

AN INSTITUTIONAL ANALYSIS OF THE PORTAGE COMMUNITY

PASTURE AS A COMMON PROPERTY RESOURCE

**An Institutional Analysis of the Portage Community Pasture as a Common Property
Resource**

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Abstract

The Canadian community pastures Program (CPP) began in 1939 under the Prairie Farm Rehabilitation Act to mitigate the effects of severe drought in the prairies through conversion of submarginal land into shared pasture lands managed by the federal government. In 2012, the Canadian federal government withdrew their involvement from the CPP and transferred the program to their provincial counterparts. The Portage community pasture (PCP) in Manitoba formed its own association, the Portage Pasture Association (PPA), and is operating by and for its members. This thesis investigates the current state of the PCP through identifying: i) governance structures used for decision making and community pasture operations; ii) perspectives of commons users and managers on changing governance structures; and, iii) long-term sustainability and equity in governance of the PCP. An institutional analysis using Elinor Ostrom's principles for sustainable common property resources was performed. Eight participants were interviewed, then transcripts and documents were analyzed for themes and trends using NVivo 12.0 Plus. Ostrom's framework was applicable to the community pastures context. The PPA satisfies Ostrom's principles and they are especially strong in rules matching the local context, graduated sanctions, conflict resolution mechanisms, and local institutions being respected by external authorities. The PPA is perceived as sustainable by its users.

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List of Abbreviations

AESB – Agri-Environment Services Branch

AGM – Annual General Meeting

CDA – Canada Department of Agriculture

CPGA – community pasture Grazing Association

CPP – community pasture Program

CPR – Common-Pool Resource

PFRA – Prairie Farm Rehabilitation Administration

PFRAC – Prairie Farm Rehabilitation Advisory Committee

PFR Act – Prairie Farm Rehabilitation Act

RM – Rural Municipality

1 INTRODUCTION

1.1 Background

Following the Great Depression of the 1930s, Canada passed the Prairie Farm Rehabilitation Act (PFR Act) to support small rural farmers (Canada Department of Agriculture 1961). In order to better utilize poor agricultural land on the prairies, the PFRA converted submarginal cropland into grazing land to be used as community pastures under the Community Pasture Program (CPP) (Youngman 1951). Community pastures are pasture lands that hold and graze local farmers' cattle from spring through fall at a per head cost (Canada Department of Agriculture [CDA] 1961). The first community pasture opened in 1937 and the federal program ran through to 2012, when it was announced that the community pastures would be transferred to the provinces, terminating the federal program (Canada 2014). A six-year period, from 2012 to 2018, was allotted for transfer.

During this time, the Association of Manitoba Community Pastures (AMCP) was formed and took over operations of Manitoba's community pastures (Canada 2014; Association of Manitoba Community Pastures [AMCP] 2016). Four of the 24 Manitoban community pastures chose not to join the association, including the Portage Community Pasture (PCP), Woodlands, Lakeview, and Westbourne. The PCP Grazing Association chose to run independently, by and for their members, under the Portage Pasture Association (PPA), whereas the others are being ran by their respective municipalities.

As the only pasture in Manitoba continuing to operate independently, without government support, this study provides an in-depth case study and institutional analysis of the PCP as a unique case (Yin 2003). Given its relatively long history of operation and

governance approach, commons theory and Elinor Ostrom's (1990; 2005) principles for long-enduring common property resources are used as a guide to examine conditions of collective resource use and decision making.

1.2 Purpose and Objectives

The purpose of this research was to investigate the governance of the PCP as a common's institution used for sustainable land management. The research objectives were to identify and examine:

1. governance structures used for decision making and community pasture operations, including whether they demonstrate supporting conditions outlined by Ostrom (1990; 2005);
2. perspectives of commons users and managers on changing governance structures and land uses; and,
3. long-term implications for sustainability on the PCP.

The rest of this thesis is organized into four chapters. Chapter 2 provides a literature review of community pastures and commons theory literature to contextualize the program and consider the suitability and applicability of Ostrom's (1990; 2005) framework. Chapter 3 discusses the methods used in this single case study qualitative data analysis outlined by Yin (2003) and Creswell (2014). Results are presented in Chapter 4 and conclusions arising from this analysis are provided in the final chapter.

2 LITERATURE REVIEW

2.1 PFRA Community Pastures Program

2.1.1 PFR Act 1935

The Great Depression of the 1930s significantly impacted Canadian prairie farmers, with drought and inappropriate farming practices inducing the Dust Bowl and falling prices for farmed goods (Stewart 1939; The Prairie Farm Rehabilitation Act [PFR Act] 1992). The Palliser Triangle¹ saw the worst impacts. This was an area deemed unsuitable for agriculture due to high average aridity, poor vegetation, and poorly suited soil types that covered Southern regions of Alberta, Saskatchewan, and Manitoba (Marchildon 2009).

As a response to the dire situation of Canadian farmers, the federal government introduced the Prairie Farm Rehabilitation Act (PFR Act) in 1935 (Canada Department of Agriculture [CDA] 1961). Through the use of a government appointed Prairie Farm Rehabilitation Advisory Committee, the Act's mandate provided rehabilitation of drought and soil drifting areas in Alberta, Saskatchewan, and Manitoba through Experimental Farms, water development and cultural improvement (CDA 1961; The Prairie Farm Rehabilitation Act [PFR Act], S.A. 1935). The PFR Act intended to provide five years of support with a sum of five million dollars to accomplish that mandate (PFR Act, S.A. 1935). However in 1937, representatives of the Government of Canada toured the Palliser Triangle and observed approximately 14 000 abandoned farms, which caused them to acknowledge that they had underestimated support for rehabilitation (Gray 1967, Marchildon 2009). The Act was amended to include land utilization and resettlement and advisory committees, which provided expert advice on soil and soil drifting, water development and land utilization (CDA 1961; Marchildon 2009). The PFR Act

¹ For more on the Palliser Triangle, dry belt, and eco-regions soil zones, refer to Marchildon 2009

headquarters moved to Regina, Saskatchewan, into a new federal agency as the Prairie Farm Rehabilitation Administration (PFRA) (Marchildon 2009). In an amendment to the PFR Act, the Government of Canada was required to fence and re-grass drifting soil areas upon taking possession of them in agreement with the province (Marchildon 2009). In 1939, the five-year restriction to the PFRA program was removed and additional financing was provided to support the program (CDA 1961).

The PFRA had three main goals to solve the farming crisis, namely, to encourage a cultural shift to improved farming practice, utilizing the land by returning it to grassed areas for grazing, and developing water through irrigation systems to mitigate the drought (CDA 1961). The end goal was to transition from a grain economy to a grain and cattle economy (Gray 1967). The Act had three main objectives under its land utilization goal: i) remove submarginal lands from cultivation; ii) develop those areas for grazing purposes; and, iii) resettle farmers into those areas (Youngman 1951; CDA 1961).

2.1.2 Community Pastures

Use of the community pastures relieved farmers of many essential duties related to pasture management and supervision, while allowing them to use their own lands for cultivation (CDA 1961). This increased farmers capacity, both technically and managerially, which supported their businesses as farmers and acted as a social and environmental support. Community pastures also provided optional services for farmers, including castration, dehorning, vaccination, branding, insurance, breeding, and spraying cattle for parasites, at a government regulated rate (CDA 1961). By 2006, the PFRA managed 87 community pastures with 24 in Manitoba, 62 in Saskatchewan, and one in

Alberta² (Arbuthnott & Schmutz 2013; Friesen 2014; Kulshreshtha et al. 2008). The 2.3 million acres of pasture lands supported 225 000 head of livestock belonging to 4 000 producers (Kulshreshtha et al. 2008).

2.1.3 Early Operations of PRFA Community Pastures

The Government of Canada Minister of Agriculture appointed individuals to the Prairie Farm Rehabilitation Advisory Committee (PFRAC) who were responsible for developing a method to rehabilitate drought and soil drifting areas in the prairie provinces (PFR Act, S.A. 1935). Sub-committees were developed in advisory areas related to three main goals: water development committee, soil and soil drifting committee, and land utilization committee, to which the PFRAC would appoint sub-committee members (Marchildon 2009).

PFRA community pastures were pasture lands owned by the provincial government and leased to the Government of Canada (CDA 1961). The community pastures were managed by a Government of Canada appointed full-time manager and a Community Pasture Grazing Association (CPGA); and, used by local prairie farmers (CDA 1961). The province would choose areas of land to convert into community pastures and acquire those lands through purchase and removal of its current residents (CDA 1961; Marchildon 2009). The provincial government would then lease the land to the Government of Canada with the agreement that the land would be constructed, maintained, and improved as a community pasture (CDA 1961; Marchildon 2009). Once constructed, a public meeting to form a CPGA would take place and an Advisory

² For more on Canada's political environment during PFRA enactment, refer to Marchildon 2009

Committee would be elected by the CPGA, who would be responsible for allocating pasture privileges (CDA 1961).

The Advisory Committee would allocate pasture privileges first to farmers who were moved out of the pasture area and relocated within the municipality, then to other farmers within the municipality, and lastly to adjoining municipalities until the carrying capacity or stocking rate, as determined by a government assessment, of the community pasture is reached (CDA 1961). The Advisory Committee would also set maximums on the number of livestock any one person could bring into the community pasture so that the community pasture may be utilized by as many residents as possible (CDA 1961).

Community pastures had managers who were appointed by the Government of Canada but were often from the municipality in which the community pasture was located and recommended by the CPGA (Balkwill 2002). Pasture managers were required to live on-site in homes built as part of the community pasture (CDA 1961). Pasture managers were responsible for pasture and livestock management, including receipt and delivery of livestock, branding, vaccination, and collection of fees (Balkwill 2002). PFRA community pastures balanced local knowledge and central control (Balkwill 2002). The PFRA agreed that local users knew the land best but perceived that federal control was needed to ensure the stability and permanence of the plan and program (Balkwill 2002). A summarized governance structure is provided in Figure 1.

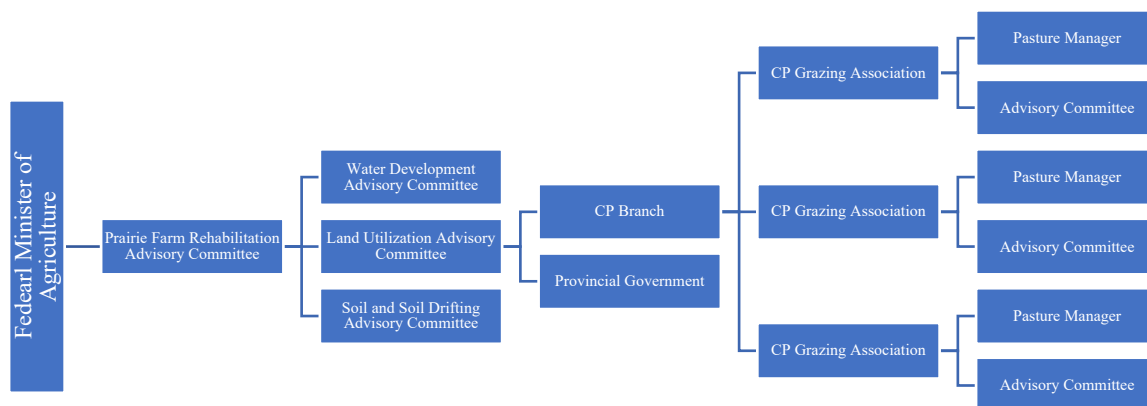


FIGURE 1. RESEARCHERS INTERPRETATION OF THE EARLY GOVERNANCE STRUCTURE FOR PFRA COMMUNITY PASTURES

2.1.4 Later Operations of PFRA Community Pastures

Overtime, community pasture operations largely remained the same; however, the upper PFRA management, beyond the CPGA, evolved into a different process. With further development of the CDA into Agriculture and Agri-Food Canada (AAFC), the PFRA was pushed further down the organizational chart. This created a further disconnect between the federal government and the community pastures. PFRA had become a smaller part of a much larger agriculture ministry.

To illustrate, the Minister of Agriculture and Agri-Food continued to lead; however, several boards and commissions, as well as the Deputy Minister were added directly below them, followed by the PFRA and several other branches (Agriculture and Agri-Food Canada [AAFC] 1995). The Director General of the PFRA reported directly to the Deputy Minister and the directors for the PFRA's four services: soil and water conservation, engineering, policy and analysis, and administration; and the affairs offices all reported to the Director General (Agriculture Canada [AC] 1991). The provincial affairs offices were responsible for negotiating federal-provincial agreements for the PFRA (AC 1991). The Conservation Service was responsible for developing and

delivering soil conservation, community pastures, Rural Water Development, Southwest Saskatchewan Irrigation Programs, and operation of the Shelterbelt Centre (AC 1991; AAFC 1995). Five divisions reported to the Conservation Service, including the Program Planning Division and the Field Operations Division (AC 1991). Under the Program Planning Division was the Pasture Planning and Allocation Section (AC 1991). The Field Operations Division was divided into six areas (AC 1991). CPGAs, Advisory Committees and pasture managers remained for each community pasture and reported to their corresponding areas. A summarized governance structure for is presented in Figure 2.

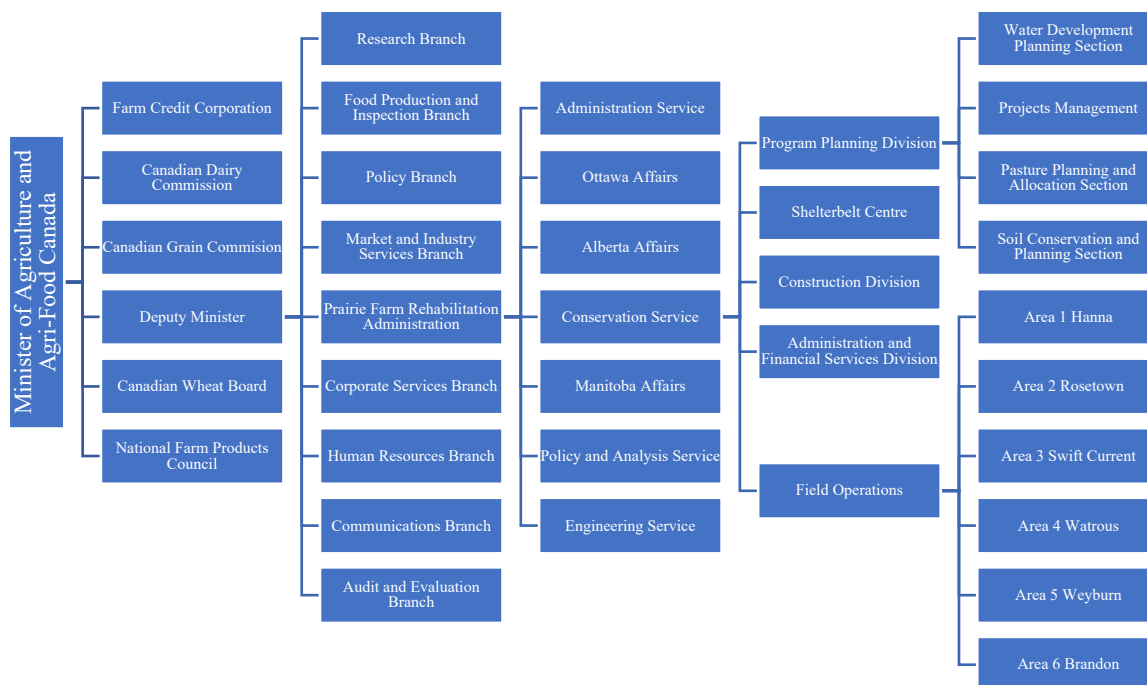


FIGURE 2. RESEARCHER’S INTERPRETATION OF THE LATE GOVERNANCE STRUCTURE FOR PFRA COMMUNITY PASTURES

2.2 PFRA Merger to AESB

In 2009, the PFRA was broadened to a national focus and merged with the National Land and Water Information Service and Agri-Environmental Policy Bureau to form the Agri-Environment Services Branch (AESB) under AAFC (AAFC 2010). The AESB set goals

to develop and disseminate science-based agri-environmental knowledge and tools (AAFC 2010). Within this, the new mandate for CPP would be to i) manage productive, biodiverse lands and promote sustainable land use; and, ii) utilize the land resources to complement livestock production (Canada 2014).

2.3 Transfer of Ownership to the Provinces

The 2012 federal government budget introduced major cuts to the AAFC (Canada 2012). This led to reorganization of the AESB, merging the program into a new Science and Technology Branch (Canada 2016), which resulted in the AAFC transferring the control and administration of the pastures back to the provinces, effectively terminating the federal CPP (Canada 2014). The AAFC established a six-year transition period, from 2012 to 2018, to allow for the provinces, municipalities, and community pastures to prepare and decide the best means to handle the community pasture lands (Canada 2014). The federal government agreed to wait and not transfer any pastures in 2012, but in 2013, 10 community pastures were transferred back to the Government of Manitoba and 10 were transferred to the Government of Saskatchewan (Canada 2014).

Manitoba started a non-government organization, the AMCP, led by an elected board of patrons to manage the lands (AMCP 2016). Each of the 24 Manitoban community pastures were given the option of joining the AMCP, and as a result 20 community pastures joined (AMCP 2016; Harris 2016). The four community pastures that chose not to join were: Lakeview, Westbourne, Portage, and Woodlands; and these are still operational. Lakeview and Westbourne have joined forces as a single community pasture managed by the Rural Municipality (RM) of WestLake-Gladstone (Municipality of WestLake-Gladstone 2018). The RM of Woodlands has taken over management of the

Woodlands Community Pasture (Harris 2016, Blume 2016). The Portage Community Pasture (PCP) covers an expanse of 14 000 acres and is being run by and for its users³, under a new organization, the Portage Pasture Association (PPA). The PPA is administered by the Portage Community Pasture Board⁴ with operations carried out by a pasture manager and pasture rider⁵. The PCP is a unique case of management amongst the community pastures in Manitoba and its institutions can be analysed further to identify its applicability to other Manitoban community pastures as well as other common property management initiatives.

2.4 Commons Theory

Robert Wade's *Village Republics: Economic conditions for collective action in South India* (1988) identifies a number of facilitating conditions for collective action. Within these conditions, the necessary institutional arrangements are i) rules that are simple and easily enforceable; ii) accountability through locally devised management and rules; iii) three-level structure of authority, including top, middle, and supervisory management; iv) graduated sanctions; iv) and organization that is limited to supplying privatizable goods (Wade 1988). Wade's research is focused on a case study in South India and these principles do not all apply to a case in Canada. For example, a three-level structure of authority is uncommon in many Canadian contexts due to their large size and is especially apparent in the agriculture sector where larger organizational structures with greater than three levels are present.

³ Imperial measurements of acres are used rather than conventional Canadian metric measurements hectares in order to keep consistency with the participants choice of using acres.

⁴ The Portage Community Pasture Board will herein be referred to as "the Board".

⁵ A Pasture Rider assists the Pasture Manager in treating, caring for, and corralling cattle on horseback, in addition to fencing and corral maintenance

Arun Agrawal's *Critical Enabling Conditions for Sustainability on the Commons in Common Resources and Institutional Sustainability* (2002) identifies the institutional arrangements indicative of sustainability and governance success in commons management. Agrawal (2002) outlines 33 enabling conditions for sustainability from a collection of other common resource theorists' conditions and his own input. These are built upon Wade (1988), Baland and Plateau (1996), and Ostrom's (1990; 2005) theories, with the addition of Agrawal's own work to build an extensive set of criteria and conditions.

Elinor Ostrom's classic *Governing the Commons: The Evolution of Institutions for Collective Action* (1990) and *Understanding Institutional Diversity* (2005) outline eight design principles for sustaining common-pool resources (CPRs): i) clearly defined boundaries; ii) rules matching the local context; iii) collective-choice arrangements; iv) active monitoring; v) graduated sanctions; vi) accessible conflict-resolution mechanisms; vii) local institutions respected by external authorities; and viii) responsibility to govern CPRs throughout the system. Ostrom's (2005) principles have been used to analyze institutions in a number of different contexts, including pastures, fisheries, and irrigation systems, and they have been tested to show the principles can be used to assess whether a CPR governance system is robust. Ostrom (1990: p.29) defines CPRs as "a natural or man-made resource system that is sufficiently large as to make it costly (but not impossible) to exclude potential beneficiaries from obtaining benefits from its use". CPRs are also attributed by excludability and subtractability (Ostrom 1995). Excludability is the ability to exclude or limit potential beneficiaries from using the CPR and subtractability is the degree to which one person's use limits the availability of the resource to be used

by others (Ostrom 1995). Community pastures can be considered CPRs because they are a human-made resource system in which cattle are grazed and they exclude those without access from grazing, as well as setting stocking rates on the land.

The principle of having *well-defined boundaries* addresses the issue of free-riders in the system (Ostrom 2005). This includes both spatial and access boundaries. Users should be able to define their memberships to the CPRs by those who agree to use the resource according to agreed-upon rules and those who do not (Ostrom 2005). This rule evolved to include that the resources themselves and the users should be clearly defined and easily defended from outsiders (Morrow & Hull 1996; Ostrom 2005). In the community pasture context, users need to understand what areas and uses of the community pasture are available to them, as well as the access and use rights of other users.

Rules in CPRs must match the local context (Ostrom 2005). A large part of this principle relates to user inputs matching their benefits received, in order to establish fairness, build trust, and encourage the willingness of users to keep the resource well-maintained and sustainable (Ostrom 2005). For community pastures, while they are broadly very similar, they each have their own distinct differences and contexts that must be accounted for in their rules.

Collective choice arrangements allow those affected by the rules to participate in making and modifying them (Ostrom 2005). This allows for rules to better fit the local context as they are adjusted over time to better fit system needs (Ostrom 1990). Since the beginning of the CPP in 1937, the cattle farming industry has changed drastically with impacts felt differently in varying contexts. In order to appropriately respond to change, those

experiencing the impacts of change on the community pastures would be best suited to participating in the making and amending of rules.

The rules of the CPR should be *monitored* for compliance and conditions of the CPR should be audited (Ostrom 1990). There is an ongoing debate of who in a system should be responsible for monitoring, but it has been found that most successful CPRs select the person responsible for monitoring (Ostrom 2005). Effective monitoring allows users to continue their operations without the fear of other users taking advantage of them (Ostrom 2005). According to Ostrom's theory, community pastures should have a selected official responsible for monitoring use.

Users of the CPR that violate rules should be assessed *graduated sanctions* based on the seriousness and context of their offence (Ostrom 1990). The first sanction should be an informative warning on the first infraction of its type, making other users aware as well (Ostrom 2005). This enforces that others caught with the same infraction will face penalty and shows that the rules should be recognized and followed (Ostrom 2005). Repeated infractions should result in escalated sanctions and failure to conform to the rules should eventually lead to being forced to leave the community (Ostrom 2005). Community pastures should use graduated sanctions to maintain a positive relationship between officials and users, as well as maintain robust governance.

Conflict resolution mechanisms should be low cost, local, and fast for conflicts amongst users and between users and officials (Ostrom 2005). Having the ability to address conflict immediately and produce resolutions will greatly reduce the loss of trust amongst members of the system (Ostrom 2005). Community pastures should be able to discuss what constitutes infractions in order to have long-enduring rules.

Other governments must recognize the rights of the CPR and not challenge the rules of the CPR (Ostrom 2005; Ostrom 1990). External authorities should recognize the legitimacy of the CPRs rules and allow for them to be enforced (Ostrom 1990). A disgruntled user of a CPR should not be able to seek external authority to dispute the CPRs institutions. In the Canadian community pasture context, the federal, provincial, and municipal governments must recognize the rights of the community pastures to devise their own institutions.

The above principles should be organized in multiple layers of nested enterprises so that the responsibility to govern CPRs is distributed throughout the system (Ostrom 1990). Establishing rules at one level of the system and not at the others will result in ineffective rules (Ostrom 1990). In the context of community pastures, when more than one community pasture is managed, rules should remain similar across all community pastures, while accounting for local context. In the case of a single community pasture, rules changed at the community pasture level should be communicated with the government body who owns the land, users of cattle grazing, and other users in order to create responsibility throughout the system.

Ostrom's principles are easy to understand and formulate into questions while encompassing the essential needs of any common-pool resource system. A benefit of utilizing these principles is that they translate easily for research purposes and are both versatile and adaptable to different contexts. Described in the next chapter, Elinor Ostrom's (1990; 2005) eight design principles will be used to examine the sustainability of the Portage Community Pasture in Manitoba.

3 METHODS

3.1 Case study approach

This qualitative case study research will follow a single case design (Yin 2003), using the PCP as the unit of analysis with boundaries of those people directly involved in the management, organization or use of the pasture. Single case designs are used for several main reasons (Yin 2003), namely, when investigating a “critical case”, which in this instance involves applying Elinor Ostrom’s well formulated common property resource theory. This is a unique case in that the PCP pasture did not join the AMCP; it is representative of the everyday situation of PCP, and it describes and explores institutional changes over time.

3.2 Data collection and analysis

3.2.1 Research design

Data collection began with document and literature review, followed by site visits, interviews, transcriptions, analysis, and presenting findings back to community with which the research was performed (Yin 2003).

3.2.2 Document and literature review

A review of academic, media, archival, and government literature was completed on the background of the PFRA, community pastures, and the federal government transfer of ownership. This review informed my understanding of community pastures in Canada, including how they operate and are governed. Review work was also necessary to understand governance structures that were in place during the PFRA, which satisfies half of my first research objective. All of the documents reviewed (e.g., books, journal articles, government reports) were publicly available.

3.2.3 Interviews

Following successful completion of The University of Winnipeg ethics review, individual interviews were completed with six users of the PCP and one group interview was undertaken which included five additional users. All pasture users interviewed primarily use the pasture for cattle grazing. A limitation of this research is that I was unable to contact other users, such as recreationalists and hunters, due to time constraints and uncertainty regarding how to contact these individuals.

The first research objective was addressed by operationalizing each principle from Ostrom's framework into interview questions (see Appendix A) to assess the current governance and institutional arrangements of the PCP. For the second objective, participants were asked about their perceptions on the transfer of PCP administration from the federal to local, PPA, level. The third objective was partly addressed by assessing attitudes on the current state of the pasture and whether users believed it was being managed sustainably.

A group interview was completed first and informed my interview questions so they could be refined for individual interviews to better fit the context and best retrieve the answers needed (see Appendix B). This group interview was conducted during a site visit which included attending a fall round-up, described below.

3.2.4 Site visits and field notes

I visited the pasture on two occasions and attended the PPAs Annual General Meeting (AGM). In September 2018, I met with the current pasture manager and a long-time user to establish a good working relationship early on in the research as well as to ask permission to proceed with my study. In October 2018, I later attended a round-up day to

observe the pasture in motion, perform a group interview, and continue building my relationship and trust with the PPA. At the AGM on January 30th, 2019, I provided a brief overview of myself and my project, then quietly observed the meeting to again build trust amongst members of the PPA. Following the AGM, I conducted six individual interviews, which were digitally recorded (with permission) and transcribed verbatim. Through each visit I took copious field notes and composed a written summary of events following the visit.

3.2.5 Data analysis

Interview and field note data were analyzed using NVivo 12.0 Plus, a qualitative data analysis software. Interviews were coded using broad master codes related to the interview questions and Ostrom's framework. Data analysis followed the steps and framework outlined by Creswell (2014), which began by transcribing interviews, typing field notes, and arranging data into categories. I then read through all data to refamiliarize myself and reflect. Using NVivo 12.0 Plus, I then coded words and statements from the text based on my interview questions and the coded data were then used to reaffirm themes related to each of Ostrom's principles. A detailed discussion of individual themes is followed by interpretation of the findings through Ostrom's theoretical lens, creating a combined results and discussion (Creswell 2014).

3.2.6 Validity and reliability

Clarifying bias creates an open and honest narrative (Creswell 2014). Some researcher and participant subjective bias is present in this study. I entered the study with a positive impression of the PCP prior to communication and research. I do not come from an agricultural background and this may influence interpretation of results. Participants may

have their own subjective bias on the PCP, particularly those in influential roles on the pasture, and this may influence their responses. Triangulation between the evidence produced by different research methods is a simple and common form of combining methods and using it to justify themes (Gorard and Taylor 2006, Creswell 2014). In order to triangulate I used my findings through document review, interview data, and field notes.

3.2.7 Limitations

Several limitations exist with regards to this study, including the limitations of Ostrom's framework, inability to interview all users, and the lack of generalizability of the case onto other contexts. Ostrom's framework provided good basis for analysis, however, the unique context of this case may present other principles or factors that cannot be accounted for under Ostrom's framework. Many users are recreational and have no point of contact with the PPA. I was unable to contact these users for interview procedures, thus, creating a bias toward grazing operations. This case cannot be generalized onto other case studies because of its distinctive nature; however, this is not the study's purpose as it aims to complete an in-depth analysis of this particular case. While it may not be generalizable, it may inform policy and other community pasture and common property resource operations.

4 RESULTS AND DISCUSSION

4.1 Chapter overview

This chapter presents results from my analysis structured around Ostrom's principles for sustainable common property governance. For the sake of organization and clarity, results related to each of Ostrom's principles will be presented and discussed individually. For consistency in discussion, the term "user" will refer to any user of the pasture; the term "patron" will refer to those using the pasture for grazing cattle; and, the term "member" will refer to those associated with the PPA, including management, board members, and patrons.

4.2 Applying Ostrom's Principles to the Portage Community Pasture

The transfer from the PFRA to the PPA was "spur of the moment" (P2⁶). In 2012, managers at all PFRA community pastures were offered retirement packages. The users at the PCP thought they would be one of the last to go since they were doing well financially, but by March of 2013 their pasture manager was offered a retirement package and the pasture manager chose to retire. Being so close to the grazing season and not seeing immediate results from the AMCP, which was overwhelmed and just starting up, the existing CPGA members drove out to the AMCP headquarters in Minnedosa, MB and asked to be separated from the association and run independently. Since 85% of the land was already owned by the Rural Municipality (RM) of Portage la Prairie, MB, whereas many pastures were mostly crown land, the AMCP allowed the PCP to separate from the association and become the first community pasture in Manitoba to operate independently and the only pasture to operate by and for its users (P2).

⁶ In order to respect confidentiality of participants, each participant was assigned a unique identifier. Herein, participants will be referred to as P1, P2, P3, P4, P5, P6, and Group Interview (GI).

4.3 Clearly defined boundaries

All participants agreed that their user rights, including how they access and use the land, were clear (P1; P2; P3; P4; P5; P6; GI). There are clear examples of formal and informal boundaries and associated rules of use are followed or disregarded, with implications for pasture lands and users. Main themes regarding boundaries are outlined below.

4.3.1 Access

In the view of the participants, all users understand that while the gates are closed, the pasture's only purpose is to graze cattle and may not be entered or used by other users (P6; GI). Near the beginning of the fall hunting season, once all cattle have left the pasture, pasture managers open the gates to signal to other locals that pasture lands may be used for any number of uses as municipal land (P2; P3; P5; P6; GI).

4.3.1.1 PFRA

A participant in the Group Interview (GI) noted that becoming a new patron under the PFRA's management "was a bit of a big deal". In the earlier days, users could start with a maximum of 60 head, but were more likely to be accepted with ten (GI). Upwards of three patrons would combine their cattle in the same section of pasture (GI). Following the end of the grazing season, the gates would open for other users. Hunters were to sign in with the pasture manager, wood-cutters were to obtain a permit from the pasture manager, and the RM was responsible for notifying the pasture manager of gravel mining (P1; P2). Since the RM owns most of the land, it has the right to mine aggregates (P2). Other recreational users need not consult the pasture manager for their use; for example, snowmobilers, all-terrain vehicle riders, and hunters. In recent years, the PCP collaborated with the local Portage la Prairie, MB snowmobile club, Club Snow, to run a

groomed snowmobile trail through the pasture (P5; GI). Overall, users felt the boundaries of the pasture and associated rights to access were clearly defined.

4.3.1.2 Grazing

Since the PPA took over management, the old process for gaining access to grazing is no longer in use. This is in part due to the simplification and recontextualization of rules and regulations that were considered needlessly complicated by external government involvement and standard processes. All users of the pasture prior to the transfer were able to keep their allotments under the new association (P1; P4). However, a shift in pasture management took place, whereby each user was given individual sections of pasture, rather than shared pastures as it had been under PFRA (P1; P2). An implication of this change was the need for exact substitutes when users leave the PPA (P6; GI). For example, if a user with 100 head of cattle left the PPA, they would be replaced with 100 head of the same breed of cattle, to match that section of pastures needs.

As for new applications for access, there is much to be discussed regarding who and how many are accepted. In the past five years that the PPA has been running the PCP, they have had two of their 23 patrons exit the program (AGM Minutes 2019). Replacement of these two patrons was done by “word of mouth” among the community and a decision was made based upon meeting similar criteria to the patron who left (i.e., similar herd size and breed) (P6; GI). News of PCP success has spread locally, and the number of applications has increased significantly (AGM Minutes 2019). A neighbouring community pasture, Woodlands Community Pasture, has seen an increase in rates since being taken over by their local RM, independent of the AMCP (GI; AGM Minutes 2019). This resulted in several patrons applying to the PCP because they have lower rates. With

over ten applications to choose from, a systematic approach to selection is deemed essential by current users (P2; AGM Minutes 2019).

At present, there is no formal application selection process, though there has been discussion of creating one given this spike in interest (AGM Minutes 2019). The need to find a solution is evident as patrons leaving the PPA is inevitable (P5). Without a system for access, the PPA is vulnerable to create unfair and unjustified decisions, thus they need rules or a system for deciding on applicants (GI). The PFRA had a system for access in place that was lengthy and deemed unnecessary, so the PPA must create a system that works better for their context (GI).

While not all users agree on the timeline for formalizing the application review and selection process, many agreed on the basic principles that should be included as part of the process, with the most important being that the pasture should be put first in decisions (P4; AGM Minutes 2019). For example, whereas the PFRA would cater to interested applicants; conversely, under the PCP, the user must fit the pastures needs (P4). The ability to be selective in their application process is a luxury that they did not have under the PFRA and was created by the betterment of users, operations, and the land under the PPA. The members of the PPA agree that new patrons should be local to the area, in part so that they will have a better idea of who the new members are. As well, they should be similar to the patron who was lost, in terms of breed and numbers (AGM Minutes 2019). While the concept of cross-fencing – whereby a large pasture is divided into smaller sections – was brought up to allow more people to access, the resounding opinion was that they would like to remain the same with their current pasture fencing and not use cross-fencing (AGM Minutes 2019). Having their own individual pastures works well

because they can easily replace patrons without having to worry about how the new herd will get along with the other herds (AGM Minutes 2019).

For those who are current patrons, access is straightforward and simple. The Board sets a date for deposits to be due and patrons must pay it on time (AGM Minutes 2019). Once springtime commences and there is enough grassland available to support the cattle, the patron and the pasture manager arrange a drop-off time for the cattle. Cattle are taken in at the corral and until round-up begins in the fall, there is no need for members to come by at all (GI). Patrons are, however, able to access their pastures and cattle whenever they would like, but they must notify the pasture manager so he can unlock the gates for them (P3). Once the weather turns cold in the fall and the land can no longer support the cattle, the manager calls to arrange a pick-up or round-up time with each member. Patrons pick up their cattle and pay the remainder of their balance owing for the season.

4.3.1.3 Gravel-mining

In early December, gravel-mining begins on the community pasture by the RM. Mining will continue into March or until the ground becomes too muddy to work with (P2). All participants understood that the land the pasture resides on belongs to the RM and as such, they have the right to extract the gravel (P1; P2; P3; P4; P5; P6; GI). The following statement represents the participants' collective understanding: "It's the RM's land. If they want to take gravel out of it, they'll take gravel out of it" (P1). Due to the positive relationship between the RM and the Portage Pasture Association, the pasture manager always knows where and when mining is happening (P6). Legally required environmental remediation happens quickly so as to not limit use of the land for grazing (P5).

4.3.1.4 Recreation

The PCP supports several recreational uses throughout the winter months (i.e., hunting, wood-cutting, trapping, snowmobiling, and all-terrain vehicle riding). Access to the pasture is granted following the removal of all cattle and the unlocking and opening of all gates. Active mining areas are kept closed. Participants say that while the open gate rule is understood, it is not always followed (P6). For safety, users have the option of signing in at the PCP headquarters, though most users do not (P1; P2; GI). There are certain regulations outside of the PCP linked to certain activities in the pasture, such as needing a hunting license to hunt and a membership with Club Snow to use groomed snowmobile trails (P5; GI). Those cutting wood no longer need to obtain a permit from the pasture manager to do so because the RM no longer requires it (P6).

It is difficult for local law enforcement to monitor the pasture lands and enforcement is usually left to the pasture manager or rider to report when laws are broken (P5). There have been several cases where some users have shot deer or birds right off of the highway (which is illegal), sometimes while cattle are in the pastures (GI). This is also a threat to livestock safety and pasture users' businesses. While efforts have been made to catch poachers, it is difficult to monitor all 14 000 acres at any given time.

The greatest problem with recreational users is littering (GI). It is not feasible to put out garbage cans as there is no one to empty them and the cattle would eat it. The litter is left to the pasture manager and riders to clean up, which should not be their responsibility nor is it the best use of available labour. Since recreational users do not have to declare their presence in the pasture, it is difficult to catch the users littering. This situation exhibits the free-rider problem, where non-paying users experience the benefits of paying users. It

is evident that the principle of clearly defined boundaries is met by members of the PPA and the municipality, but there is room to improve things for recreational users.

4.3.2 Physical boundaries

The physical boundaries of the pasture are well understood, in most part due to the fact that it is fenced. In general, users understand that a closed and locked gate means that the pasture lands are closed to access (P2; P3; P5; P6; GI). During the grazing season, each patron has their own section of pasture for their cattle that they may access freely; however, they are not required to, and some do not go beyond the corrals where they drop-off and pick-up their cattle (GI). It is clear different users access the land differently, which has had direct implications on how the land is cared for by each user. The patrons who do not usually access the pastures directly have a greater sense of responsibility to care for the land than users with open access to the PCP during the winter months.

4.4 Rules matching the local context

4.4.1 PFRA

Four of the participants mentioned the excess of “red tape” under PFRA (P1; P2; P5; GI). Red tape is a symbol of government bureaucracy, referring to inefficient workings of the government (Goodsell 2000). For example, one participant said “there was a lot of government red tape and government rules and regulations. Lots of times [they] didn’t apply really, but because it was government they had to apply, or they had to be taken into consideration with a lot of stuff” (P1).

For example, riders had to be hired every year and had to pass security clearance before they could be hired. Riders who had been hired the year prior would have to start their applications a few months in advance of when they would start work. While this can be

seen as a way to keep riders more conscious of their job (P5), pasture users generally considered the multi-month process to be unnecessary and inefficient (GI).

Under the PFRA, overall the politics of the community pasture operations were said to have worsened overtime, and the PFRA never tried to make the program economical (P4). Making decisions “used to be like murder” and exacerbated an already inefficient system (GI). A participant noted “it was a decent system, but as the herds started getting bigger and bigger, it wasn’t working anymore” (GI). Yet with increased local control, members could change rules and decision making processes to suit local contexts and priorities, reducing conflict and frustration among users.

4.4.2 Local context

Under the PPA, rules are now devised locally and amended when members of the PPA notice the need for improvement to match their context as it evolves. The PPA transferred most rules from the PFRA and follows rules similar to the AMCP (P1; P2; P3; P4; P5; P6; GI). However, the rules have been simplified and have reduced what participants see as “red tape” (GI). Fees on the PPA have increased as a result of operations costing more (P6; AGM Minutes 2019). While under PFRA, the government took care of expensive costs like farm equipment and buildings (P6). Under the PPA, these costs had to be taken on and it is now costing more per acre and per animal (P6). While costs have increased, the PCP is still one of the least expensive pastures in the area as the PPA strives towards its goal of remaining accessible for small farmers (AGM Minutes 2019). The PPA has a set balance sheet they strive for at the end of the season and will only increase fees when that net balance begins to decrease (AGM Minutes 2019). The due date for deposits was moved to the first of January and made non-refundable, in order to protect the PPA from

no-shows in the spring (AGM Minutes 2019). This is an example of a new rule suited to the local context that protects the pasture organization and secures ongoing patron access.

Rules and amendments must be passed by the Board before they can be implemented (P1). For large decisions, the Board will typically address issues and ask for input from the rest of PPA at the AGM (AGM Minutes 2019). It should be noted that while representative of the local community, the users and members lack diversity. In situations where diverse groups are involved, these structures and decision-making processes may be less effective. Pasture managers are chosen by the Board and are typically the ones to bring suggestions for rules to the Board (P1; P2). For example, the manager suggested that cattle should be taken in as early in the day as possible so that the riders can safely move the cattle to their pastures in the daylight (AGM Minutes 2019). This was brought to the Board and made a rule. Simple examples, such as this, illustrate how local decision making can adapt rules and practices to better suit local needs, rather than generic policies applied from further afield, as was the case under PFRA.

A longstanding rule or practice is that the pasture manager must live on or near the community pasture (P2; P5). This is so they are close by if any issue arises on the pasture during off hours. As well, they must be on the pasture every day, so it is sensible for them to be close (P2; P5). Pasture managers thus live locally and are closely attached to their pasture lands. They are typically from local families and farms. They possess specific local knowledge of farming, users, local communities, and can be seen as being highly aware of local contexts. From this position they are able to recommend rules and changes that are closely suited to local contexts (P2; P5).

Finally, due to the exponential growth, restructuring, and industrialization in the beef industry, herd size has increased, and it has directly impacted the way pastures, including the PCP, are run. In the past, the pasture would have had upwards of 50 patrons using the community pasture, whereas they now have 21 (P6; GI). The number of head on the pasture has remained the same, but the number of patrons has decreased. It has enabled the PPA to adopt its individual pasture sections model and has mitigated conflict. With a smaller number of patrons, decision making is easier, as is administration of the pasture.

4.4.3 Informal rules

A number of informal rules, or the way people behave outside of formal written rules and procedures, are in use in the PCP. One of the most important informal rules on the PCP is that “you can’t hold grudges” (P1). For example, if a bull from a neighbour’s pasture breaks into your pasture and breeds your cattle, you simply cannot be upset with the other patron. Not all circumstances are foreseeable and while most conflict is mitigated through diligent monitoring; some issues do still arise. Not holding grudges supports stronger relationships between patrons, minimizes conflict, and allows the PPA to run smoothly.

In reference mainly to recreational use, the guiding principle of “don’t abuse it, you won’t lose it” (P5) prevails. The rules of using government property apply to the PCP but respecting the land and its resources goes beyond administrative consideration to encompass what can be considered common commitments to stewardship. For example, ripping up grass with tires is not illegal, but it is not an accepted practice within the PCP.

There are also informal traditions that link members to one another and through time. For example, whenever members pass through the corrals, usually for drop-off or round-up of cattle, they sign the wall in the warming shack. There is no rule written down that

members must do this, yet it is done with every visit, like a ritual. The opportunity to write on the wall acts as a rite of passage for members and a privilege that comes with being a member. It signals to members and visitors who belongs to the pasture commons.

4.4.4 Understanding

Since most rules and all patrons transferred from the PFRA, understanding of the current rules was straightforward for members. The rules have been simplified since the PFRA, increasing ease of understanding. Members of the pasture also found the rules “user-friendly” (P1; P3) and easy to understand.

4.5 Collective-choice arrangements

The organizational structure for the PPA is straightforward and simple. The community pasture Board is at the top of the governance hierarchy and is responsible for major decision making (P3). The pasture manager reports to the community pasture Board and operationalizes any decisions taken (GI). Riders, who work alongside the pasture manager to help with operations, report to the pasture manager (P5). A summarized governance structure for is presented in Figure 3.

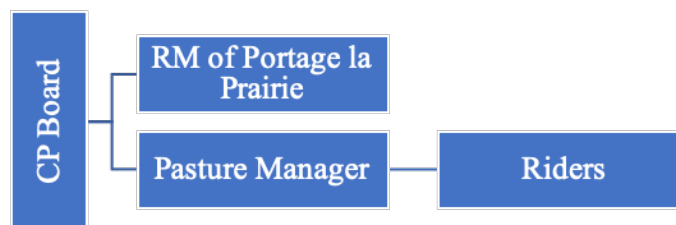


FIGURE 3. RESEARCHERS INTERPRETATION OF GOVERNANCE STRUCTURE FOR PORTAGE PASTURE ASSOCIATION

4.5.1 CP Board

The members of the Board are voted in and elected by the patrons (P1). Since the formation of the PPA, the Board members have remained the same (P6). The Board is made up of six patrons and one president (P1; P2). The Board uses collaborative decision

making, in which a consensus must be reached on decisions. The Board is responsible for finances, human resources, management, and upper operations (P2). This includes taking in and deciding on applications.

The elimination of extensive and unnecessary upper management has streamlined processes and allowed the local values and best interest of the pasture to be put at the center of decision making (GI). Lengthy multi-year government procedures are no more; decisions are typically made and put into action in half an hour (P2; GI).

4.5.2 Pasture Manager

The pasture manager and the riders are hired by the Board (P2; P3). Much like any other job, a public posting is created, the Board reviews applications, hosts interviews, and a consensus-based decision is made on who they will hire (P1; GI). The requirements for pasture managers are limited to experience. The position is not an easy one to fill, as nearly the entire job is completed on horseback and they must be able to handle interactions with patrons at the same time (P1; P6). Previously, under the PFRA, pasture manager applications would be sent in and managers could be hired and sent to any one of the federal community pastures (P6). Under the PPA, the Board is able to get to know the applicant before they are hired and have complete say in who the pasture manager will be (P2). This also ties back to the importance of having rules that match the local context, as a pasture manager who understands the local context is most desirable.

4.6 Active Monitoring

4.6.1 Government

Under the PFRA, the PCP was promised that the federal government would be present when needed, but this often was not the case (GI). Members felt they were left standing

on their own, without the backing they had hoped for (GI). It was difficult to get federal representatives and technical advisors out to pasture lands (GI). Under the PPA, the provincial government has sent officials to check the stocking rates and ensure the land is not being overgrazed, but the government is otherwise uninvolved (P6).

4.6.2 CP Board

The Board is responsible for monitoring finance and managerial duties (P2). They are not involved with day-to-day operational monitoring; however, they do decide how rules will be enforced and support the pasture manager when needed (AGM Minutes 2019). The means of enforcement depends on the offence. For example, there is a fee for patrons not sorting cattle on round-up day. The separation of monitoring and enforcement duties connects with the principle of having clearly defined boundaries, which in this case, serves to reduce conflict among the Board and management.

4.6.3 Pasture Manager

The pasture manager monitors day-to-day operations on the pasture. They ensure that rules are being followed and charge fees where enforcement is needed (P5). Numbers of head on the pasture are extremely important and the manager routinely counts head when cattle are dropped off, rounded up, and throughout the grazing season. Managers are also responsible for ensuring health of both the cattle and land.

4.6.4 Patrons

While the patrons have no official responsibility to monitor the pasture, they do have a vested interest in its condition (P2; P6; GI). They have the pasture and their cattle on their mind all the time because it is tied to their own livelihoods (P5). Users can check on their cattle at any time, but they do have to notify the manager to unlock the gate (P3). All

patrons have the pasture manager and Board members phone numbers and are able to call if they perceive malpractice. In most cases, “phone calls solve everything” (P2). The remoteness of patrons can be a challenge, and this arrangement highlights the importance of local managers and riders monitoring pasture use.

4.7 Graduated sanctions

In general, “someone would really have to screw up” (P6) to be asked to leave the PCP. The most common offence at the PCP is failure to pay bills. In the past they have had some leniency on deadlines, but they are looking to “tighten up” rules and have created harder deadlines and larger deposits (P5). For example, one patron was relaxed on his payments and was spoken to regarding this (P5; P6; GI). At the end of the year he was not coming to sort and round-up his cattle, and as a result he was also spoken to about this. After repeating this behaviour for a number of seasons, he was finally asked not to return for the following season. This graduated approach provides leniency and encouragement to support patrons who might be struggling, yet in the end it upholds the mutual interests of other commons patrons.

4.8 Accessible conflict resolution mechanisms

Most conflict can quickly and easily be addressed through conversations with the pasture manager, which is the preferred mode of conflict resolution (P1; P2; P3; P4; P5; P6; GI). Where the pasture manager identifies a conflict with a user, he will discuss it with the user and assess fines where necessary (P5). In the case where a user identifies a conflict that cannot be addressed by the pasture manager or is unsatisfied with the pasture manager’s response, the user may contact the Board; however, the research participants noted that this situation has not yet occurred (P1; P3; P4). Part of the perceived benefit to

the PPA having taken over the PCP includes the ease in asking patrons to leave the pasture. There is no formal procedure, or hierarchy to consult with in order to make these decisions; the Board simply makes a round-table decision. On the other hand, they now do not have a government backing to retrieve unpaid dues (GI). In this regard, when patrons do not pay fees, they have no retrieval mechanism for the funds, except resorting to courts. In the past, a formal contract was signed by the patron with the federal government. Under the PPA, they enter a verbal agreement with the payment of the deposit. As discussed earlier, they have increased the deposit and moved forward the deadline for the deposit to guard against non-payment. It was added that the PCP does not face many conflicts because of the measures in place to avoid them. They have a positive relationship with the RM, avoid intra-patron conflict through individual pastures, combined with straightforward and well-understood rules (P2). They have been brought into a conflict situation with the RM on only one occasion, where gravel-mining was being performed incorrectly (P6). In this instance, the RM supported the PPA and the gravel-mining contractor was corrected.

Overall, participants agreed that conflict on the PCP seldomly occurs. This is in part attributed to the “good bunch of guys” (P2) that they are able to work with. The participants also agreed that if a patron cannot get along with everyone else in using the PCP, then the PCP is likely not a good fit for them (P1).

4.9 Local institutions respected by external authorities

The PCP covers approximately 14 000 acres of land, of which 12 000 acres (85%) are owned by the RM and 2 000 acres (15%) are owned by the province (P1; P2; AGM Minutes 2019; GI). Neither the province or the RM has challenged the PPA’s rules and

participants do not feel that the province or RM are a concern to their operations. From the outset, the AMCP recognized the local authority and rights of the PCP to self-govern.

4.9.1 Province

The land owned by the province includes the on-site house and headquarters, the breeding pasture, and the corrals (GI). These are on three separate sections of land that mesh into the land owned by the RM and because of this, there is not much else the province could use the land for (GI). Both the PPA and the province are happy with the PPA paying annual rent on the use of the land through the AMCP, since they have taken over provincial operations (P2; GI).

4.9.2 Rural Municipality of Portage la Prairie

The PPA gives the taxes on fees to the RM. In the winter months, when the land is not being used for grazing, the RM mines for gravel. In early spring, land reclamation takes place to minimize the area of unusable pasture (P5). It typically takes two years to fully reclaim an area (P5). There is a constant dialogue between the PPA and the RM on gravel mining (GI). On the RM's council are several small farmers, similar to those using the PCP, who want to see operations like the PPA succeed (P6).

4.10 Responsibility to govern CPR throughout the system

From the users, pasture manager and riders, to Board members, everyone has a “vested interest” (P2; GI) in the success of the PPA and PCP. In this way, everyone in the system has a sense of responsibility to governing the PCP.

4.10.1 PFRA

It was unanimously agreed that government decision making slowed the pasture operations and this ultimately showed a lack of responsiveness from the PFRA (P1; P2;

P4; P5; P6; GI). If improvements were needed on the pasture, a list of what was required would be compiled and sent in for assessment (P2). The government would approve or deny the request and if approved, they may not receive it for two or three years (P2).

Participants say that they are an example of a program improving without the involvement of senior governments (GI). They believe and can provide examples that demonstrate their locally developed institutions support socially and ecologically sustainable pasture management.

4.10.2 CP Board

The Board has cut back on expenses while investing more resources back into the pasture than during the PFRA era (P4). They have cleared brush to make round-up and land maintenance more efficient and they put in an additional dug-out that was never approved by the PFRA (P5). Rates have had to increase to account for initial start-up expenses, like farming equipment, but they have remained one of the lowest priced pastures in the area (P6; AGM Minutes 2019). The PPA has remained a not-for-profit organization, even though they did not have to. The PPA cares about its patrons and has chosen to keep the same goal the PFRA had of creating accessible pasture lands for lower income farmers (AGM Minutes 2019). Thus, the community pasture remains a form of social support, helping to sustain local communities.

4.10.3 Pasture Manager

Pasture managers are mainly responsible for taking care of cattle (P4). At this job, participants agreed that the current manager and rider do very well (P3; P4; AGM Minutes 2019, GI). The 2018 season saw 15 of 3400 cattle die – less than 0.5% of the cattle they were responsible for, which is considered an exceptionally low mortality rate

(AGM Minutes 2019). The pasture manager is responsible for handling patron interaction and land maintenance (P4), both of which, participants say they are satisfied with. It is evident through positive endorsement and results, that the pasture manager and rider feel a responsibility to the pasture and are able to effectively execute their responsibilities.

4.10.4 Patrons

The biggest thing users are responsible for is paying their bills (P2; P5; GI). Without receiving payment, the PPA cannot operate. There are very few and very simple rules that users are required to follow and with an influx of applications, the PPA intends to tighten the rules to ensure those with access are doing their best to be in compliance (P5).

Patrons are responsible for making sure the cattle they bring into the pasture are healthy and in good condition (P5). They are also responsible for providing their own bulls for breeding, a service that was previously provided by the PFRA (P5). In general, the patrons share a common culture and trust, which supports their commitment to common governance of the pasture (GI).

4.11 Sustainability

Having considered Ostrom's (1990; 2005) principles for sustainable CPRs, this study can now consider sustainability and what are considered to be the greatest threats, namely, gravel-mining, over-grazing, and industrial agriculture.

4.11.1 Gravel-mining

By law, the gravel-miners are required to perform land reclamation where they have extracted gravel (P5). Over a couple of years, they replace the topsoil and sow it with grass seed, then monitor the grass growth until it can sustain itself without their intervention (P1; P5). With the availability of the gravel on the PCP land becoming

scarcer, the RM has begun exploring areas they wouldn't have previously (P6).

Participants were in some disagreement over their perceptions of the mining.

There are perceived positive impacts of the mining, as they clear brush, creating greater area for the cattle to graze (P1; P5). Most agree that the reseeding is done adequately and do not mind the operations as long as they clean up and the pasture does not lose any acreage (P2). On the other hand, there are perceived negative impacts of the mining. Aesthetically, the operations are visually unappealing and described as “an eye-sore” (P5). For the pasture manager and rider, it can be inconvenient to work around when rounding up cattle (P5). One participant expressed concern over the long-term impacts of the mining (P6). Once the topsoil is disturbed, “it's never the same” (P6) and it may take a long time before it has the potential of becoming the same. Gravel extraction creates sloughs in its place and encourages the growth of weeds (GI). The passing of heavy machinery and trucks compacts the soil and transports burs throughout the pasture (GI). These burs eventually make it onto the cattle, which is uncomfortable for them (GI). Multiple participants expressed concern over taking out too much of the brush (GI).

4.11.2 Grazing

Grazing of the grassland by cattle is not a natural process to the native flora and fauna of the prairie ecozone, in which the PCP resides (P1; Parks Canada 2003). The presence of cattle has resulted in the loss of some native prairie species, like small flowering plants, as cattle either eat or trample them (P1). However, in comparison to crop production, grazing does allow for some native flora and fauna to occur (P1).

Stocking rates are updated regularly and are currently at 3400 head (AGM Minutes 2019). The participants say they have no intentions of exceeding this number as they do

not want to overgraze the land (P3; P4; P6). Rotational grazing takes place in an effort to mitigate the impacts of overgrazing (P5). The PFRA's mandate was to make sure that the PCP did not overgraze and the PPA intends on following this principle (P4).

4.11.3 Industrial agriculture

Community pastures were created to accommodate small farmers who could not afford to have their own pastures to grow their five to ten cattle. Since that time, the scenario of a small farmer with five to ten cattle no longer exists and the movement toward industrial agriculture is prominent, because “the margins on cattle have become [so] small that you need to have 300 head of cattle in order to meet your [financial] goal” (P6).

On the PCP, the maximum number of head that any one patron has is under 300. With 23 patrons supplying the 3400 head of cattle, that leaves a maximum of 135 head of cattle per patron. Most patrons of the community pasture use more than one pasture for their cattle, including keeping some cattle at home on their own pasture land and using other shared pasture resources (P6). Many participants predicted the number of patrons would decrease in the near future, with the stocking rate remaining the same. While some saw this as another way of reducing conflict, many see it as a threat to the well-being of an operation like a community pasture. As the number of patrons decrease, it may no longer be viable to have a community-based operation and the last few standing may decide to simply buy out the land or the RM may choose to sell it (P6). In the meantime, smaller patrons consider shutting down, a sign that the industrial trend is evident (P6; GI).

5 CONCLUSIONS

5.1 Applicability of Ostrom's framework

Ostrom's design principles for long-enduring institutions for governing sustainable resources was a valuable tool in this institutional analysis. They were useful in developing guiding questions and they encompassed basic conditions within the PCP. The principles were broad enough to be applied to the context and they were easily adapted to match the unique context. This study further confirms that Ostrom's principles are characteristics of robust institutions and these principles could likely be applied to other community pastures and common property resources. Future research could undertake comparative analysis involving the other three independent pastures in Manitoba to assess program transition and evolving practices.

5.2 The Portage Community Pasture as a Common Property Resource

A majority of the principles for long-enduring governance of CPRs were met or partially met by the PCP. The PCP shows strength with respect to rules that match the local context, graduated sanctions, conflict resolution mechanisms, and local institutions being respected by external authorities. This is exhibited by their local Board being responsible for decision making, having a system of graduated sanctions and accessible conflict resolution through the pasture manager and Board, and having a positive relationship with the municipal government.

The boundaries of the pasture are understood, but interpretations vary among user groups which has induced some conflict among the users. Systems for access differ amongst user groups and there is presently no system of access for new patrons. Monitoring the pasture for grazing is exceptional, and adequate for mining by the municipality, but improvements could be made for recreational users who sometimes fail to use the PCP

respectfully. Responsibility to govern the PCP is evident in the PPA, but there is a lack of responsibility in some recreational users who do not have financial interest in the pasture.

5.3 Perspectives on the Portage Community Pasture

In the view of the participants, the PCP has improved without the involvement of the federal government's program. Several challenges were identified by participants, including the lack of a system for access, long-term mining impacts, littering, and industrial farming. The current plan to implement a system of access that is agreed upon by all patrons should help mitigate challenges. While long-term mining impacts on the land are a concern, this can be mitigated by monitoring land reclamation processes and the RM's continued support for the PCP. A future study should assess the actual ecological impacts of the gravel extraction. Littering is a complex problem to solve since the land is owned by the RM. A system of access or fees for recreational users managed by the PPA is not an option, although this could be undertaken by a joint effort between the PPA and the RM. To mitigate the littering problem, diligent monitoring by users and sharing the responsibility to care for the land with all users is necessary. In order to encourage shared responsibility, the PPA might consider arranging a meeting with representatives from the other user groups to establish a set of shared principles or rules for use of the PCP (such as encouraging and enforcing users to use their sign in system in order to keep users accountable). Industrial farming is an inevitable movement for the entire sector, but the PPA's strong ties to the original mandate of supporting small farmers should encourage the longevity of their program. The PCP demonstrates Ostrom's principles of sustainable common property management and is thus currently seeing success and should see success in their future.

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Appendix A – Individual Interview Schedule

An Institutional Analysis of the Portage Community Pasture as a Common Property Resource

Interview Style: Semi-structured interviews, conversational format, general questions for discussion

**Project background information will be provided to all participants prior to the interview.*

**Researcher introduction followed by discussion of project overview and objectives, as described in the information letter. Informed consent obtained verbally. Participant has opportunity to ask any preliminary questions about the research.*

There are four main sets of questions: 1) Participant background information; 2) Access and Management; 3) Rules; and 4) Sustainability.

Participant and community pasture background:

1. Please tell me a little bit about yourself as well as your role?
 - 1.1. What is your position?
 - 1.2. How long have you been in this role(s)?
 - 1.3. Why did you become involved?

Access and management

3. How is access and use granted to the community pasture?
 - 3.1 Do certain user criteria need to be met?
 - 3.2 Is the process different for pasture users versus other users?
 - 3.3 Are your user and access rights clear to you?
4. How are pasture managers chosen and hired?
 - 4.1 Do they need to be local?
 - 4.2 Do they need to be users?
 - 4.3 Does the board vote on manager selection?

Rules

5. What changes, if any, have occurred following the end of the federal program?
 - 5.1 How have the changes impacted users and the land?
6. Have there been any changes to the rules governing users and their use of the pasture lands?
 - 6.2 Are rules easy to understand and abide by?
 - 6.3 Are there any informal rules or practices that you follow to ensure good management?
7. How are rules made, monitored, amended, and enforced?
 - 7.2 How are conflicts resolved?
8. Do you feel accountable to the rules (i.e. feel the need to abide by them)?
 - 8.1 Who do you feel accountable to (pasture manager, other users, etc.)?
9. Are your rules challenged by other governments?
 - 9.1 Does another level of government interfere with your rules to access and management?

Sustainability

10. Are there practices or uses that you think are positive highlights for the pasture? On the other hand, do you have any concerns about practices or uses that might challenge the long-term viability of the pasture?
11. Is there anything else I should know about the Portage Community Pasture?

Thank you for taking the time to speak with me today. You may be contacted in the near future for follow-up questions or clarifications. Do you have any questions about the interview that took place today or the research project in general?

Is there anyone you would recommend I speak to on this topic?

Do you want a copy of your transcript or other project materials to be sent to you? If so, please indicate how you wish to receive the transcripts/information:

Appendix B – Group Interview Schedule

Community Pastures in Canada

Interview Style: Semi-structured interviews, conversational format, general questions for discussion

**Project background information will be provided to all participants prior to the interview.*

**Researcher introduction followed by discussion of project overview and objectives, as described in the information letter. Informed consent obtained verbally. Participant has opportunity to ask any preliminary questions about the research.*

There are three main sets of questions: 1) Participant background information; 2) organization/community information; 3) natural resource program/policy Information; 4) land-management principles.

Participant background:

1. Please tell me a little bit about yourself as well as your role?
 - 1.1. What is your position?
 - 1.2. How long have you been in this role(s)?
 - 1.3. Why did you become involved?

Organization/Community background:

2. Please tell me about your community pasture.
 - 2.1. Can you tell me about the history of your community pasture?**
 - 2.2. What are the main uses of the community pasture and who are the main users?
 - 2.3. What are the main issues/are there any issues surrounding pasture use and management?**
 - 2.4. How does your community pasture organization and its users interact with other land users and interests in your community/your region/Canada/Internationally?

Policy/Program Information

3. What changes, if any, have resulted from the winding down of the federal community pastures Program?
4. Have there been any changes to the rules governing users and their use of the pasture lands?
 - 4.1. If yes, how have these changes impacted users?
 - 4.2. If yes, how have these changes impacted the land, flora and fauna?
5. Have there been any changes to the informal interactions among users and their use of the pasture lands?
 - 5.1. If yes, how have these changes impacted users?
 - 5.2. If yes, how have these changes impacted the land, flora and fauna?

6. Has anything new emerged from the transition of the community pastures Program?
Please discuss.

Commons Principles

- 7. Who is locally responsible for making, monitoring, and enforcing the rules?
 - 7.1. How are rules enforced and conflicts resolved?
 - 7.2. Is there a sense of accountability to both the formal and informal rules?
 - 7.3. Are the rules ever challenged by other authorities or governments?
- 8. Are the rules for use of the community pasture clear and easy to understand?
 - 8.1. Are the boundaries within and outside the community pasture clear?
 - 8.2. Are your and other users' rights to the land clear?
- 9. Are the suggested and current number of grazers on the community pastures sustainable?
 - 9.1. Are the other uses of the land operating sustainably?
 - 9.2. Do you feel conditions of the community pasture are changing?

Thank you for taking the time to speak with me today. You may be contacted in the near future for follow-up questions or clarifications. Do you have any questions about the interview that took place today or the research project in general?

Is there anyone you would recommend I speak to on this topic?

Do you want a copy of your transcript or other project materials to be sent to you? If so please indicate how you wish to receive the transcripts/information:
