation was, from the onset, more likely to come from the gravitational fields of place-makers than from the cognitive engineering of environmentality.

To explain this, I have problematized its scientific assertions and, second, I have demonstrated that the implementation of environmentality is subverted socially at multiple levels, from the bottom up. In the first instance, let it be very clear that I am not attempting to invalidate one body of science or another. Rather, I am pointing out, as I have done throughout the thesis, the contradictions within and between bodies of science that hamper the NCC Project or any such initiative at the tactical level. In the second instance, as it pertains to the permeability of environmentality, the technologies of government, in Agrawal's foulcauldian terminology, are countered by those of place.

In order to track down who gets to decide, I proposed that place-making is one way to theorize a counterpoint to environmentality, but, as I navigated through its theories, it became apparent that it also has to be approached on a case-by-case basis with a view that

place-making is provisional. As I proposed in the introduction, place-making is about brokering realities and knowledges.

The previous chapters illustrated several avenues for improving interspecies relations between humans and wild species. In this chapter I return to the fundamental question of decision-making to assess the efficacy of the Nature Conservancy's approach. In a nutshell, the NCC has two key principles of operation at the strategic level: the organization gets leverage in landscape affairs through the acquisition of property rights, and it delivers on its promises in a non-confrontational manner (Freedman 2013:5). For further guidance at the strategic level, the NCC relies on the best conservation science available at the tactical level.

The contrast between Part II and Part III of the thesis shows that grass politics differ greatly from animal politics in terms of the dynamics of decision-making. Put simply, the first concern plants, stationary entities to a large extent a private matter for whomever has land property rights. On a conventional ranch, there is no outside interference in the utilization of grass on private land so grass politics are confined to Public Lands, accessed by ranchers through government grazing leases and grazing allotments in the upper foothills. The dynamics of animal politics differ in that they concern wildlife, entities that roam far and wide across ranches and public lands, and remain property of the state, which grants rights of capture through hunting permits or protected status to species of concern. Animal politics, or decision-making about the status of wildlife, considered game, pest or protected species, is a very public and controversial affair. The same goes for the rest of the environment, water, air and soil. What role does the NCC play in these decisions? I will

further explain here the very different interfaces that occur between key actors and agencies.

Animal Realpolitik

As an illustration, the following excerpts of an interview sum up the politics of who gets to decide on strategies towards large predators. Shortly after a Community Based Conservation Program for the area had been announced with great fanfare, I met with the senior wildlife biologist working for the Fish and Wildlife Division (FWD), a partner in the initiative. I wanted to find out how the surge of public concern for the conservation of carnivores had affected FWD policies. G. H. was a relative newcomer at the Pincher Creek FWD office and was still casing the territory – he was a graduate from an agricultural science department, he explained, although he had been hired as wildlife biologist. When I met with him at his office, G. H. was very guarded: “What are you getting at with your academic study?” he asked, “what kind of information are you looking for?” He reformulated the same kind of question several times, and my answer stayed the same: as part of my research, I was interested in the policies of the Fish and Wildlife Division. Instead of answering it, G. H. warned that ranchers were very protective about information concerning their practices. Consequently, he must wait until he “gets the nod” before releasing it.

The authorities, he explained, had formed a Predator Advisory Group made up of ranchers who were reluctant to share details about their “private affairs”. He was trying to balance the interests of ranchers with those of wildlife but he made it clear that he was

definitely an advocate of the ranchers. He would disclose more information only if he knew that I was on the “right side”.

That said, the meeting went on: “We, the Fish and Wildlife people and the ranchers, don’t want to open a can of worms”. Avoiding scrutiny was paramount: “It is better to stay quiet and deal with wolves in ways that ranchers feel are appropriate”, he said. Impression management would do the rest: “The optics are about the first cut, the first perception, and it must be managed in order to service certain interests”, he explained. “The public is apathetic”, he added. “We are lucky that the public is not really in on it”.

The government biologist catered to a specific faction of ranchers: “Some ranchers get invited to important private meetings with authorities and others are not,” he stated. “On some issues ranchers come together and on others they divide”. Positions in advisory committees were by appointment and the participation to meetings was by invitation only. But who appointed whom, *really*? It was not clear where the regional authorities got their cues from and whose directives dictated the policies.

The government biologist’s top agenda was to clean up the “bad blood” that had spilled between ranchers and the Fish and Wildlife Division. He assisted the ranchers and for that, he explained, “a rollout of community consultation was necessary”, a rather puzzling statement since our conversation suggested that he addressed the concerns of a self-appointed proxy. The greater public had obviously no knowledge of the measures that were taken to ‘maintain’ healthy wildlife populations and was kept blissfully unaware of the double-entendre in this discourse. At the time of the interview, the Fish and Wildlife Division had just finished eradicating the Bob Creek wolf pack (see Chapter 6). And it

turned out that the handpicked faction of ranchers from the Twin Butte area, every one of them ardent proponents of the grizzly hunt and the drastic elimination of wolves, was the one constituting the Community Based Conservation Program. Its leaders were NCC lessees.

Spin doctoring: Take One

Shortly after, the Cabinet of the provincial government sent a fact-finding mission to Twin Butte about grizzly bears. The principal emissary was Evan Berger, soon to be Minister of Agriculture and Rural Development, himself a rancher. I was inadvertently invited to the meeting by the appointed coordinator of the community initiative who was not well acquainted with local animal politics. Thinking that it was a genuine public event, I extended the invitation to Charlie Russell. However, the only people present belonged to a single faction – the dominant one, of course. Also, the local representative of the Biosphere Reserve, Larry Frith, made a brief appearance but left as the meeting convene and nobody from the NCC was present. As it turned out, the faction leaders did furtively advise the Fish and Wildlife officials that the both of us were also badly miscast for the present performance. Therefore, just before the mission left the meeting venue for a tour of local ranches, G. H., the aforementioned Fish and Wildlife bureaucrat, publicly asked Charlie and me to leave the proceedings. The tour afterwards was carefully choreographed and the government spin-doctors dutifully recorded the highlights on film to bring back to the Cabinet in Edmonton. The crowning moment was a diatribe by one of the faction leaders –

an official NCC Champion of Conservation – castigating policy-makers for putting a moratorium on the grizzly bear hunt.¹⁵⁹

Spin doctoring: Take Two

A vivid example is a promotional video produced by the Nature Conservancy of Canada that features a local rancher as a ‘Conservation Champion’ from Twin Butte country. Standing beside his horse in a classic cowboy pose with his thumbs hooked on top of his chaps, the champion shows off his rangelands for the world to see. His praise of the NCC deserves to be quoted:¹⁶⁰

It is pretty pristine because all the animals, plants and forages are here that were here one hundred plus years ago . . . We’ve got good populations of animals that are rare in other areas of Canada, grizzly bears, wolves, cougar . . . It’s ranching heritage all wrapped up together . . . This is some of our private land that we have an easement written on it with the Nature Conservancy of Canada. We agreed on not doing things like subdivision and gravel pits and we’re paid a fee for not having that development right . . . Cattle are still on it, that is acceptable practice, and fences that are wildlife friendly so that they cross easily. Those things are important for us also.

¹⁵⁹ Note to the reader: I was not present on the tour following the meeting, but a dissident insider who was on the tour informed me about the proceedings on the condition that my source remained anonymous. The reason given for my expulsion was that I was “liberal media”. Secrecy has been a pattern throughout my research: tentative whistle-blowers preferred to remain silent in public for fear of getting ostracized or, in the case of public servants, for fear of losing their employment.

¹⁶⁰ See: <http://www.youtube.com/watch?v=NX2zJ3G0iOA> accessed Oct 23rd 2013.

We agree with the NCC on those stipulations so it's been an easy partnership for over ten years . . . I think other ranchers in the area are realizing this also . . . [the NCC is] the best thing going in this area. There is an old saying if it isn't broke don't fix it. That's where we're at on this property. Hundred years of ranching in this area, ranchers have found ways to work around grizzly bears and wolves and not only get along with that wildlife but enhance their habitat so they thrive too. So we really hope we can still maintain that lifestyle and stay here for future generations.

The message is that "writing an easement on the land" guarantees discretionary powers at perpetuity. It prolongs one hundred years of uncanny ability on the part of local ranchers to "work around grizzly bears and wolves". Of course there is no hint about the mixing of old metaphors with new ones, and that to "get along" means in an underhanded way that settlers systematically shot any large predators sighted in the proximity of their homesteads or near their herds. In return for his endorsement of the NCC, the champion gets to enhance whatever habitat he owns or leases, as he sees fit, of course.

If it were left to him, the local populations of these animals would get a lot thinner. The champion – a lessee of NCC land – happened to be the main organizer of the fact-finding tour where he performed the diatribe showcased by the future Minister's spin-doctors. He operates the Twin Butte Bear Tours where his customers "come to get the real story"; he also extols in community meetings the virtues of the "shoot shovel and shut up" approach to bear conservation (see Chapter 5); he recently convened a public meeting to announce that his rodeo friends from the nearby Piikani First Nation were coming to shoot

grizzly bears on his place to help restore the law of the land; he lobbies the Municipal District Council for wolf bounties and began his conservation career by shooting an elk that was raiding his haystack, delivering it at the doorstep of the National Park Superintendent. So his list of credits in the local arena of animal politics goes on. In other words, he and his acolytes are the antithesis of the leaders of the Blackfoot Challenge.

The NCC is alert to the subterfuge. On the face of it, the organization is complicit and misleads its own constituency. However, it has avoided controversies that could have aborted the Project, so the rationale goes, and, as one NCC official put it, the organization has embraced a one-hundred-year approach to conservation. The better part of valor, then, is discretion, and the NCC has been operating from the sidelines, waiting perhaps for its turn at the driver's seat. The bottom line, however, is that the NCC has no comprehensive plan like that of the Blackfoot Challenge for dealing with local issues.

Conclusion

I have referred to the writing of my research findings as an ethnography of landscape. Early on in the thesis, I borrowed from geographer Dennis Cosgrove the notion of landscape as a way of seeing. For Cosgrove, reproducing a landscape in painting or in any other media accomplishes much more than revealing what is factually out there available to the observer's eye.

Perspective is thus not happenstance at all, nor is what it produces politically innocent. While appearing benign at the surface, this kind of nature, Rocheleau and Roth suggest, is “shot through with power” (2007:434); hence it is necessary to “see multiple” to track who exerted power and how (ibid.:433). With that in mind, I have surveyed the many agendas that were shaping perceptions of landscape in the present case. Yet at the same time, life goes on that does not entirely follow the script of landscape politics. Hence, I submitted that aside from its virtual definition as ways of seeing, landscape reflects, above all, *ways of engaging*.

My purpose has been to examine situations where the agendas of conservation and ranching converge on the same landscape, and I focused especially on their respective types of engagement with other species. Depending on the place and time in history, ranchers have been considered the bane of conservation or its longtime allies. Forty-five years ago, John W. Bennett (1969), while studying the cultural ecology of the Canadian prairies, characterized ranchers as the epitome of conservation-minded land users. I make no such generalization, in large part because of the heterogeneity within the ranks of the various protagonists, ranchers, conservationists, and scientists. Scores of contradictions

revealed instead that the ways that these people engaged with landscape framed and expressed eclectic worlds, the makings of which were also recruited by others to story forth with – including scientists. Hence the multiplicity of ontologies set up to enact discrete realities, as Annemarie Mol puts it (2002).

To the objection that I introduce esoteric speculation with this turn to multiple ontologies, I can only counter that I have arrived to it from a practical standpoint. It is not a matter of suspending judgement and collecting claims about reality and adding them up. Aside from those that were made idly for strategic reasons, the claims I documented came from credible sources, scientists and practitioners who had reputable track records. Granted that I was on the lookout for variance, I was also attentive to matching sources of evidence. About the subject matter of conservation, be it plants, livestock, riparian habitats, bears or wolves, I gleaned evidence from their respective sciences in parallel with the experiences of practitioners. I aimed to elucidate commensurable bodies of knowledge, while pointing out also the friction at their interface. Aside from the trial and error process of practitioners, the multiplicity of ontologies arises from the particular workings of laboratories, experimental plots on research stations, remote sensing technologies, geographical information systems, and the likes, that secrete realities, as Latour and Woolgar put it (1979). On the practical register, there was no solid epistemological ground for the Nature Conservancy upon which to plot a course for its conservation actions. It got more unwieldy from there, considering that processing those realities, as I have described thematically, are the various politics, grass and animal politics in particular, which, in turn, get folded into the politics of place.

Having ranched in southern Alberta for a decade in the 1980s, I found it remarkable upon returning how much the outside world had pervaded the affairs of place. Dual performances had become a norm, with high-profile place-makers extolling the merits of biodiversity for the greater public, and at local community meetings reaffirming that the icons of conservationists were dispensable. For its part, the NCC bureaucracy tried to placate those who were discontented with the goals of conservation. As one official suggested, the organization soon realized the wisdom of a one-hundred-year perspective for the project. It is presumably just a matter of time before a more comprehensive conservation plan could be envisaged: the expiration of lease contracts, a change of ownership of the remaining ranches after intergenerational transfers, all of which reflects the uncertain profitability of ranching enterprises in that part of the foothills.

Appraising the contests over both the material and relational makeup of landscape was rather like peering through smoke and into mirrors. Diane Rocheleau (2015) speaks of a “fog of greening” in the Chiapas rainforest where governmental officials and ENGOs pull together their resources to create a jungle Disneyland. In southwestern Alberta, however, collaboration between the state apparatus and non-governmental organizations betrays the kind of ambivalence that conceals longstanding vindictiveness. Each party partakes of its particular brand of ecology, vying for influence in the emergent polity of privatized conservation.

Moral compasses

In the case of the Blackfoot Challenge, an emergent polity mobilized into a unified alignment in ecological morality that cut across social distinctions. As its spokesmen put it, the 'partner-centric' approach to conservation was superior to the conventional 'biologist-centric' one, which I take to mean that, short of partnering with the knowledge of those directly involved, the knowledge of experts interferes instead in the affairs of place. Instead, a 'coalition of the unlike' emerged (Burnett 2012). That kind of mobilization is ostensibly what the study of place-based environmental governance had detected in the implementation of the Waterton Park Front Project (McCuaig and Quinn 2011).

In the latter case, my research proposes instead that the emergent polity there was divided along the lines of ecological moralities. Fleeting alliances were symptomatic of this divisiveness. Most remarkable were cases that momentarily allied members of the ranching and First Nations communities. In one instance, a high-profile local spokesman for ranchers convened a meeting at the Twin Butte Hall to announce that he had recruited members of the Piikani First Nation to shoot the grizzly bears that haunted his ranch. The rancher eventually guided his rodeo friends from the Piikani reserve to shoot a bear. The salient point, however, was the public display of flaunting the law and goading law officers to take action against members of a First Nation. Furthermore, a subplot to this action was that a member of the Kainai First Nation, southern neighbors to the Piikani, reached out to Charlie Russell, known for his bear advocacy. The Kainai member, himself a hunting guide, expressed his concern that First Nations might be drawn into a 'white-man dispute' that would bring disrepute and no end of legal troubles. Foremost, he deplored the fashion in

which this sort of killing betrays the bond of respect and trust between First Nations and the grizzly bear, master of the plains going far back in time. Understood was that the fellowship of Charlie with bears expressed a similar kind of kinship. Thus put together, plot and subplot saw moral alignments between unanticipated allies in the conduct of interspecies relations, which could not be foreseen through the conventional lenses of cultural identity.

Those who engage in close interspecies relations – other than with pets – are often considered suspect. A conventional scientist cringes at the notion of ascribing personhood or sentience to animals for fear it might lead his discipline into an ontological wilderness. It is the norm in science-making to police interspecies relations so that such closeness does not occur that would corrupt proper methodological protocols. The discourse of wildlife biology speaks of harvesting animal population according to stringent principles of sustainable use. And to anything that people covet and compete for, it is convention in political ecology to attach the language of ‘resources’ (see Bryant 1992; Bryant and Bailey 1997). Animals thus become the stuff of harvest regardless of the relationships other people nurture with them. And apart from the grievances of the animal rights movement, it is the underlying *a priori* human prerogatives that are deemed objectionable, with its tendency to reduce any living matter to objects for human consumption.

Again, it is at this moral watershed that science-makers part ways. Several biologists shared their concern about the cloud of suspicion that hangs over professional scientists who are receptive to the notion of a sentient multispecies collective. This was despite the movement in some quarters of conservation biology whose leading scientists

make direct reference to the moral imperative of their rewilding enterprise (see Soulé and Noss 1998). In the context of the Alberta case studies, such sympathies were for the most part kept covert, which, of course, limited their potential influence. Those scientists who expressed them overtly were more likely to be ostracized, like in the case of the COWS initiative. Conversely, the science-makers who were the most vocal and sought after for statements in the public media expressed unequivocal support towards radical measures against encroaching wildlife. As I pointed out in the introduction and the previous chapter, some also improvised themselves as gate-keepers.

In any event, conservation theory does not clearly reveal itself in practice as readily as the discourse of its proponents would suggest. Therefore, I single out social practice directly as a litmus test for the conduct of conservation rather than the associated 'mentality' component of governmentality that ostensibly informs it.

Landscapes as bounded social histories

The rules of conservation, whatever their intention, do not necessarily encourage appropriate behavior within dedicated spaces like Parks. But the focus of my study has been outside the boundaries of formal sites of conservation. The histories of human/animal relations and their profiles of sociality are much more relevant, if one is to become acquainted meaningfully with the most varied fauna, than an inventory of species. To find out about sharp edges of landscape sociality, one needs simply look across the barbwire fence of the National Park into ranch country. Bears, wolves, wild herbivores and other species have vitally different behavior there; even grasses follow distinct growth

patterns due to different patterns of usage. And although wild animals circulate back and forth over these institutionalized edges, as species they seem to express the distinctions of landscape engagement more than do human counterparts encountered here, who are more entrenched in their ways.

The edicts of law reflect moral status on an interspecies scale. It is apparent that human prerogatives can be applied most ruthlessly on lands held in private hands where livelihoods are drawn directly from nature as a body of resources. Anthropologists and historians who are advocates of ranchers take exception to this view, and my answer is that, contrary to the essentialist notion that ranchers are conservationists by practice and disposition, I would emphasize here that, as landowners, ranchers have broad discretion in the matter and for that reason I have illustrated how human/animal conduct varies across the board from the imposition of a bovine supremacy to the negotiation of interspecies kinship.

In this project, it was my purpose to find out the significance of an alternative mode of conservation recently adopted within this ranch country promoting the concept of 'working landscape'. The contrast with the established 'hands-off' mode of conservation is remarkable in several respects. Foremost, the cosmetic aspect of conservation has been at the foreground of my inquiries. For every theme I have visited here at the intersection of ranching and conservation (land property, range management, wildlife issues, etc.), I explored the interplay of political and moral issues. From the outset, I focused on the contrast between conservation discourse and actual practice. Beginning with the contracts binding the various partners in conservation, dissonance was omnipresent in its discursive,

contractual and practical forms. This made it vital for me to approach directly what was happening on the ground, and as an ethnographer to consider how other approaches, like those of sociologists using questionnaires, or natural scientists using remote sensing technologies, have engaged, perhaps unwittingly, perhaps deliberately, with the political and moral makeup of the landscape of interspecies engagement I set out to study.

As for the future of conservation in that particular ranch country, it is a fair question to ask whether experience will help the Nature Conservancy smooth out its contradictions. Suffice it to point out that the current lack of forthrightness in coping with the politics of place suggests that more cosmetics are in the offing.

In order to make an assessment, I proceeded instead to focus on the basics of conservation, since it represents a type of custodianship that aims to mitigate the growing tendency of human interventions to overwhelm the natural world. In a phenomenological sense, the conservation movement reflects the human subject's soul-searching to find out more about life as a whole and to nurture the roots of one's own existence.

Yet, the Nature Conservancy literature proposes that implementing conservation amounts to a simple method: buying property rights, the purchase of a portion of nature by *bona fide* agents therefore insuring its protection in perpetuity. I submit instead that preoccupation with acquiring property is a recent permutation of conservation at the macro-scale. Some argue that this latest manifestation is hand-in-hand with neoliberalism (Vaccaro, et al. 2013).

It is nevertheless vital to recall that at the micro-scale, had the NCC not purchased most of the properties coming up for sale, much of the landscape would have by now been

sold, probably for residential development. As a result, the interspecies climate then would have sharply degenerated if this kind of proliferation elsewhere is any indication.

The ongoing discussions about interventions in such matters always tug at the tensions between discourse and action, the orbits of orthodoxy clashing with those of innovation. And underground struggles, fertile ground for bullying, occur between various factions vying for ascendance. Social landscapes such as this are alive as 'meshwork', which some theorists understand foremost as a body politic made up of social movements in subaltern positions (Escobar 2008; Escobar and Paulson 2005; Rocheleau 2001; Rocheleau 2003; Rocheleau and Roth 2007) strategizing to harmonize globalization with the 'defense of place' (Escobar 2001), while others see meshworks as phenomenological terrain on which to ponder collective entanglements with the sensual world (Ingold 1995; 2000; 2007a; 2008b; Toadvine 2009). It is at the intersection of politics and daily happenings, then, that my ethnography aims to reflect dialectics of engagement across multiple spheres. I do not deny that conservation organizations play an important and genuine role, serving partly as agents for a social movement and partly as brokers divvying up the wealth that large corporations and donors from the general public contribute for such purposes. But most institutionalized approaches, including scientific ones, are piecemeal and disconnected from day-to-day landscape engagements. I have nevertheless borrowed from such conventional framings in order to structure my thesis and maintain a dialogue with the sphere of property rights over the many ecologies involved, those of rangelands, native grasslands, riparian areas, bears, wolves, and so on. These are conveniently partitioned into spheres reflecting the way the sciences demarcate their respective boundaries.

An Overview

At the onset, the intent of my research was rather prosaic. It began as an inquiry into an unexpected turn of events for several small ranching communities in the southwest corner of Alberta. Beginning in 1997, the Nature Conservancy of Canada (NCC) had gone on a buying spree in the vicinity of the Waterton Lakes National Park. The organization acquired dozens of properties, mostly ranches, and purchased conservation easements from scores of other ranches. A recent innovation in the legal toolkit of conservation, an easement is a contractual arrangement between a landowner and a land trust (in this case the NCC), in which the former receives proceeds from selling part of the private property rights bundle in return for relinquishing rights to develop and committing to conserve land according to particular stipulations. In 2004, the NCC declared that a majestic landscape renowned for its wildlife had been protected for perpetuity. The Waterton Park Front Project (WPF) was at the time the largest private landscape conservation initiative in Canadian history. In 2008 when I met with a delegation of NCC's officials from Eastern Canada on a tour of their flagship conservation project, they were suitably impressed with the aesthetics of the area; from Hawk's Nest, where the functionaries had gathered for a little celebration, the view of the landscape was most satisfying for its new landlords. At the same time, some of them voiced their trepidations about the NCC becoming inextricably involved in ranching.

Quite the revolution it was for a conservation organization to become the largest private landlord in the southwest corner of Alberta in less than a decade. This turn of events is even more surprising since it was made possible by the decision of scores of

ranchers, usually so protective of their autonomy, to concede their property rights in order to partner with conservationists. I set out to discover what kinds of practical engagements their legal arrangements had promised. Did these unlikely partners share core values to begin with? There is considerable scholarly literature about North American ranching that suggests so. Surely ranchers and conservationists had in common their opposition to residential development, but they nevertheless had very different designs for the landscape, ranchers aiming to keep it populated with domestic animals and the new landlord hoping to make it as wild as possible. A jointly managed 'working landscape' became the motto of this project, lately a buzzword in the conservation world. But there is nothing self-evident about working a landscape and keeping it natural at the same time.

As Raymond Williams (1980:67) wrote, "the idea of nature contains, although often unnoticed, an extraordinary amount of human history". The actual makeup of nature is nevertheless very concrete for those using it, and the same goes for what matters in it, where it belongs, and when it is out of place. And now that intact nature has virtually vanished, controversies have mounted about how much to use of what little is left of it, and how well it must be protected. That is where conservation comes in.

Conservation is another convenient abstraction. A vision, a process and an outcome all at once, it aims to nurture nature and denotes a type of governance. From humble beginnings with a few idealists raising their voices in isolation, the movement grew into a vast network of organizations including a few giants on the international scene. The movement often loses sight that – to paraphrase Raymond Williams – the idea of conservation also contains, although often unnoticed, an extraordinary number of

contradictory prescriptions. One of these has attracted my attention here, a post-industrial fervor to buy entire landscapes as a precautionary measure initiated by institutional bodies that set themselves up as judges and arbiters of those actually inhabiting and using these places. The Nature Conservancy (TNC) is one of these giant conservation landlords and although the NCC is not directly affiliated with this international network – TNC has a separate chapter in Canada – it operates according to the same principles.

The insatiable ambitions of conservation

In the literature of political ecology and critical geography, conservation, especially when paired with neoliberalism, is often depicted as synonymous with the dispossession of vulnerable people (Castree 2008a; Castree 2008b; Dowie 2005; Goldman 2001; Igoe and Brockington 2007; Igoe and Croucher 2007). Conservation, in this view, is exogenous: it carries out the agenda of outsiders while intervening in the affairs of land users, a sort of ‘territorialization’ that begins by it gaining control over vast areas, followed by ‘reregulation’ to let the market dictate the use of nature once authority gets delegated by the government to private agents (Castree 2008a; Castree 2008b; Grandia 2007; Vandergeest and Peluso 1995). By these criteria, the Project had all the makings of a neoliberal quasi-fortress (Vaccaro, et al. 2013:256).

It fit neatly in the conceptual genealogy of conservation: to begin with, over a century ago the Canadian and U.S. governments created the Waterton Lakes National Park and Glacier National Park adjoining the international border; together they were designated as the first International Peace Park in 1932. In 1970s, UNESCO designated

these Parks as Biosphere Reserves, which, on the Canadian side, encompassed the adjacent ranches in a buffer zone; UNESCO gave these Parks an additional designation in 1995 as World Heritage sites. Also in 1990s, the Yukon-to-Yellowstone Initiative Y2Y and later the Crown Managers Partnerships introduced the concept of a 'Crown of the Continent Ecosystem' to galvanize the public to protect wildlife corridors at the periphery of these formally protected areas. The Core of this ecosystem effectively spans the area between the Waterton Park Front Project and the Blackfoot Challenge, a vital link in the Y2Y cross-continental scale protection program. All told, the world's attention showered the area with ever expanding designations and the appetite of conservation seems insatiable.

In the buffer zone outside the Waterton Lakes National Park, however, conservationists had no real traction until 1997 when the NCC got involved. Realizing that ranches were coming up for sale and private land surrounding the Park was getting subdivided, the organization (a) brought the crisis to the attention of a wealthy elite; (b) bought most of the landscape parcel by parcel with corporate funding ear-tagged for a green mission; and (c) assembled a board of scientific experts to design a conservation plans for its substantial land portfolio. Furthermore, within a decade, the federal government had started delegating conservation to the NCC, beginning with over \$175 million of matching funds to allocate for the acquisition of additional natural areas in the country. Sum total, the organization was guaranteeing the protection of vital ecosystems made up of private land and was poised to impose its style of environmental governance on local ranchers. In due time, should ranches fail and if the logic of the neoliberal model determined what would happen next, the land would be assembled into some kind of conservation estate, perhaps an expensive ecotourist retreat.

But the Project also has other characteristics. McCuaig and Quinn (2011) estimated that with the property rights assigned to the NCC, a new era of place-based governance had begun for the Biosphere Reserve. Accordingly, the Waterton Park Front (WPF) Project was evolving ranch-by-ranch as a partnership with local landowners. Although the amalgamation was so recent that it had yet to coalesce into any kind of enduring form, it seemed that a hybrid of the many variants of conservation was being created on the same landscape: state-owned fortress, a co-managed landscape, a preserve for iconic species, and a neoliberal scheme for upscale trophy ranches. But it has yet to materialize by any of these standards.

A plurality of whos

Through a series of narratives, I have documented ranching livelihoods, the NCC marketing campaigns, and various stratagems for coexistence, in parallel with the entanglement of people's lives with the proliferation of ideologies about nature and conservation. I have selected specific stories to unsettle the truths of ordinary statements, like the assumed intrinsic compatibility between grasslands and livestock, as premised in range science, and the notion that ranchers are Alberta's first environmentalists on account of their reluctance to subdivide their land, and so on. But I did not do this simply out of a desire to deconstruct these ideas. Instead, my narratives also document ways that ranching sustains native grasslands, and sometimes achieves breakthroughs in interspecies relations, alongside the many ways that scientific researchers attempt to explain these relations. My intent aligns with Fina Birulés' (2009) reflection that "[a]lthough the story does not solve

any problems and does not master anything once and for all, it adds an element more to the repertoire of the world, it enables us to endure, not as a species but as a plurality of *whos*”.

This plurality is a counterpoint to several general propositions stemming from conventional scholarly treatment of conservation and ranching. A repertoire of stories that embraces this plurality also serves to safeguard against dogmatic labeling. In the narratives I collected, some ranchers saw in the rise of conservation a plot to displace ranching; for others, it was an opportunity to ensure the legacy of their ranch. Such a repertoire also tempers the sweeping statements of meta-theories like the conservationist mode of production’ (Brockington and Scholfield 2010) (see Chapter 2) that occludes everyday practice while construing conservation as a pretext for an international elite to confiscate land in the name of biodiversity. Conservationists are not all shysters; their aspirations are not invariably antithetical to the interests of land users, many of whom welcome proponents of conservation when the latter recognize a commonality of interests.

Ranchers are not invariably committed to an established ecological habitus either. It does not obtain that the structuring effects of structures, as Pierre Bourdieu (1977) sees it, come close to holding a plurality of whos utterly prisoner to a logic of hegemonic institutions. Nor is their unconscious inexorably organized into representations anchored in the collective mentality. Although incorporated dispositions reach deep and have solid holding capacity, there are practitioners at the margins who relentlessly test new ground, which, in turn, affords them the capacity to challenge conventions. There is additional value then to a broad repertoire of narratives that describe new avenues of coherent practice informed by a moral compass and horizon. My narratives took into consideration

the rationales of each set of protagonists, focusing in turn on livelihoods, science, and conservation, while tracking what discourse was evidenced on the ground and how it translated into action. Trajectories went in several directions from that point on, and, to illustrate that trends in place-making can themselves go at cross-purposes, I chose to convey accounts from other sites where similar layouts of ranching and conservation yielded diametrically contrasting outcomes, for example the Blackfoot Challenge in Montana.

In the latter case, the program featured transparency and a “coalition of the unlike” a most felicitous phrase for the social wealth found in the plurality of whos. By contrast, the place-making context of the Municipal Districts across the border from Montana in Alberta was fraught with backroom dealings and the concealment of information. The reader will recall that anyone suspected of associating with ‘liberal media’ – myself included – was told by government agents to try their luck with the Freedom of Information Act for accessing the kind of basic information that the Blackfoot Challenge divulged in regular reports online. Yet the same agents sang the praise of community-based conservation.

This kind of dissonance compounds with plurality to complicate nature politics. To find a way out of the labyrinth, it helps to unravel the underlying ontological politics, as Annemarie Mol (2002) puts it: first, to come to terms with multiple ontologies; second, to find out who gets to decide ‘what is what’, for instance, who has the authority to decide what bear behaviors are true to their ursine nature. And third, to find out ‘who decides what counts as good’ (Mol 2002:166). Is the grizzly bear a surrogate species for foothills

biodiversity? Is the wolf a keystone species for the maintenance of biodiversity? The answers to the technical side of these questions vary according to scientific sources, which often arrive at diametrically opposed conclusions. That is the case even when studies were done in the same area. For instance, in the Yellowstone Greater Region shortly after their reintroduction – mentioned in Chapter 6 – wolves were said by some to fulfill a vital role in shaping the landscape through trophic cascade effects (Laundré, et al. 2010; Ripple and Beschta 2004), and other sources found evidence to the contrary (Kauffman, et al. 2010; Middleton, et al. 2013). The portrayal of wolves as ecological saviors has nevertheless captured the imagination of a large constituency while old story-lines of wolves as ecological menaces and inveterate killers of people are still gaining new adherents with support from some other scientific quarters. Steeped in idiosyncratic epistemologies, the nature politics described here often were played with Machiavellian stealth, everyone wearing hats with conservation logos but not revealing their colors until the most opportune moment. Thus, with so many protagonists embracing the idea of conservation as a gold standard of conduct, the landscape ambitions of the NCC hardly stand out. The organization was rather a complete amateur: it was by turns recruited and spurned by place-makers; it relied on rhetoric for the most part; and has yet to manifest a coherent long-term plan beyond a list of properties it wants to buy. This said, although outplayed for now, the NCC can afford to wait with property titles in hand. After all, the organization will likely have a longer lifespan than its contractual partners in conservation.

Subtext of the issue of interspecies engagements

Meanwhile, it is argued in some scholarly milieus that conservation organizations are rather sinister. From a political ecology perspective, the key question is whether the NCC is making inroads in shaping social practice despite its apparent lack of traction in place-making. Political ecologists point out that conservation discourse has pervasive effects, which in the end legitimize territorial gains. And before asserting its regulatory authority, neoliberal conservation has to infuse cultural values with a worldly taste for nature (Vaccaro, et al. 2013:258). The success of neoliberal conservation, Vaccaro et al. argue (2013:262), stems from its ability to reframe nature: “actors and resources, for instance animals, are no longer considered vermin or utilitarian creatures, but were reshaped as icons”. The relations between nature and society therefore get “homogenized” . . . which, in social practice, has the secondary effect of “marginaliz[ing] cultural identities in subaltern groups” (ibid.:262-3). In a nutshell, the ploy of neoliberal conservation grafts the tastes of affluent people onto the social aspirations of the greater public.

Such is the prevalent theme in political ecology that there is a political project behind every attempt to conserve landscapes coveted for their beauty, rare species, or any other iconic features. A post-industrial preoccupation for intact landscapes betrays a sort of ‘hypermodernity’ (Vaccaro 2010). The process of managing landscapes is predictable: conservation policies are devised to formalize protection, the hallmark institutions of modernity (technologies of governance and expertise) take over from those of earlier occupants, and outside management gets recruited to implement plans that have been elaborated. The institutions of the new age of conservation reproduce modernity’s

elite/subaltern asymmetry wherever its ideology takes hold. This usually spells the displacement of local people, unless co-management or place-based conservation alternatives ensure that local people stand to benefit. In the latter case, this gets done either through delegation, to the extent that local people embrace conservation, or through a devolution of power that allows them to harmonize conservation with their 'sense of place' (Stewart, et al. 2013).

This overall architecture was recognizable in my study but not according to typical power relations. Every protagonist used the same refrain of conservation discourse but with the aim of servicing different brands of politics. As Bruno Latour remarks (2003:146), the "political expression always has to admit to being skew, underhand, sly, compromising, unfaithful, manipulating, changing". Excavating these politics showed that the most pertinent asymmetries, in practice, marked distinct watersheds in interspecies relations. However, divisions in the social sphere were *not* confined to classic fractures between the elite/subaltern or urban/rural dichotomies. Rather, the disputes evinced alignments that *cut across* conventional categories of ranchers, activists, recreationists, bureaucrats, experts, scientists, policy-makers, industrialists, and so forth. And the disputes manifested asymmetries between alignments of disparate sets of actors emerging from these multifold *nexus* (from the Latin "a binding together"). Peering into the magma of power, it was satisfying analytically to find clues that enabled me to track the axes conjoining moral compasses with the horizons of landscapes. I documented (a) the movement of these alignments through multiple permutations of place, each with its complement of practitioners, bureaucrats, NGOs, industrialists, scientists, amidst the array of nexus and subsequently, (b) the politicization of these alignments through forming alliances. A

meshwork approach that is more preoccupied with alignments than with a constellation of nodes (in the way network theory apprehends social diversity) is better positioned to expose the complexity and the heterogeneity *within* a social nexus, which is inherent to the social architecture. This meshwork perspective saw some alliances feeding dissidents into the cauldron of ecological fundamentalism and others trending towards coalitions of the unlike. The asymmetries behind these multifold outcomes stemmed from the different capacities of actors to gain the political upper hand, either by mobilizing support across scales from local to global, or else by currying favors in high places.

Furthermore, appraising conservation as the scion of modernity does not give much traction for understanding its practical dimensions. The Nature\Society divide has been an inexhaustible source of theoretical conjecture, about a nature objectified as resource, or else a Nature too sacrosanct to relate to. Yet, as Bruno Latour (1993) asserts, the tidy dualism between nature and society was never stable. Instead of a Cartesian divorce from an abstract nature, there has been relentless mediation between human actors, plants, animals and other kinds of *actants* that populate the vast Parliament of Things (Harman 2009). Not that they were all always on good terms. In point of fact, I proposed at the beginning that the history of domestication and the advent of ranching were defined by interspecies turmoil and estrangement. I have also documented, however, that the projects of interspecies rapprochement and the protection of plant and animal communities were feasible. The NCC put it to its national constituency that the Waterton Park Front Project was a last ditch effort to bring relief to several besieged species. Granted, as political ecologists argue, that conservation is foremost a form of politics: it was nature politics that put the NCC in position to buy a landscape, and it was the politics of place that forced the

NCC to shelve its ambitious property management plans. Nevertheless, conservation is not *only* politics and the NCC is not the first actor to envision this locally. Yet in the grand scheme, the organization can afford to be thwarted and wait it out, leaving it for other conservation-minded practitioners to prepare the groundwork for the next phase. Or else a new brand of landlord might take over, given the likelihood that scions of great wealth seeking trophies are on the lookout to assemble ranching estates when they see longtime ranching families liquidate their holdings.

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