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40 YEARS ON THE INTERNATIONAL FLATHEAD: AN ASSESSMENT OF TRANSBOUNDARY RIVER GOVERNANCE

Jedd Sankar-Gorton
University of Montana, Missoula

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By

JEDD EMMANUEL SANKAR-GORTON

B.A. Environmental Studies, Temple University,
Philadelphia, PA, 2010

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Approved by:

Scott Whittenburg, Dean of the Graduate School

Dr. Sarah J. Halvorson, Professor
Department of Geography

Dr. David Shively, Professor
Department of Geography

Dr. Len Broberg, Professor
Department of Environmental Studies

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Chairperson: Dr. Sarah J. Halvorson, PhD

ABSTRACT

Global population growth, climate change, and industrialization, are putting extreme pressures on worldwide freshwater supplies (Cosens 2010). Of the global freshwater supplies, transboundary water sources play a crucial role in sustaining populations. Over 40% of humans on Earth rely on a transboundary river or lake for access to water, and 90% of the world's population lives in countries that share bodies of water with at least one other country (UN 2008). Taken together, the motivations for improving governance of transboundary water systems have never been stronger. To meet the challenges associated with transboundary water governance, researchers working at multiple scales and across international, state and sub-state levels, have been applying the concepts of adaptive governance to analyze complex water contexts (Cosens 2010, Akamani and Wilson 2011, and Chaffin et al. 2016).

To contribute to this body of work and extend transboundary water governance literature, this study applies the lens of adaptive governance (AG) to an historic analysis of the environmental governance of the pristine and wild international Flathead River that cuts across the border between Canada and the United States. Proposed coal mines in the upper basin located in the western Canadian province of British Columbia (BC) threatened this diverse river environment from 1974 to 2014. Fortunately, dual mining bans passed by BC and the US in 2011 and 2014, respectively, removed this industrial threat from the entire basin. To better understand how these bans emerged this study identifies and examines four key historic events that were crucial to collaboration across borders and communities and to preventing coal mining. This study uses a conceptual framework for AG, which describes the criteria necessary for AG to emerge and the governance conditions that functional AG enables. This analytical framework helps to shed light on the extent to which AG emerged during the 40 year timespan and the ways in which the key events constituted adaptations. Results showed that an adaptive outcome was reached but that the complexities of transboundary environmental governance prevented adaptations in most instances. Examining the recent history of the international Flathead River advances our understanding of the unique sequence of events that resulted in preserving, at least for the present, a unique transboundary ecosystem. This understanding also contributes to the need for creative strategies to improve transboundary water governance outcomes globally.

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LIST OF ABBREVIATIONS

AG – Adaptive Governance
AKPPA – Akamina-Kishinena Provincial Protected Area
BBC – British Broadcasting Company
BC – British Columbia
BC-CL – British Columbia Crown Lands
BC-LUPP – British Columbia Land Use Planning Process
BC-MEM – British Columbia Ministry of Energy and Mines
BCWF – British Columbia Wildlife Federation
BPC – Be Prepared for Change
BWT – Boundary Waters Treaty
CBM – Coal Bed Methane
CPAWS – Canadian Parks and Wilderness Society
DC – Deal With Conflict
DNRC – Department of Natural Resource Conservation
EGC – Environmental Governance Context
E-NGO – Environmental Non-Governmental Organization
EPA – Environmental Protection Agency
ERDZ – Enhanced Resource Development Zone
ESA – Endangered Species Act
FBC – Flathead Basin Commission
FC – Flathead Coalition
FNF– Flathead National Forest
FRBEIS – Flathead River Basin Environmental Impact Study
FRISB – Flathead River International Study Board
FW – Flathead Wild
GNP – Glacier National Park
IJC – International Joint Commission
IRC – Induce Rule Compliance
IUCN – International Union for Conservation of Nature
KBLUP – Kootenay Boundary Land Use Plan
MOU – Memorandum of Understanding
MT – Montana
MT FGD – Montana Fish and Game Department
MT FWP – Montana Fish, Wildlife, and Parks
MWA – Montana Wilderness Association
NEPA – National Environmental Protection Act
NGO- Non-Governmental Organization
NPCA – National Parks Conservation Association
PF – Provide Infrastructure
PO – Provide Information
SCCL – Sage Creek Coal Limited
SKCT – Salish-Kootenai Confederated Tribes
SRMMP – Southern Rocky Mountain Management Plan
UMT – University of Montana

UN – United Nations
UNESCO – United Nations Educational, Scientific, and Cultural Organization
US- United States of America
USDA – United States Department of Agriculture
USFS – United States Forest Service
US NPS – United States National Park Service
WGIPP – Waterton-Glacier International Peace Park
WMA – Wildlife Management Area
WLNP – Waterton Lakes National Park
WSRA – Wild and Scenic Rivers

CHAPTER 1: INTRODUCTION

Global population growth, climate change, and industrialization are putting extreme pressures on worldwide freshwater supplies (Cosens 2010). These trends are resulting in increasing demand for water, decreasing groundwater levels, and increasingly polluted water bodies (Wolf, Yoffe, and Giordano 2003). These dangerous trends are especially relevant for the world's transboundary bodies of water, which are rivers or lakes that are divided by at least one international border. Transboundary water sources are a crucial supply of freshwater to global populations; over 40% of humans on Earth rely on a transboundary river or lake for access to water and 90% of the world's population lives in countries that share bodies of water with at least one other country (UN 2008). The combination of worldwide decreases in access to clean water with significant reliance on transboundary water sources means that water use in one country impacts the other countries sharing that resource in increasingly complex and important ways (Fischhendler and Feitelson 2005). This is not only true in terms of ensuring access to freshwater for people and industry as many of these transboundary water sources exist in basins that are also amongst the world's most important corridors for the connectivity of wildlife and entire ecological systems (Worboys et al. 2014). The need to improve understanding and function of transboundary water governance systems is especially pressing given that "water is the only scarce resource for which there is no substitute" (Wolf 1997, 334).

Several bodies of research have responded to this challenge. One emerging approach has been to look at bodies of water, specifically rivers in this case, from a novel perspective. Schonach (2017) shows that deconstructing river histories, in relation to human actors, can shed light on the evolving relationship between humans and nature. Building on this theme Schiff

(2017) set out to find lessons for modern transboundary water management through systematic historical analysis of a series of governance responses to pollution crises on Germany's Rhine River. Schiff's findings about how Rhine River stakeholders were able to navigate transboundary river pollution crises highlight the potential for a history of shared water governance to fuel a future of shared water governance, an insight born out in my study of the international Flathead River.

Research Setting

The international Flathead River emerges from its headwaters in southeastern British Columbia's (BC) Clark Range. Here, underlying the headwaters, is a large portion of the East Kootenay coalfields (Mills et al. 2012, 2). Designated as Crown Land, this land is, for the most part, managed by BC administrators. From its headwaters, the river runs south for 30 miles through glacially carved valleys before crossing into northwestern Montana. Upon entering Montana, the river becomes the border between Glacier National Park and a mixture of occasional parcels of private land and the Flathead National Forest. After flowing for 56 miles south of the BC-Montana border, the river meets its confluence with the Middle Fork of the Flathead River. Downstream, the river enters Flathead Lake. Eventually, these waters flow into the Columbia River and out into the Pacific Ocean.

The international boundary that the international Flathead River crosses between BC and Montana signifies more than which nation has jurisdiction over the river at one place or another. Crucially, the border also marks a significant cultural divide in how the river is valued, understood, and, even, named. In BC, the river is known simply as the Flathead River. In Montana, the river is known as the North Fork of the Flathead River. To recognize this

difference, as well as to cut down on confusion, the river is referred to exclusively as the international Flathead River in this study. As for the differences in valuation and understanding of the river, those stem from historic cultural differences in how public resources are viewed in each country, both broadly and locally. For instance, significant differences stem from the ramifications of provincial control over most public natural resources, as in BC and Canada, and federal control over most public natural resources, as in Montana and the US. Further, a notably larger population resides in the area surrounding the Montana stretch of the international Flathead River than in the area surrounding the BC stretch of the river. This too has had an impact on how the river is valued by those involved in its governance. Finally, US researchers have conducted a majority of the academic work on the international Flathead River. A result of this imbalance is that the river is more commonly referred to in the literature by its US name, the North Fork of the Flathead. This naming choice echoes the broader issue of US, and Montana, actors dictating too much of the broader conversation on the past, present, and future of the river and basin. The naming choice made in this study is done in an effort to begin to correct this imbalance and increase shared understanding and responsibility for the governance of the international Flathead. These themes are important to understanding the challenges associated with governance of this natural resource and they are explored further throughout the rest of this study.

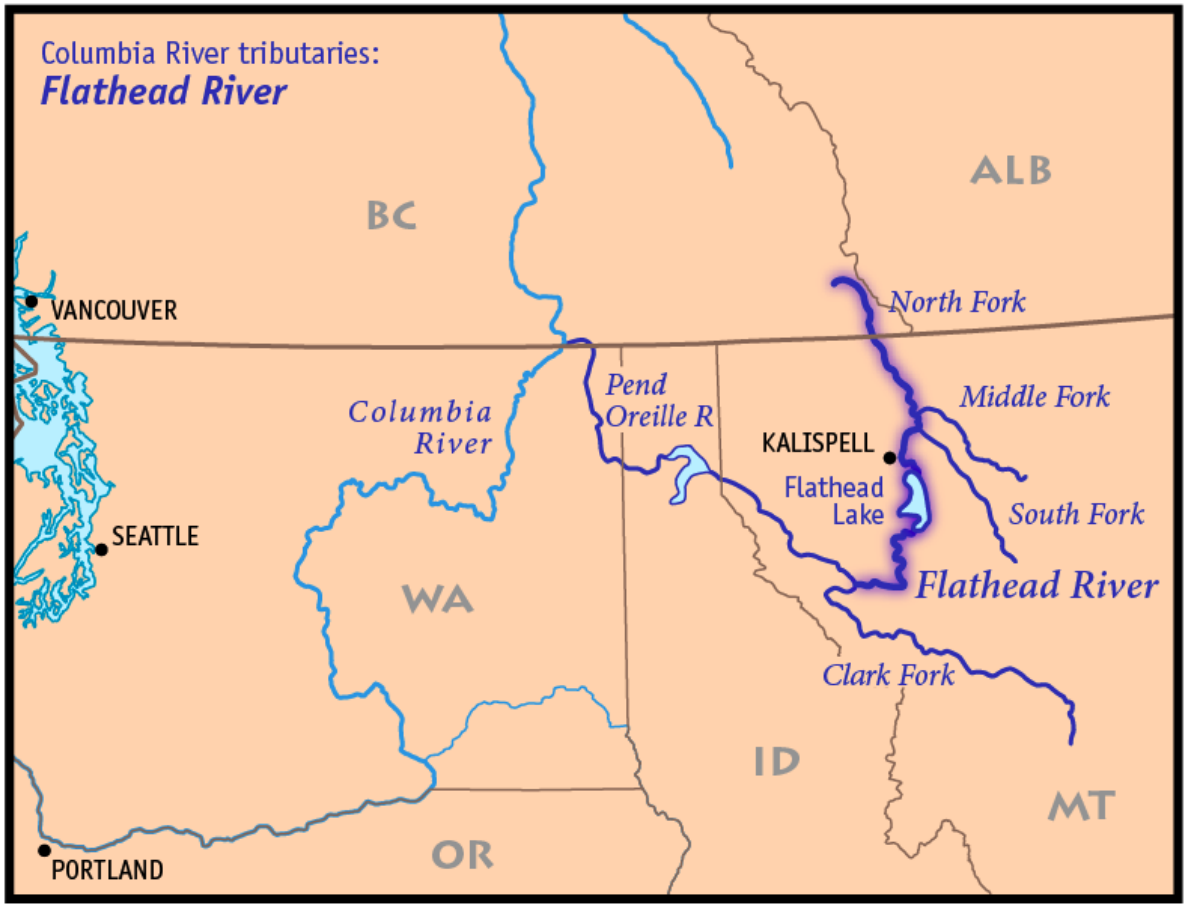

Figure 1: Map of Relation of international Flathead River to Columbia River *(Pfly, Columbia River Tributaries: North Fork of Flathead River, Wikipedia 2018)*

A Special Place

Over the course of the international Flathead's run from BC into Montana, the river and surrounding basin provide habitat for an impressive variety of aquatic and terrestrial organisms. A report from the UNESCO World Heritage Committee (2009, 4), notes that the international Flathead River watershed:

> …provides critical habitat for 16 species of carnivores and has the highest concentration of grizzly bears in the interior of the N. American continent. The watershed is also the last intact wildlife corridor for grizzly bear, wolf and Canadian lynx along the Canada/US border. The river, whose water is rated among the purest in the world, provides critical habitat for many native salmonid species, of which the endangered bull trout and genetically pure westslope cutthroat trout are of great importance.

The river basin's climate and ecosystem are also critical features of the international Flathead River. The basin is part of the Northern Continental Divide Ecosystem, which is home to alpine tundra, coniferous forests, prairie grasslands, and glacial lakes (May 1993). The elevation of the river basin is generally around 3500 feet above sea level. The climate of this area is a blend of coastal Pacific weather patterns and continental weather patterns (ibid.). Historically, the Ktunaxa and Salish peoples travelled through and inhabited this region (Thompson, Kootenai Culture Committee, and Pikunni Traditional Association 2015). However, European populations rose to dominance in the late 19th century. Their arrival marked the beginning of efforts to both extract natural resources from the area and, shortly after, to conserve the area through protective land designations (Buchholtz 1976). Glacier National Park, established in 1910, is the most notable example of the responsive efforts to conserve the region for future generations to experience. The dual narratives of resource exploitation and large-landscape conservation continued to define the environmental governance of this area for the rest of the 20th century and remain influential today.

In 2011 and 2014, BC and the United States (US) each, respectively, passed legislation forever banning mining and oil and gas exploration in the international Flathead River basin. These pieces of legislation were the culmination of over 40 years of disagreement between Canada and the US over what the best uses of the land in the basin were. The ramifications of these land use decisions had direct ties to the status of the clean waters of the international

Flathead River. This disagreement specifically centered on whether to approve or reject a series of proposed coal mines on the BC side of the basin around the headwaters of the river. The stakes of this conflict were particularly high, evidenced by dramatically contrasting references to the conflict in one 2007 publication and two 2009 publications written about the status of the river. At the same time that the UNESCO World Heritage Committee report (2009, 4), cited above, identified the river as being a major part of "one of the most intact and biologically productive ecosystems in North America," an *American Rivers* (2009) report identified the US stretch of the river as the 5th most endangered river in the US due to the threat of pollution resulting from potential upstream coal mining. A front page headline in the *Vancouver Sun* referred to the river as "BC's Most Endangered River" (Pynn 2007). The contrast between these two statuses, pristine and polluted, exemplifies what has been at stake for those who have been working for decades to protect the river and broader basin from environmental degradation.

Given the scale of the damage that would have occurred had mining proceeded, the dual 2011 and 2014 legislative bans on mining and oil and gas exploration are excellent examples of the potential of transboundary water governance to protect freshwater resources through governmental action. Nonetheless, the remarkable amount of work that went into the legislation's passage over more than four decades also demonstrates how complicated reaching agreements on shared water resources at the international scale can be.

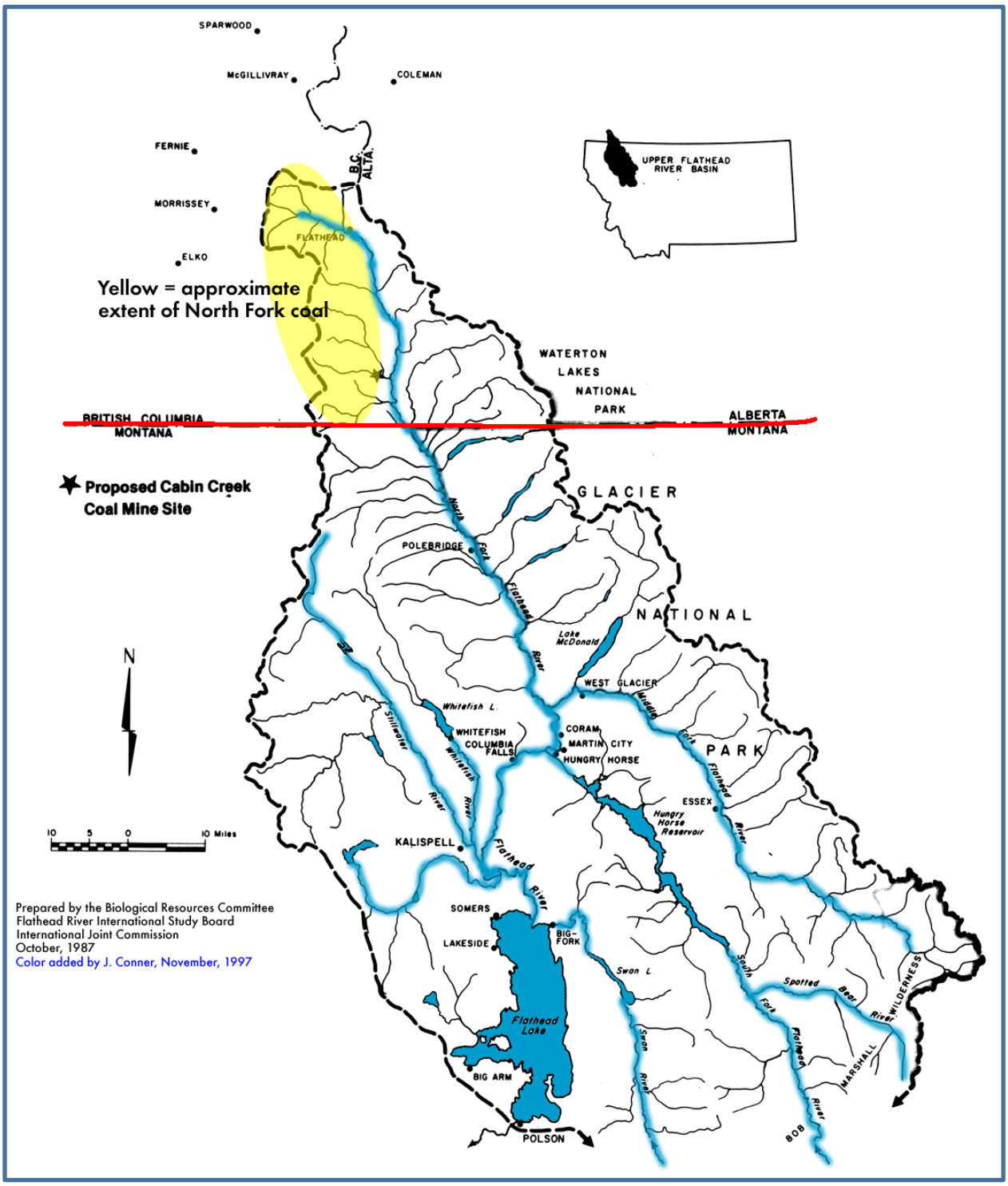

Figure 2: Map of Geographic Context of the International Flathead River *(FRISB, Upper Flathead River Basin, 1987)*

Emergence of Coal Mining Threat in the International Flathead

This story begins in 1974, when news broke in Montana of a proposed coal mine in the BC side of the international Flathead River basin (Wilson 1984, 112). The response of Montana elected officials, engaged members of the public, and local scientists was swift. By 1977, the newly formed local river-activist and -advocacy group, the Flathead Coalition, had helped to motivate (then) Montana Congressman Max Baucus to secure significant funding from the Environmental Protection Agency for a study on the potential impacts of resource extraction on the river and basin ecosystem (Flathead Basin Commission 1983). The results of this study, published in 1983, conclusively stated that the proposed coal mine on the BC side of the basin would pollute downstream water and terrestrial systems (Flathead Basin Commission 1983).

In the years following the study's publication, momentum built to confront the continued threat of coal mining in a more formal manner. For many of the people and groups involved in this effort, the goal became convincing the US and Canadian governments to reach out to the International Joint Commission (IJC) to request that a referral process take place (Sax and Keiter 1987). By 1985, there was pressure for the two governments to enter into such a referral process being generated by both communities in Montana and, increasingly, some local communities in BC (Pers. Comm. Expert #3, 2018). Given that Canada was not required to and perhaps, as the upstream party in this context, did not stand to gain much from such a process, their eventual agreement to enter into a referral process in 1985 was somewhat surprising (Thompson and Thomas 2007).

In 1988, the findings from the IJC referral study established that pollution from the proposed coal mine would negatively impact resources on the US side of the basin (Flathead

River International Study Board 1988). Further, the final recommendations of the referral were that the mine not be approved as proposed. In a sharp rebuke of the recommendations, the Canadian government never accepted the findings of the process (Sax and Keiter 2006, 296). Also, those involved in the environmental governance of the international Flathead at the Canadian federal and BC provincial levels became less interested in working with their downstream US counterparts in the following years (Sexton 2010).

Effects of the negative stance on collaboration were especially notable over the course of back-to-back land use planning processes in BC from 1993 to 2003 (Pers. Comm. Expert #6, 2018). Both of these processes made a point of designing systems that would facilitate the acceleration of extractive industry projects, especially coal, in and around the BC side of the river basin (British Columbia Ministry for Sustainable Resource Management 1997 and 2003). The efforts to accelerate extractive processes were especially evident in the plan finalized in 2003. The motivations for working to expedite industrial efforts were partially a result of the City of Vancouver, BC winning the bid for the 2010 Winter Olympics in 2003. The announcement about hosting the Winter Olympics meant that the Province of BC had even more reason to open up resource extraction in the hopes of generating revenue to help pay for the upcoming Olympics (Soucek 2012, 67 and Sax and Keiter 2006, 287).

In the run-up to the Olympics, a coalition of environmental non-profits (E-NGO's), calling themselves Flathead Wild, worked to take advantage of the additional public focus that the event would place on BC (Pers. Comm. Expert #5, 2018). The coalition mounted a series of successful awareness campaigns (Locke and McKinney 2013, 203). The coalition strategically reached out to the UNESCO World Heritage Committee to request that the status of the Waterton-Glacier International Peace Park, which is a UNESCO World Heritage Site, be

switched from “normal” to “at-risk” following their categorization system (UNESCO 2009). The representatives of the coalition argued that the justification for such a switch came from the growing environmental pressures being placed on the park, including the threat of pollution from coal mining (Pers. Comm. Expert #1, 2018). This effort proved successful, as the UNESCO committee voted to conduct an on-the-ground assessment of the park ecosystem to determine the credibility of the threat (Soucek 2012). In the months before the Olympics, findings from the assessment leaked to the press.

The findings were that the park ecosystem was indeed threatened and that the proposed coal mines were one of the clearest threats (Locke and McKinney 2013). This news, coupled with ever growing pressure from the US government and the Flathead Wild campaign, eventually forced the hand of the BC government (Soucek 2012). In the hours before the Olympics were set to open in 2010, BC announced that they would forever ban mining and oil and gas exploration in the international Flathead River basin (Locke and McKinney 2013). The signing of a Memorandum of Understanding between BC and Montana soon followed this announcement, which stated that Montana would also follow suit to remove extraction rights from its side of the basin (The Province of British Columbia and the State of Montana 2010). Though the MOU was not binding, it did succeed in paving the way for the binding mining bans enacted by BC and the US within the next 4 years (Pers. Comm. Expert #1, 2018) . As a result of these pieces of legislation, the international Flathead River and surrounding basin are better protected from environmental threats than ever before.

However, significant threats to the river’s water quality and broader environmental health of the basin still exist. These threats include warming river waters due to climate change, erosion due to clear cutting on the BC side of the basin, and growing human use impacts resulting from

increased visitation to the US side of the basin (Pers. Comm. Expert #9, 2018 and UNESCO 2009). Common sentiment seems to be that the work to protect the international Flathead is complete (Pers. Comm. Expert #1, 2018). This assumption, however, is far from the truth and suggests possible misunderstandings of what current protections on the river and basin actually guarantee. A pressing question remains: Is the concept of the dual mining bans better understood by the public as the removal of a possible threat or as the addition of a protective layer? Some experts say that the answer is as the addition of a protective layer. These experts argue that this perception could prevent the public from understanding the need for future efforts to put into place more effective protections, such as changing a land designation to remove certain uses (Pers. Comm. Experts #1 and #5, 2018).

Research Purpose and Design

The recent history of governance of the international Flathead ecosystem suggests that future environmental governance of the area needs to do more than just remove threats. Strategies to add layers of protection must also be adopted. Ideas that have been put forward in the past but have yet to come to fruition include expanding Waterton Lakes National Park on the BC side of the basin or adding the "Wilderness" designation to land in the Glacier View Ranger District on the US side of the basin in the Flathead National Forest. For these objectives to be accomplished groups, individuals, and governments will need to work together even more closely in the future than this history shows they did in the past.

The past has shown that protecting a place like the international Flathead, regardless of how highly valued it is, is extremely difficult. Still, the conservation successes that have been achieved are remarkable. As such, this accomplishment stands as a chapter in broader

transboundary water governance history that demands scrutiny not only to be better understood in its own terms; this history also demands analysis to identify what lessons might emerge about adaptive governance frameworks that could help inform and guide the future environmental governance of the international Flathead as well as of other transboundary water contexts globally. Enlisting the concept of adaptive governance (AG) and asking whether the most influential events that built towards the river's protection can be fruitfully understood as a series of adaptations to the governance system provides a way to proceed. Analyzing the role of adaptation in this transboundary river governance context requires creating nuanced, detailed accounts of key past environmental governance processes and outcomes. This study centers on only four historical events to ensure that the selected detailed accounts cover a wide range of time and can also be in-depth enough to produce meaningful analysis. These accounts will be of interest on their own but will also provide the basis for examining the salience of AG for understanding this history.

To achieve these goals, this study sets out two primary research objectives: 1) to describe the evolution of environmental governance of the international Flathead River over the past 40 years in relation to the efforts to prevent proposed mining on the BC side of the basin through the identification, description, and analysis of key governance events and outcomes; and 2) to evaluate whether any aspect of this evolution constituted the emergence of adaptive governance using the framework for AG put forth by Dietz, Ostrom, and Stern (2003) and refined by Chaffin, Gosnell, and Cosens (2014).

The recent history of the international Flathead is complex and multidimensional. Conducting the proposed research thus requires a strategy for focusing attention. In pursuit of achieving this study's objectives my research asks the following questions:

1) Over the past 40 years, what 4 processes or events of international Flathead River environmental governance were the most influential in preventing the development of coal mine on the BC side of the basin?
    a. Which institutions, laws, and social networks were involved in each of these processes or events?
2) Were the criteria necessary for AG to emerge, as identified by Dietz, Ostrom, and Stern (2003) and described by Chaffin, Gosnell, and Cosens (2014) met during any of the key processes or events?
    a. If so, did any of the outcomes of the events or processes constitute adaptations, as identified by Dietz, Ostrom, and Stern (2003) and described by Chaffin, Gosnell, and Cosens (2014)
    b. If not, what forces prevented the outcomes from being adaptive?

To answer these questions, the thesis is organized in the following way. Chapter 2 presents a literature review of research focusing on governance of natural systems. This includes descriptions of transboundary water governance, adaptive governance, and an emerging body of works that bring the approaches together. Chapter 3 discusses the methodological approach employed in this study and details my research plan. Next, I give a detailed description of how I approached answering each of my research questions and sub-questions. These descriptions lay out how I worked to operationalize the criteria and concepts of adaptive governance as thematic codes for content analysis.

Chapter 4 presents the results to RQ1 that identified influential events in the history of environmental governance of the international Flathead leading up to the dual mining bans. This chapter is broken into four sections; each one contains description of one of the selected influential events. These sections function as miniature case studies and each is broken down to explain the role of key actors, laws, and, governing bodies in reaching certain outcomes.

Description of these four events shows the diversity of institutions involved in the 40-year effort to protect the international Flathead from coal mining. Throughout each of the four events, this diversity influenced how decisions were made.

Chapter 5 presents the results to RQ2 and is divided into two sections. First, the four criteria necessary for adaptive governance to emerge are found to not have been present early in this history but to have emerged by the late 1970s. The second section continues the analysis from this period up until 2014 by examining the outcomes of each key event to see whether or not they constituted adaptations to the environmental governance context. Perhaps unsurprisingly, the common thread through these results is that the divide in governance between BC and the US severely restricts the potential for adaptive outcomes.

Chapter 6 concludes the thesis by reviewing the findings of the study and discussing lessons learned from an analysis of the key historic events. There are common threads present between each event that offer valuable insights into how long-term conservation successes can be reached in complex natural resource contexts. The chapter also contains discussion of the challenges I confronted in operationalizing the AG framework. Though each individual concept and criteria contained within the framework emerged from study of real life examples of environmental governance around the world, determining the optimal approach to identifying those criteria and concepts in historic environmental governance processes proved difficult.

CHAPTER 2: LITERATURE REVIEW

This chapter presents a brief description of the literature supporting the conceptual framework adopted for this study. The central theme of the literature reviewed is research focusing on improving understandings and functions of the governance of natural systems. As environmental pressures become more acute globally, better understandings of how environmental governance works and how to improve it are being sought by researchers. This interest has spawned multiple bodies of literature. The first body of literature that I address deals with transboundary water governance, which focuses on complex shared freshwater contexts. The second body of literature is that of adaptive governance, which emerges from social-ecological systems thinking. This work confronts the complexity of natural resource contexts by proposing a shift in thinking about how governance of these contexts should occur. Finally, I describe a growing body of work that apply the concepts of adaptive governance to the problems of transboundary water governance in a novel and productive way.

Transboundary Water Governance

My analysis of the governance of the international Flathead brings a geographic perspective to the topic. My geographic perspective is supported by the work of Cosens (2010), Hall (2009), Norman and Bakker (2009) and, Sadler (1986) which approach issues of US-Canada transboundary water governance from a foundation of geographical knowledge. This perspective helps to identify important socio-hydrological interactions within the basin. For example, almost all of the coal in the international Flathead River basin is on the BC side of the basin. This geographic information may help explain the mindset Canadian actors have brought

to past environmental governance decision-making processes. The need to generate novel understandings of transboundary water contexts is growing as environmental pressures on these systems become more acute globally. This pressure has led to greater incorporation of geographic perspectives into research on environmental governance.

Environmental governance is defined as "the system of institutions, including rules, laws, regulations, policies, social norms, and organizations involved in governing environmental resource use and/or protection" (Chaffin, Gosnell, and Cosens 2014, 1). For the purposes of this study, the system of actors and institutions involved in the environmental governance of a specific place or resource at any one point in time will be referred to as the environmental governance context (EGC) of that place or resource at that time. Though the term environmental governance context is a creation of this study, the idea for it emerges from discussion of systems of environmental governance by Chaffin, Gosnell, and Cosens (2014), Dietz, Ostrom, and Stern (2003), and Folke et al. (2005).

Research into environmental governance offers new ways of understanding and responding to complexity in natural resource contexts. This creative thinking can be especially helpful for contexts where governance of an ecological system, such as a river basin, is divided by an international border. This basin division means environmental governance of the system is shared by two countries, and the institutions present within each of them, who may or may not agree about the best use of the water in question (Akamani and Wilson 2011, 409). Further, the potential of the countries involved to agree on how to use the water is complicated by several intersecting factors. These complicating factors include divergent water-use agendas, mismatched scales of authority, and complex geographies (Wescoat and Halvorson 2013, 87).

Each of these complicating factors can impact governance of any transboundary water body, but they do so differently depending on the specific type of transboundary water body in question.

There are three different primary types of transboundary water bodies; common pool resources, integrated river basins, and upstream-downstream rivers (Sadler 1986, 361). The differences between each of these water bodies create varied power relationships between the countries sharing governance. These power relationships help define the roles that factors, such as mismatched scales of authority, can play in determining the shape of a transboundary water governance context. Sadler's (1986) brief descriptions of the attributes of each different type of transboundary water body helps to explain these concepts.

A common pool resource, such as the Great Lakes system, is one where both countries have equal potential to impact or be impacted by the condition of the resource. These impacts create a mutual concern between each country and incentivizes treating the resource well. An integrated river basin, such as the Columbia River, which contains some waters that cross back and forth between Canada and the US, is one where the actions of the upstream country have implications for both countries involved. This scenario creates incentives for both countries to work together on governance but can also complicate such efforts because of the dynamic interrelations created by such complex bio-geographies. The final type of transboundary water body is an upstream-downstream river, which simply passes from one country to another. A good example of this is the international Flathead River, which passes from BC and into Montana. The water use decisions made regarding these types of upstream-downstream rivers are not felt equally by both countries. Instead, for the most part, the impacts are primarily felt by the downstream country. This arrangement removes a significant amount of incentive for the

upstream country to act equitably towards the downstream country in water governance decision-making processes.

Each of these types of transboundary water bodies creates a different type of power relationship between the countries involved. Knowledge of the nuances of a specific transboundary river context, such as which country will be more impacted by certain actions, can make cooperation between countries sharing water governance responsibilities more likely than conflict between them (Sadler 1986, 359).

The strong connections between understanding the geopolitical specifics of a transboundary water context and improving governance outcomes in that context have been understood by researchers for over 20 years (Wolf 1997). For almost as long, researchers have also understood that social scientists' knowledge of transboundary water governance contexts is limited and that there has historically been insufficient data for researchers to draw meaningful conclusions about the causes of success or failure of these governance systems (Bernauer 2002, 2). Further, the criteria for measuring performance of these systems are disputed as well (ibid.). In response, some researchers have worked to build and then analyze large databases of historic data on successes and failures of transboundary water governance systems (Wolf, Yoffe, and Giordano 2003). Others have concentrated on developing in-depth case studies of individual rivers to look for specific trends and outcomes (Sneddon and Fox 2006).

Adaptive Governance

Another approach of researchers working on transboundary water governance at multiple scales and across international, state and sub-state levels, has been to apply the model of adaptive governance to analyses of complex water contexts (Akamani and Wilson 2011, Chaffin et al.

2016, and Cosens 2010). This approach to understanding environmental governance is described by Akamini and Wilson (2011) as offering an intuitive path forward given that the concepts underlying AG line up well with the complexity of transboundary water contexts. The research that spawned the concept of AG was initially motivated by a search for better means of confronting the growing complexity and uncertainty of natural resource contexts globally (Chaffin et al. 2014).

The concepts underlying adaptive governance initially emerged from work on common pool resources, such as research on offshore fisheries (Dietz, Ostrom, and Stern 2003). This work helped develop the concept of social-ecological systems, which rebukes the traditional understanding of relationships between humans and natural systems as being largely one-directional. Instead, social-ecological systems thinking views the relationship between humans and natural systems as a dynamic and complex feedback cycle that inextricably links ecological functions with human actions (Berkes and Folke 1998, Dietz, Ostrom, and Stern 2003, Folke et al. 2005, and Ostrom, Gardner, and Walker 1994). A central issue within this thinking is the question of whether or not the environmental governance framework of the social-ecological system can respond to change, be it a drought or pollution from a coal mine, in a co-evolutionary manner (Dietz, Ostrom, and Stern 2003, 1907-1908).

There are significant challenges associated with environmental governance of any system at any point in time. For instance, Dietz, Ostrom, and Stern (2003, 1911) say that that:

> The idea of governance conveys the difficulty of control, the need to proceed in the face of substantial uncertainty, and the importance of dealing with diversity and reconciling conflict among people and groups who differ in values, interests, perspectives, power, and the kinds of information they bring to situations.

For the system to be able to respond to changes in a selective, evolutionary manner that generates preferred social and ecological governance outcomes, the system must be flexible and responsive to new conditions. This co-evolution, or adaptation, is vital because ecological systems are constantly changing, whether in response to broader environmental pressures or shifting human uses (Folke et al. 2005). The concept of a form of environmental governance that can respond to change, such as shifting resource use, in a manner that embodies a co-evolutionary relationship emerges as AG.

Though there are multiple definitions of AG, a relatively straight forward one defines to concept of AG as "a range of interactions between actors, networks, organizations, and institutions emerging in pursuit of a desired state for social-ecological systems" (Chaffin, Gosnell, and Cosens 2014, 1). AG is thought to be particularly encouraging for the future of environmental governance because many of the extreme and dangerous environmental pressures being experienced globally are thought to be, at least partially, the result of traditional, top-down, state-centric approaches to natural resource governance (Akamani and Wilson 2011, 414). Discussion of AG can sometimes be abstract but the individual concepts underlying AG are more grounded. These concepts were initially put forward by Dietz, Ostrom, and Stern (2003).

In their review of the past decade's literature on AG, however, Chaffin, Gosnell, and Cosens (2014) make the set of concepts easier to work with by separating them into two lists and framing them more explicitly. Citing Dietz, Ostrom, and Stern (2003), Chaffin, Gosnell, and Cosens (2014) first put forth the conditions that are necessary for AG to emerge. This list is made up of four criteria: "inclusive dialogue between resource users (analytic deliberation); complex, redundant, layered institutions (nesting); mixed institutional types; and institutional designs that facilitate experimentation, learning, and change" (Chaffin, Gosnell, and Cosens

2014, 4). These are the conditions that must exist in the broader environmental governance context in order for AG to be able to emerge. Chaffin, Gosnell, and Cosens (2014) next describe what Dietz, Ostrom, and Stern (2003) said AG should do once it has emerged: "(1) provide information (science and local knowledge); (2) deal with conflict; (3) induce rule compliance; (4) provide infrastructure; and (5) be prepared for change" (ibid.). Taken together, these lists offer some clarity for what AG looks like in real-world contexts. In recognition of this, Chaffin, Gosnell, and Cosens (2014, 4) note that this second list "provides a prescriptive research agenda going forward."

Finding Utility for AG in Transboundary Water Governance Analyses

Though not explicitly based on this specific framework for AG, several recent works have adopted concepts related to AG and social-ecological systems thinking to their analysis of transboundary river governance (Cosens 2010, Akamani and Wilson 2011, and Chaffin et al. 2016). The work of Cosens (2010), in particular, offers an interesting approach to this research as she develops a perspective on the future of the Columbia River Treaty by looking back over a series of key events that have impacted the Columbia River basin since the final joint ramification of the treaty in 1964. This analysis of the causality of past events allows her to draw strong conclusions about the capacity of the treaty to protect the social-ecological system of the Columbia River basin from future uncertainty and change. Cosens (2010) determined that the administrative framework surrounding management of environmental systems in the US, and in particular the Columbia River system, is top-heavy due to excessive state and federal control of local issues. Specifically, Cosens (2010, 265) notes that to improve the potential of future management of the Columbia River to contend with increasing environmental complexity there must be an infusion of resources at the local level along with continued involvement of state and

federal programs to provide information and coordination. If this adjustment towards greater local control were to happen, the author does see potential for improved management of social-ecological systems through authorizing greater flexibility in decision-making and increased public participation to hold actors accountable. Cosens (2010, 265) finishes her article by calling for these reforms to be enacted "to allow us, as a responsible society, to respond to the challenge of managing multi-jurisdictional watersheds."

The work of Chaffin et al. (2016, 113), which incorporated concepts of adaptive governance into a quantitative social network analysis of stakeholders in the Klamath River basin, was partially inconclusive in identifying transitions towards adaptive governance. This result was not surprising though, as the authors note in the introduction that examples of adaptive governance in real-world contexts have been difficult to identify and analyze. The authors go on to explain that this difficulty is partly the result of adaptive governance generally being an emergent phenomenon instead of one that can be mandated or legislated. For Chaffin et al. (2016), another key roadblock is how long conditions in the social-ecological system can take to detectably respond to changes in the governance of the system. This lag in response, which they note can take decades, makes identifying environmental governance contexts to study in the search of knowledge on adaptive governance particularly difficult. Chaffin et al. (2016, 119) argue, based upon this difficulty, that studying transitions towards adaptive governance in real-time is the best response. In the conclusion of the article however, the authors also note that incorporation of data resulting from nuanced qualitative analyses of historical governance contexts can help illuminate how adaptive governance can be reached (ibid.). To test this finding, this study used qualitative methods to generate and question accounts of historical governance contexts. This process of analysis will be described in the following chapter.

CHAPTER 3: METHODOLOGY

Each transboundary water context has a distinct mix of geographic and political scales. This study is not an effort to compare the international Flathead to other rivers; instead, it is an effort to understand the specific forces at play in the distinct geopolitical space that is the international Flathead. For this reason, the present study adopts a case study approach to building knowledge of the history, evolution, and current state of international Flathead governance. The case study approach has been partnered with two qualitative methods to gather and analyze data. These qualitative methods, key informant interviews and content analysis of textual sources, enhance each other through research design intended to build towards conclusions in an iterative process. This process included the approach I took to operationalize the concepts and criteria in the AG framework. I will describe my use of key informant interviews first.

Key Informant Interviews

Key informants are people who are central figures in the area of analysis or gate keepers of the setting (Hesse-Biber 2017, 192). For this project, key informants were experts with extensive personal and professional experience in the events that produced the international Flathead's recent history, particularly in relation to the threat of coal mining. Purposive sampling, which produces a sample that can be assumed to be representative of a population, was used to select individuals for key informant interviews who met these criteria (Lavrakas 2008). I started with a list of potential participants with whom I was already acquainted and then employed snowball sampling to reach the rest. This approach was especially important in generating contact information for Canadian subjects, with whom I was less familiar at the

beginning of the research. In total, I interviewed 10 experts, six from the US and four from Canada. Each of these people, nine men and one woman, had first-hand experience with some aspect of the effort to prevent coal mining on the BC side of the international Flathead over the past 40 years. The list of experts included freshwater ecologists, conservation journalists, E-NGO staff, and City Councilman.

I developed and used a semi-structured interview guide, shown below in Appendix 1, which guaranteed that the interviews were consistent and comparable but also allowed flexibility. Probes and follow-up questions employed where clarification or greater depth was needed. The interviews generally lasted between 40 minutes and an hour and a half. I transcribed each interview fully in preparation for content analysis. Due to time and travel constraints, only three interviews were conducted in person. Broadly, the topic of the interview guide was the evolution of governance of the international Flathead over the past 40 years in response to the threat of coal mining in the BC side of the basin. For instance, during the interviews, subjects were asked specifically to name which events in the history of proposed coal mining in the international Flathead they considered to be most influential in preventing the mining from ever occurring. Answers to questions like these were used to inform findings generated through use of the next method, content analysis.

Content Analysis

Given the historic timeframe as well as the breadth of variables that influence and shape governance of a dynamic natural resource, textual sources offer some of the greatest depth of data on this topic. As a result, the primary method in this study is qualitative content analysis, which is a technique for systematic analysis of textual sources (Mayring 2000). A broad range of

texts were potentially useful including newspaper articles, gray literature (such as reports generated by ecological research), and peer-reviewed journal articles. The process of identifying, locating, and collecting these texts from online databases and physical archives has been the work of the past two years; conducted while also completing multiple, more focused reports leading up to the present thesis project.

I sought to collect documents that addressed the history of efforts to prevent coal mining in the international Flathead from 1974 to 2014. To do this, I searched multiple online databases, including the University of Montana Mansfield Library, ResearchGate, and the Internet Archive. In these searches I used search terms such as "Cabin Creek coal mine," "North Fork of the Flathead River," and "IJC referral." I also visited the Glacier National Park archives where documents and records relating to the administration of the park are stored and the Whitefish, Montana office of the National Parks Conservation Association where papers relating to past international Flathead conservation efforts are stored. At these archives, I searched documents initially by year and then by key terms similar to the ones previously mentioned.

All of these documents were saved as word-searchable PDFs. This collection of material included the transcripts from the key informant interviews I conducted. The resulting database spans 40 years of international Flathead history and is focused on the proposed coal mines in the BC Flathead basin. The database I created encompasses the following: 750 pages of relevant newspaper articles, correspondence of elected officials and, environmental non-profit reports; ten reports describing the findings of scientific studies of the international Flathead; ten key informant interview transcripts; and over 75 academic works ranging from several theses written by former University of Montana students to articles from law reviews and academic journals. Analysis of these sources, along with my own extensive personal exposure to the international

Flathead basin over the past seven years, provided me with a foundation of knowledge upon which to build through my research endeavors.

Next, I read the collected material and organized it in four stages that were linked to the research questions driving my study. Stage one focused on coding data to answer RQ1: *over the past 40 years, what 4-6 processes or events of international Flathead River environmental governance were the most influential in preventing the development of coal mine on the BC side of the basin?* This stage also included analysis of the data, which also served as the beginning of coding to answer RQ1 because RQ1 required chronological analysis. As I collected documents, I stored and organized them on the following basis: date of event discussed, events or topics covered, and source. I created a catalog of these documents using Excel. Then, using the date of topic discussed rather than the date of publication, I arranged the documents chronologically into folders divided by time period (i.e. decade). When documents covered multiple decades, they were saved as different documents in each correct folder with the different relevant content highlighted. This process was methodical in that I used a deductive coding process to identify the decade or decades the source covered, the topics addressed, and a part of the research process. This interaction with the data got me closer to identifying the key events in this timeline. Based on this initial ordering and analysis, I created a preliminary list of key events based on the frequency an event was described as being influential, crucial, or important in both the interview transcripts and the document database. This initial list of events is provided below in chronological order. Given the historical nature of the subject, this list also came to serve as a timeline of the story, becoming more complete as the analysis progressed.

Year(s)	Preliminary List of Key Historic Events
1974	the news of the proposed Cabin Ck. mine breaking
1974-1977	the emergence of the Flathead Coalition
1974-1977	the pressure applied by (then) Representative Max Baucus resulting in federal attention and funding
1985-1988	the IJC referral and resulting study publication
1993-2003	the BC land use planning processes around the turn of the century
mid-2000's	the news of proposed coal bed methane (CBM) mining in the BC Flathead basin
mid-2000's	the emergence of a transboundary coalition of E-NGO's, Flathead Wild, in opposition of Flathead mining
2004	the BC sale of permits to conduct CBM extraction receiving no bids
2009	the UNESCO/IUCN study on the impacts of coal mining on Waterton-Glacier IPP
late-2000's	the collaboration of (then) Montana Governor Brian Schweitzer with (then) BC Premiere Gordon Campbell
2010	the signing of the MOU between MT and BC on the eve of the 2010 Winter Olympics in Vancouver, BC
2011-2014	BC and the US formally removing mineral rights from the international Flathead basin

Table 1: Preliminary List of Key Historic Events

Using additional familiarity with the events gained from conducting the thematic coding required to answer RQ2 and RQ2a, I later refined this list and selected four critical events to examine closely. Explanation of the refinement process is provided at the beginning of Chapter 4, which presents the four case studies.

Stage two focused on analyzing data to answer RQ1a: W*hich institutions, laws, and social networks were involved in these key processes or events?* To answer this question, I developed case studies of these events drawing on information and knowledge I gained during the interviews and the organization and coding of documents. These sources, along with my own extensive personal exposure to the North Fork basin over the past seven years, provided me with context and background to inform the selection of the case studies. Having previously organized my documents by decade of topic discussed, I was able to efficiently organize them by relevance

to each key event. This process left me with four folders, each composed of the documents containing the necessary data I needed to identify the most relevant aspects of each event. Development of each case study was the result of then compiling the information contained within the documents and using the information to build historical descriptions of how each event proceeded, who the key institutions and people involved were, and why they were important.

The third stage of content analysis focused on coding to answer RQ2: *Were the criteria necessary for AG to emerge, as identified by Dietz, Ostrom, and Stern (2003) and described by Chaffin, Gosnell, and Cosens (2014), met during any of the key processes or events?* Here, I operationalized the four criteria necessary for AG to emerge in order for me to use them as thematic codes. These four criteria are: (1) analytic deliberation; (2) nested governance; (3) mixed institutional types; and (4) institutional designs that facilitate experimentation, learning, and change. To operationalize these criteria I reviewed seminal articles on AG including the works of Dietz, Ostrom, and Stern (2003), Folke et al. (2005), Cosens (2010) and Chaffin, Gosnell, and Cosens (2014) and identified and recorded definitions of each criterion that were clear and well suited to this analysis. At the same time, I noted key words authors used when to describe these criteria and collected them into a list. Reviewing this material —the key terms and the definitions—I chose definitions and key terms that I thought most clearly and accurately reflected the criteria as they might appear in my textual sources. Then, I organized this material into a table. (please see *Table 5* in Chapter 5). This table defines each criteria succinctly and lists key phrases or ideas that are associated with it. Not all of these criteria are well-established concepts in the literature. Further, none of them are easily measured. This table offered a way to view each criteria as a series of ideas. Those ideas, in tandem with the criteria themselves, were

then used as thematic codes, in analysis of the relevant institutions and their interrelationships to answer the research question.

The fourth stage of content analysis involved coding data to address RQ2a*: Did any of the outcomes of the events or processes constitute adaptations, as identified by Dietz, Ostrom, and Stern (2003) and described by Chaffin, Gosnell, and Cosens (2014)? And, if not, what forces prevented the outcomes from being adaptive?* This coding followed a process similar to the one used to answer RQ2. When governance outcomes are adaptive to the shifting conditions of the surrounding EGC they bring about the following characteristics of environmental governance, as put forth by the AG framework: outcomes should provide information (scientific and local knowledge), deal with conflict, induce rule compliance, provide infrastructure, and be prepared for change. Next, I operationalized these characteristics as thematic codes for use in content analysis of the four key events. This process mirrored the one used to answer RQ2: I consulted the same seminal articles for definitions and key terms and ideas. To organize these, I developed a similar table, which is shown in Chapter 5 as *Table 6*. I then used these five criteria, and their associated key terms and ideas, as thematic codes to analyze textual data associated with each of the outcomes from the key events that RQ2 had determined met the criteria necessary for AG to emerge. To do this, I searched the data I had on each event using the list of key terms I had created looking for ideas that illustrated the associated concept. Where the key terms or ideas of a concept were found, I determined whether there was sufficient evidence to conclude that the instance qualified as fitting the definition of the concept in question. The results of these analyses are presented in Chapter 5 in a series of simple tables that accompany brief justifications of the determinations. Included within these descriptions is a synthesis and assessment in regards to whether or not the outcome of the key event being analyzed was adaptive.

Reflections on Position and Process

Importantly, because of my extended contact with the data and place, I brought an informed perspective to the thesis research and writing process. I have considered the Flathead as a river to be protected since I first saw it in 2010. This conviction, as well as my understanding of the complexity of this goal, has only deepened as the Flathead Valley has become my home and the broader Flathead basin my backyard. My scholarly research has expanded and refined my comprehension of the issues as well as the precarious realities of this majestic basin. These realities can be viewed a number of ways through the lens of academic integrity.

The views I brought to my thesis work could have conceivably closed my mind to ideas or information that seemed counter to my prior understanding. To avoid this, I purposefully re-examined my understanding of crucial events as new information was discovered. My initial lack of knowledge about the Canadian perspective on these issues exemplifies this. On the recommendation of my thesis committee following my thesis proposal defense, I sought out Canadian perspectives through interviews with experts from BC and articles from Canadian academic institutes and media outlets. As it turns out, the basic narrative I learned from my Canadian sources is, indeed, different in significant ways from the typical US narrative. These realizations altered the direction of my work in notable ways. Not only was this discovery somewhat surprising to me initially, it was also instructive. I now more fully understand how, especially in transboundary contexts, the story you hear from actors on one side of the border, however detailed, will always differ in important ways from the story you hear from the other side.

CHAPTER 4: KEY HISTORIC EVENTS IDENTIFIED AND DESCRIBED

The results to RQ1 are presented in this chapter. These results are presented in two major sections. First, the details of the logic and sampling approach are given for how the entries of the preliminary list of key historic events were weighted to generate a list ranked by how influential each event was. Second, brief but detailed descriptions of each of the selected most influential events are offered. This analytic process advances the analysis of international Flathead River governance along a 40 year timeline from events in 1974 to events in 2014. Over the course of this window of time, news of proposed coal mining on the BC side of the international Flathead basin becomes public in the US leading to a series of public responses, the US and Canada agree to enter into an IJC referral process to resolve their disagreement over proposed coal mining in the BC side of international Flathead basin, a series of land use planning processes in BC focus on facilitating extractive industry efforts in the international Flathead Basin, and, finally, BC and the US agree to forever ban mining and extractive processes in the international Flathead in the run-up to the 2010 Winter Olympics in Vancouver following a public awareness campaign about the proposed mining.

Identification of Key Historic Events

In identifying each of these key events, several characteristics were taken into account when weighting each event. These included the frequency of mentions of an event in interviews, how close events were to one another in the timeline, whether or not an event was mentioned by interview subjects on both sides of the border, and the incidence of mentions of events in relevant literature. I will give multiple examples of this process to shed light on how

determinations occurred. Some events were given high places on the list even though they were not frequently mentioned in both the literature and interview transcripts. The best example of this are first three events in the preliminary list, all having to do with the initial response of river advocates to the news of a proposed coal mine, and the BC land use planning processes around the turn of the century. These events were less mentioned for good reasons. First, the three events from the beginning of the timeline were frequently mentioned in literature analyzing that time period. The events were not frequently mentioned in interviews though. This appears to largely be due to the fact that only two of the experts that I interviewed were involved in the proceedings at that time. Most of the other eight were aware of these events but they were not personally involved in them and seemed less willing to speak to their influence on future events. When these factors were weighed, these three events moved high up the list. Also, because each of these events was hard to separate from one another due to their tight causal relationships, they were combined into one single entry on the list.

Next, the BC land use planning processes around the turn of the century were only occasionally mentioned in the literature and mentioned by fewer than half of the interviewees as having been crucial. The reason that this event was still weighted as being highly influential is that all of the people who I interviewed who were involved in the processes, (i.e. the four Canadians interviewed), placed high importance on the outcomes of the planning processes. Given that these were also the people best positioned to speak to the importance of this event, the event was placed high on the list weighed by overall influence. The final list, weighted by levels of influence, is below.

Year(s)	List of Key Historic Events Ranked by Influence
2009-2010	**1. the UNESCO/IUCN study on the impacts of coal mining on Waterton-Glacier IPP + the signing of the MOU between MT and BC on the eve of the 2010 Winter Olympics in Vancouver, BC**
1985-1988	**2. the IJC referral and resulting study publication**
1974-1977	**3. the news of the proposed mine breaking in 1974 + the emergence of the Flathead Coalition + the pressure applied by (then) Representative Max Baucus resulting in federal attention and funding**
1993-2003	**4. the BC land use planning processes around the turn of the century**
2011-2014	5. BC and the US formally removing mineral rights from the international Flathead basin
mid-2000's	6. the news of proposed coal bed methane (CBM) mining in the BC Flathead basin
mid-2000's	7. the emergence of a transboundary coalition of E-NGO's, Flathead Wild, in opposition of Flathead mining
2004	8. the BC sale of permits to conduct CBM extraction receiving no bids
late-2000's	9. the collaboration of (then) Montana Governor Brian Schweitzer with (then) BC Premiere Gordon Campbell

Table 2: List of Key Historic Events Ranked by Influence

The final four most influential events are bolded at the top of the above list. Similar to how the events of the 1970s were hard to separate from one another, as previously discussed, the UNESCO/IUCN study findings, leaked to the public in 2009, were hard to separate from the MOU signing on the eve of the 2010 Winter Olympics. For this reason, the two events were combined into one. Fortunately, those two events, along with the 1985 IJC referral process, were mentioned by every single interview subject and all of the relevant literature as being extremely influential. As for selections #3 and #4, previously discussed factors moved them up the list. However, another important reason that BC planning processes were placed high on the final list was that, similar to how the events of the mid-1970's primarily involved US actors and

governance, it primarily involved BC actors and governance. These selections also meant that the final set of events would include each decade of the subject's history.

Description of Historic Events: Context and Synthesis

The following four sections outline the events and processes between 1974 and 2014 that had the most influence on preventing coal mining and other extractive activities on the BC side of the international Flathead River basin. Each of the four sections is a brief historical description. Though each section can be seen as a freestanding event and/or process, viewing the four sections collectively, as a progression, offers a clearer explanation of how conservation advocates were able to prevent the successful development of coal mining operations in the river basin. Viewing the four sections as glimpses into the events on a historical timeline that is full of important occurrences outside of the ones described here is helpful for understanding why the BC and Canadian governments eventually acceded and agreed to remove mining rights. Specifically, what is not well captured by the description of the four selected freestanding events and processes is that between each of them momentum was building, networks were being developed, and decisions were being made amongst both those interested in preventing mining and those interested in enabling or conducting mining. For instance, the history of the coalition of E-NGOs that was vital to the final push to convince BC to remove mining rights in the basin can be traced back to 1974 when river advocates first responded to news of a proposed coal mine. Though the descriptions offered in the following four sections offer depth that allows for deeper understanding of the causality and meaning of events, remembering that these events were strongly influenced by factors that were in play leading up to them is important as well.

Cabin Creek Realities

In Montana in early 1974, news broke that a transnational coal mining company was seriously assessing the viability of a mine site in southeast British Columbia in the Flathead Basin. The details that surfaced explained the company Sage Creek Coal Limited (SCCL) had been exploring Crown Land, which is analogous to public land in the US, in the area since 1968 (Wilson 1984, 112). In pursuit of the ideal mine site, SCCL had been conducting mapping, trenching, drilling, and testing in the basin (Espeseth 1979, 5). The coal in the upper basin is particularly valuable because it is metallurgical coal that can be used in the steel making process but challenging to extract due to the complex surrounding terrain (Wilson 1984 and Espeseth 1979).

Eventually, SCCL settled on a site that encompassed two hills on either side of Cabin Creek, which is a tributary of the international Flathead (Flathead Basin Commission 1983). Industry-friendly regulations in BC slowed release of news in Montana about the exploration and of a proposal to conduct mining on this site (Espeseth 1979, 9). Montana officials became aware of what they called "the rumors" of an impending coal mine and inquired for more information (Schneider 1976, 38). As a result of these inquiries, information about the mines slowly reached the public through a series of articles in 1974 and 1975 in local Montana and US national publications.

Some Montana and US government officials were quick to take a strong stance on the proposed mine. Perhaps the most outspoken was Jim Posewitz, then chief of the Environment and Information Section of the Montana Fish and Game Department (MFGD). Posewitz is quoted in a 1974 *Missoulian* article saying that "there's reason to be concerned (about the mining

activities)" and that "there's quite a bit more probing to do before we'll know exactly what impact the coal mine across Cabin Creek would have on the Flathead" (Burk 1974, 11). Another administrative body on the US side that responded to the news was the Flathead National Forest office. Officials there noted that in light of this news the Forest Service should set up a water quality monitoring station on the US side of the Flathead before mining began to get baseline water quality data (Burk 1974, 11). Though the trickle of information on this issue hindered public response to the news, by late 1974 both informal and formal resistance had begun.

The most notable informal resistance to the proposed mine was the community advocacy group, the Flathead Coalition. This group formed around the idea of uniting a broad base of opposition to pollution from coal mining in the Flathead basin (Wilson 1984, 113). The cause soon attracted support among an impressive array of institutions, including the Kalispell Chamber of Commerce, the Confederated Salish and Kootenai Tribes, the British Columbia Wildlife Federation, the League of Women Voters, the National Parks Conservation Association, and many other citizen groups (Espeseth 1979, 92). As Wayne Herman, founding member of the coalition and an eventual member of the board of directors noted in 2004, "This coalition brought together broad segments of our community who typically were not in agreement about various community issues. But this mining threat to our waters was a unifying issue back in the 1970s…" (Flathead Coalition 2004, 1).

Indeed, by the end of 1975, the FC was publishing bi-monthly newsletters, investigating potential legal actions against SCCL, and strongly lobbying Montana elected officials to formally oppose the mine proposal as well as fund a study on its potential effects (Flathead Basin Commission 1983, 11 and Wilson 1984, 113). These actions spurred both (then) Representative Max Baucus and the Montana State Legislature. Initially, Baucus pursued meetings with

Canadian officials, including a meeting with representatives of SCCL's parent company, Rio Algom, in Toronto, to gather information on the issue (Hoklin 1977, 2). Following that meeting, Baucus formally called upon the US State Department to pursue an International Joint Commission referral with Canada under the Boundary Waters Treaty to investigate the mine (ibid.).

Responding to rising public outcry, in 1975, the Montana State Legislature called upon the state Department of Natural Resources and Conservation (DNRC) to review state held data on the Flathead riverine system as well as to assess the implications of mining in the area (Wilson 1984, 113). Though there was a significant amount of data for the DNRC to use in this study, the analysis published in 1977 was inadequate in assessing the specific potential impacts of the mine (ibid.). This outcome suggested to local conservation advocates that their voice was loud enough to make change, i.e. trigger a state-level study such as the 1977 DNRC study, but not yet loud enough to make a significant difference, i.e. trigger a study with enough funding to collect the information necessary to draw clear conclusions. As a result, groups of local conservation advocates began to more strongly lobby (then) Representative Max Baucus to work to generate federal funding for a study.

The most important groups in this effort were the Flathead Coalition and the Flathead Interagency Technical Committee, which was an ad-hoc group of local scientists and resource policy makers (Flathead Basin Commission 1983, 11). This group was convinced that gathering as much scientific information as possible on the impacts of coal mining was the best way to help preserve the international Flathead (ibid.). Urged on by the Flathead Coalition, the committee found that their efforts in convincing Baucus were successful (Wilson 1984, 113). He was able to secure a nearly three million dollar appropriation from the Environmental Protection

Agency in 1977 to conduct an environmental impact study of the Flathead basin (Flathead Basin Commission 1983, 1). Aptly, this study would come to be named the Flathead River Basin Environmental Impact Study (FRBEIS).

The structure of this study and the decision-making process behind its design is an important part of the overall relevance of the study. The study did not focus on a single development project or a limited impact area and instead used a "regional perspective" to consider the entire basin and the cumulative impacts of "many seemingly unrelated" actions (Flathead Basin Commission 1983, 12). This meant that areas of study focus were not just different aspects of the riverine system but were also the regional economy, airshed, aquatic ecosystem, and riparian wildlife habitat (ibid.). The holistic nature of this approach ensured that there would be an opportunity for previously unseen connections between forces to emerge and for there to be a well-rounded body of baseline data for future use. Interestingly, though the EIS in FRBEIS is the same acronym as that of an Environmental Impact Statement, FRBEIS came before the National Environmental Protection Act (NEPA) was passed. Thus, the FRBEIS was not an EIS in the now common sense. Instead, FRBEIS was an environmental impact study.

A significant reason that this progressive holistic approach was taken on the FRBEIS was that, as the Flathead Basin Commission final report (1983, 12) notes, "because the study was initiated in direct response to residents' concerns, (the) EPA established a locally based, volunteer citizen panel to run the study." This panel was composed of a diverse and locally representative set of engaged individuals. As one of my interview subjects noted about the importance of the selection of local scientists: "These were local scientists who we knew from (GNP), from our community, from FWP (Montana Fish, Wildlife, and Parks)…they were actually trusted individuals even at a time when the Feds were not always really welcomed or

trusted around here" (Pers. Comm. Expert #1, 2018). To further the significance of this selection, the panel also had oversight over study design, funding allocation, and overall focus of the research. For these reasons, FRBEIS stands out in terms of transparency, involvement of non-traditional perspectives, viewing the study site as a bioregion with interconnected human and ecological interactions, understanding of position in the geopolitical context present at the time, and general thoroughness.

Not surprisingly, the findings of the study were that the potential side effects of coal mining on Cabin Creek would have been devastating. An interesting twist, though, is that many of the other possible resource extraction activities on both sides of the international Flathead basin, such as logging or oil and natural gas drilling, were also found to have many potentially negative impacts. Whether simply through due-diligence or, as Wilson (1984, 114) argues, an intentional effort to force BC's hand by showing that the US was concerned with environmental harm originating from actions anywhere in the basin and not just on the BC side. Either way, the study results soon proved to be useful as BC offered an opportunity for Montana to submit comments on the proposed coal mines. A large portion of the Montana submission consisted of data from the FRBEIS. As a result of the pressure applied by these findings, the BC government did add conditions to its approval of the mining project for the company, Sage Creek (Wilson 1984, 117). This added a level of scientific analysis to the permitting process for which the company had not previously been responsible. Another key outcome of this study was the creation of the Flathead Basin Commission.

The findings of the FRBEIS revealed the complexity of preserving the high quality of the water found within the Flathead system as well as the direness of the threat of coal mining to the system. Upon reviewing these findings, the Montana Legislature voted in 1983 to create and

fund the Flathead Basin Commission (FBC) (Flathead Basin Commission 1983, 174). So deep was the connection between the FRBEIS findings and the passage of the FBC Law that the enabling legislation for the FBC makes up the final two pages of the FRBEIS report (ibid.). Simply put, the Montana Legislature hoped that the FBC would be able to protect against threats like the proposed coal mines to protect the water quality of the Flathead system.

In order to protect the water quality of the Flathead, the hope was that the FBC would "serve as a forum for dialogue between all parties involved in land and resource management in the Flathead Basin" (Flathead Basin Commission 1983, 174). The commission would monitor the Flathead ecosystem, scrutinize its management, provide resulting information to all involved stakeholders, and bring those stakeholders together to deliberate on governance of the system (Flathead Basin Commission 1983, 183-184). Importantly, the language laid out by the Legislature for the structure of the commission made clear that this collaboration would have to occur with a broad array of stakeholders. The 15 members of the commission would be appointed by an array of largely governmental institutions, from the USDA to the Bonneville Power Administration to three Montana Governor-selected industrial or environmental groups effected by the work of the FBC (ibid.). Unfortunately, out of the 15, only one member was to be a representative of British Columbia.

Though collaborating with the BC government on transboundary water issues was also listed as an express duty of the commission, some thought that there was not enough of an emphasis put on working with BC. To some residents in BC, this lack of emphasis may have reached the level of a perceived slight, feeding a narrative that the US "looked down" on Canada (Pers. Comm. Expert #7, 2018). That said, the FBC has played a key role in numerous important international Flathead water quality issues since 1983. These include helping organize a land use

planning process for the community on the Montana side of the international Flathead basin in the early 1990's to make coordination with BC land use plans easier (Flathead Basin Commission 1991 and Sexton 2010, 3), providing a conduit for scientists working with the National Park Conservation Association to work with the Montana Legislature to design (and fund) a research study on Flathead water quality (Pers. Comm. Expert #6, 2018), and act as a bridging organization between the advocacy efforts for the international Flathead in the 1980's and the advocacy efforts that happened when the mining issue re-emerged in the 2000s (Pers. Comm. Expert #1, 2018).

International Joint Commission Referral

In the years following the publication of the FRBEIS, conservation advocates in Montana realized that they would need to take their fight to higher levels of governance in order for the mining threat to be resolved. Perhaps the loudest voice in this group of advocates was the administration of Glacier National Park (GNP). GNP administrators were becoming increasingly worried about the coal mining issue and, bolstered by their alignment with all of the other international Flathead conservation groups, stepped in and sought the aid of former Representative Baucus (Sax and Keiter 1987, 239). Park administrators asked him to urge the US State Department to seek a referral to the International Joint Commission (IJC) in relation to the issue. Somewhat surprisingly, this strategy worked.

In early 1985, the national governments of the US and Canada agreed to enter into an International Joint Commission (IJC) referral process under Article VII of the Boundary Water Treaty (BWT) (Ross 1990, 228). The IJC is both an instrument through which the two governments can formally communicate and coordinate as well as an independent investigative

body that can be called upon to gather information and make non-binding recommendations when the two countries cannot agree on their own in regards to a boundary water issue (Heinmiller 2008, 1503). For the IJC to get involved, both countries must agree to enter into an IJC referral process. This mutual decision initiates a formal study process that the IJC oversees, which culminates in the publication of a report with conclusions as to whether or not the actions of either country would violate the BWT.

There are multiple contradictory answers to the question of why the Canadian government would agree to a referral process in this instance, i.e. an upstream-downstream situation where they did not seem to have much to gain by including the US in their decision-making process. Whether Canada entered into the agreement as a result of the heavy pressure from the US State Department or simply because the decision makers in Ottawa, Canada's capital city, did not expect the results of the referral process to come out against the mines is unclear (Flathead Basin Commission 1983 and Thompson and Thomas 2007, 289). Regardless, both nations agreed to enter into an IJC referral in 1985 to determine whether or not the impacts of the proposed Flathead coal mines would violate the BWT. The referral was also designed to assist the two governments in ensuring that, in the language of Article IV of the BWT, "[the waters in question] shall not be polluted on either side [of the border] to the injury of health or property on the other." To accomplish these tasks, the IJC established the Flathead River International Study Board (FRISB) in 1988.

The FRISB technical team, consisting of US and Canadian experts (Kalispell Weekly 1985), oversaw a study including data collection on an array of relevant issues; water quality and quantity, air quality, and the status of several key fisheries (Ross 1990, 229). Key to the work of the team was maintaining a level of impartiality so that both sides felt the process was conducted

fairly. In support of this goal, an equal number of US and Canadian scientists took part in the research process, each country held three public meetings during the study, and the final assessments of data used a framework that assumed both optimal and adverse scenarios for the success of the proposed mine's safety measures (Flathead River International Study Board 1988, 3-5). The team made another important design decision in recognition of the challenges of data collection in such a remote and complicated landscape. This decision was to include, in the final assessment, conclusions informed by inferences made on the experiences of similar types of mines in the neighboring Elk River basin (ibid.). This proved crucial because one of the supposedly representative coal mines in the Elk River basin suffered catastrophic failures of two settling ponds as a result of a significant snow melt event during one of the research visits to the area by the FRISB research scientists (Holt 1986, 7). Though not directly mentioned in the final report, this experience is assumed to have influenced the final assessments of the mine's viability (Pers. Comm. Experts #1 and #7, 2018).

The findings from FRISB's studies, published in December of 1988, were mixed in their review of the potential impacts of coal mining in the Flathead basin. For instance, the report concluded that coal mining would not significantly impact water quantity at the international boundary in either an optimal or adverse case (Flathead River International Study Board 1988, 21). On the topic of water quality, however, the report's findings were much more negative. Under both adverse and optimal scenarios, the report found that significant deleterious impacts to water quality would occur through increased sedimentation, turbidity, increase in water temperature, and increased algae growth. Further, the report concluded that, in relation to the above mentioned Article IV of the BWT, any coal mine at the proposed site would have a direct negative socio-economic impact on the State of Montana's recreational fishing industry through

damage to the spawning grounds of the local Bull Trout (*Salvelinus confluentus*) population (Flathead River International Study Board 1988, 25). In other words, the bull trout population that spends most of its life on the Montana side of the basin but that crosses into British Columbia to spawn could be damaged by coal mining operations near its Canadian spawning grounds. The report also stated that in situations where one side of the border is working hard to preserve an area, the other side should consider "alternative-development opportunities" (Flathead River International Study Board 1988, 9).

The FRISB technical team made a series of final recommendations based upon research findings, the interpretation of these findings in the context of certain provisions of the BWT, and the results of the public outreach process.

1. To reject the current mine as proposed;
2. That future, similarly sited, mine proposals should not be approved unless the identified negative impacts to the transboundary water quality and the Bull Trout fishery were dealt with to a level acceptable to both governments;
3. That the governments of the appropriate jurisdictions, i.e. BC and Montana, work to implement "compatible, equitable, and sustainable development activities and management strategies in the upper Flathead River basin" (Flathead River International Study Board 1988, 11).

These findings were decisive and "amounted to a complete victory for Montana and Glacier National Park" (Sax and Keiter 2006, 296). The BWT was a respected international statute however its conclusions are not binding. Nonetheless, BWT conclusions are by far the highest-level condemnation of the proposed mines to date. Crucially, though, the recommendations made

by the IJC were non-binding. Fearing that acceptance of these findings would prove to be standard setting, Canada opted not to accept the findings of the IJC report (ibid.). British Columbia also refused to engage in talks with Montana in regards to future development in the area following the publication of the findings (Sax and Keiter 2006, 297). Still, soon after the report was released, the proposal for the mines at Cabin Creek was rescinded. The publicly stated reason for this decision was that global coal prices had fallen, making removal of coal from such a hard to reach place cost-prohibitive (Soucek 2012, 10). However, some sources say that the termination of the proposal was the outcome of the IJC report spotlighting the political risks of developing mine proposals in politically complex contexts (Pers. Comm. Experts #1 and #7, 2018).

British Columbia Land Use Planning Processes

From 1997 to 2003, there were three significant shifts in the BC land use plan for the international Flathead and surrounding areas. The first occurred in 1997 when, following a four year planning process, the BC government finalized the Kootenay Boundary Land Use Plan (KBLUP) (British Columbia Ministry for Sustainable Resource Management 1997, 3). The four-year planning process had involved the participation of a range of Canadian stakeholders, including local, provincial, and national environmental non-profits (E-NGOs) and government officials (Pers. Comm. Expert #2, 2018). Notably, Montana officials made formal requests to be involved in the process but were turned down by the BC government (Harris et al. 2001, 16 and Racicot 1993 and Sexton 2010, 3). For conservationists and local resource users involved in the planning process, one of the primary emphases of this effort was securing greater protections for land in the Flathead. At times this brought people together but there was also significant

disagreement over how stringent those protections should be. Most local hunters and outfitters, along with some conservationists, wanted protections similar to the level of National Forests in the US (Pers. Comm. Experts #2, #5, and #9, 2018). That level of protection would allow them to continue using the land in ways that they had historically. Another group, composed mostly of conservationists, was more interested in expanding Waterton Lakes National Park across the continental divide and into BC, where the Akamina-Kishinena Provincial Protected Area (AKPPA) is. Establishing the AKPPA, and ideally a larger area, as a national park would have been a significant accomplishment but would also have removed historic uses from that parcel of land. This divisive topic caused a rift between those who supported protecting the international Flathead, in large part down the local-provincial/national lines (Pers. Comm. Expert #5, 2018).

Owing to the hard work of some crucial individuals, who were able to bridge this divide, the coalition of those in favor of protection was able to come together to successfully advocate for a land use plan that would increase connectivity in the basin and prioritize strengthening protections for the AKPPA area (Pers. Comm. Expert #5, 2018). Unfortunately, when this plan was submitted to the provincial government in Victoria, BC, the government voted not to include the increased protections and instead decided to designate the Flathead Valley as part of a Coal Enhanced Resource Development Zone (ERDZ) (British Columbia Ministry for Sustainable Resource Management 1997 and Pers. Comm. Experts #5 and #6, 2018). The report from the Ministry of Sustainable Resources (1997, 8) notes that:

> The Coal ERDZ designation signifies an assurance of long-term security of access and tenures to these lands for coal mining exploration and development purposes, contributing to investor confidence and general coal industry viability. Within the Coal ERDZs it is recognized that ecosystem function may be temporarily compromised by coal exploration, development, production, or use activities on these lands.

To Montana stakeholders, Canadian E-NGOs, and local supporters of historic uses, such as hunting and outfitting, this designation was a significant blow (Locke and McKinney 2013, 201). For Montana stakeholders specifically, some of whom had spent the previous four years working to get a formal voice in the process, this decision signaled that the 1988 IJC referral decision had not meant the end of the fight for the environmental health of the Flathead (Harris et al. 2001, 11).

The second shift in land use planning came following BC's adoption of the KBLUP. Partially in response to the first shift, several Canadian and US E-NGO's, including Canadian Parks and Wilderness Society – BC Chapter (CPAWS) and the National Parks Conservation Association joined together and started a transboundary coalition known as Flathead Wild (Pers. Comm. Expert #9, 2018). The most significant purpose of this coalition was to increase Canadian public awareness of the implications of the KBLUP for the future of the international Flathead's environmental health. This was an important objective to those dedicated to protecting the Flathead because few residents of BC were familiar with the basin and river due to their seclusion. Consequently, in 2001, the FW public awareness campaign focused on increasing broader provincial awareness of the Flathead. This effort proved successful when the BC government gave in to mounting pressure and agreed to add greater protections to the Flathead and other surrounding basins (Locke and McKinney 2013 and Sexton 2010).

These increased protections came in the form of a Wildlife Management Area (WMA) designation on the area, which was based on the stakeholder recommendations that had been made during the previous KBLUP (Sexton 2010, 4). Although a welcome addition, the WMA protections still fell short of what some conservationists wanted, which was expansion of Waterton Lakes National Park into BC or to develop an expanded International Conservation

Reserve across the Montana /BC border (Locke and McKinney 2013 and Pers. Comm. Experts #5 and #7, 2018). Still, conservation advocates generally saw it as an important step in the right direction (Locke and McKinney 2013). Their satisfaction, however, was to be short-lived. Later in 2003, as a new government was coming into power in BC, the right to host the 2010 Winter Olympics was awarded to Vancouver (BBC 2003). These two events together pushed the official BC stance on coal mining in the international Flathead and surrounding areas back towards an industry friendly stance.

Following an election in 2001, the BC Liberal Party, led by Gordon Campbell, formed a new majority government. Not only was this new government more supportive of the BC-coal industry, they also had to prepare for a massive and costly international sporting event (Sexton 2010, 4). Given the costs that would be associated in organizing and putting on the Olympics, the government looked to coal extraction in southeast BC, including the Flathead, as a crucial revenue generator (Soucek 2012, 67 and Sax and Keiter 2006, 287). The Liberals moved quickly to eliminate the short-lived WMA and begin a new comprehensive land use planning process (Locke and McKinney 2013, 204 and Pers. Comm. Expert #9, 2018). This new plan was called the Southern Rocky Mountain Management Plan (SRMMP). The process of writing it took place quickly during 2003.

Even before the plan was finished, the emphasis on coal extraction for southeastern BC was evident. An assessment of the environmental impacts of coal mining on southeast BC completed by a private firm during the SRMMP planning process noted that although the area had earlier been identified as a WMA, "…the *current government* determined that additional resource management direction was required to adequately balance social, economic, and environmental values" (emphasis added) (Triton Environmental Consultants LTD 2002, 6). In

other words, the assessment openly stated that the new regime had brought back the coal-friendly perspective to land use decision making.

Indeed, before the end of 2003, the planning process had yielded a plan that was not only a return to mining industry-friendly land use designations but was even more aggressive in spurring mining than the KBLUP. The SRMMP adopted a two-zone system with respect to mining access rights. Explained simply, this meant that land was either open to mining or not open to mining. What this amounted to on the map was that almost all of the land within the planning area, hundreds of thousands of acres, was open to mining. The only areas that were not were the small pockets of privately owned land and AKPP (British Columbia Ministry for Sustainable Resource Management 2003, 18). In the years following this new plan's implementation, proposals to conduct both coal mining and coal bed methane extraction were formalized. This ramping up of mining activities was the clearest threat to the health of the international Flathead since the rescinding of the Cabin Creek proposal following the IJC referral findings in 1988. In response, the efforts, on both sides of the border, to protect the river and basin also kicked into their highest gear since the late 1980's. As the stakes for both sides of this conflict became higher, final resolution of the issue also approached.

Intersection of Winter Olympics, UNESCO Study, and MOU

As briefly described above, in 2003, the International Olympic Committee chose Vancouver, BC as the host site for the 2010 winter games (BBC 2003). Looking for ways to support financing the event, the BC government considered its most lucrative natural resource: coal (Soucek 2012, 67). The primary source of coal in BC is in the southeastern corner of the province, which includes the Canadian Flathead basin. Though mining had gone on for decades

in nearby basins, the Flathead had yet to be mined. The Olympics announcement provided the ideal motivation to change that (Sax and Keiter 2006, 287). In the years that followed, as the pressure surrounding putting on the Olympics mounted so too did the pressure to mine in the Flathead. With this pressure, the profile of the proposed mines in the Flathead also reached new heights, drawing international attention.

Much of the international attention stemmed from several efforts by a transboundary coalition of environmental non-profits and Montana and US politicians to pressure BC into removing mining rights from the Canadian Flathead. As the Olympics neared, these efforts came together. One effort involved reaching out to UNESCO in a ploy to apply international pressure on the BC government. In the summer of 2009, representatives from Flathead Wild travelled to Spain to petition the World Heritage Committee of UNESCO at its annual meeting (Pers. Comm. Expert #1, 2018). FW representatives requested that the designation of the Waterton-Glacier International Peace Park, which at the time was already both a Biosphere Reserve and World Heritage Site, be changed to "in danger" status (UNESCO 2010, 10). The FW representatives argued that the risk posed by climate change and local threats, such as mining, demanded this change (Tuholske and Foster 2014, 698). At the same time, 53,000 Canadian and U.S. citizens signed and submitted a petition asking UNESCO to protect the park from upstream mining (ibid). As a result, the World Heritage committee unanimously voted to send an investigative team to WGIPP to conduct a formal on-site investigation to assess the validity of these claims (Soucek 2012, 14).

Simultaneously, there was growing pressure on Canadian Provincial and National governments to protect the Flathead from mining. This pressure came via multiple avenues. From the US, following appeals from (then) Senator Max Baucus (who was at that point in the

powerful position of chair of the US Senate Finance Committee), Senator Jon Tester, and (then) Governor Brian Schweitzer, officials at the US State Department began seriously discussing the topic with their counterparts in Ottawa. At the provincial level, FW organized a strategic public awareness campaign to garner significant media attention and rally public support (Locke and McKinney 2013, 203). As the Olympics approached, immense pressure built on BC to make a decision about the Flathead. This pressure put the government in a tough place because in the run-up to the Olympics they were working hard to publicize BC's scenic mountain settings and natural mystique (Locke and McKinney 2013, 203). The potential embarrassment of anti-coal mining media attention taking the spotlight away from the environmentally friendly message eventually forced the BC government to give in and re-open talks with Montana officials in regards to the future of the Flathead. These talks centered on updating a Memorandum of Understanding (MOU) that BC and Montana had begun developing in 2003 (Soucek 2012, 16). Negotiations in 2003 to formalize the MOU were never completed, but the document proved to be the best starting point in 2010 for opening talks regarding conservation of the shared Flathead environment (Sexton 2010, 7). The heightened pressure put on BC in the final run-up to the Olympics proved to be a tipping point and a groundbreaking agreement was reached between the two parties as a result.

In the final hours before the Olympic opening ceremony, BC announced the retirement of all oil and coal leases in the Flathead Basin (Locke and McKinney 2013, 203). Days later, BC and Montana signed an MOU stating Montana would do the same south of the border and that the two jurisdictions would improve their working relationship in the management of the transboundary environment (The Province of British Columbia and the State of Montana 2010). Though the MOU was a nonbinding agreement, it spurred real change. Less than four years later,

both the BC and US governments had passed binding legislation protecting the international Flathead basin by forever removing all mining rights from the basin. Further, in support of this, the land leases still held on both sides of the border by energy companies were bought out by environmental non-profits. These agreements represented a tremendous achievement for all parties with a stake in protecting the international Flathead.

Summary

This chapter presented an assessment of the four major historical events identified as being the most influential through my analysis. Over the course of the events, which span the 40-year timeline, the role of a diverse array of institutions is described. In the events of the 1970s, the actions of an emergent river advocacy group motivated politicians, scientists, and local community members to question the initial proposal for a coal mine on the BC side of the basin. In the mid- to late-1980's, a rarely activated function of an international conflict resolution body, the IJC referral process, was triggered. This resulted in an important, high-level, scientific study being conducted on the international Flathead. Around the turn of the century, the back-and-forth of two significant land use planning processes in BC showed that resolution of the mining issue remained an issue most clearly impacted by decision makers in the province instead of by actors in Montana. Finally, in the events leading up to the signing of the MOU in 2010, the role of international actors, such as UNESCO and the Olympic games, came into focus as international public opinion forced the BC government to give ground on their Flathead mining stance.

Revealed in the progression of the 40-year effort to confront the threat of coal mining, is the importance of the growth of the networks of river advocacy and conservation actors involved in the work. The scientists, E-NGOs, politicians, and engaged citizens who were active in

opposing mining slowly grew closer and closer to one another over the 40 years as their work overlapped and became more reliant on the progress of others. For instance, BC's eventual decision to remove mining rights was the culmination of mounting social pressure resulting from the FW awareness campaign, the science based decision of UNESCO to determine WGIPP was "in danger," and the hard work of MT and US politicians to sway BC and Canadian politicians opinions. Each of those factors was tied to work that had been going on for decades before. Further, the final removal of mining rights most likely would not have occurred without all of them coming together at once. The following chapter will question the functions of environmental governance over this timeline to assess the role of adaptive governance in each of these outcomes.

CHAPTER 5: ADAPTIVE GOVERNANCE ANALYSIS

This chapter responds to the question of whether or not the previously discussed four key historic events had any relation to supporting, enhancing, and/or facilitating the emergence of AG in the international Flathead. There is no doubt that there have been several remarkable conservation victories for those involved in protecting the international Flathead from coal mining. Some of the victories stand out in terms of the unusual means by which they came to fruition. The goal of Chapter 5 is to establish whether or not those victories, or environmental governance outcomes, constituted adaptations to the EGC at the time. EGC's, i.e., the system of environmental governance of a specific time and place, are complex due to the many layers of vertical and horizontal scalar interactions that factor into decision-making processes. For instance, interactions between international and local stakeholders or amongst international stakeholders can be complex. Together, these interactions can create conditions in which AG can emerge. The question is if they did in this instance. The first section of the chapter presents the results of RQ2 and the next presents the results of RQ2a.

Were the Criteria Necessary for AG to Emerge Met?

Were the criteria necessary for AG to emerge, as identified by Dietz, Ostrom, and Stern (2003) and described by Chaffin, Gosnell, and Cosens (2014), present in the environmental governance context of the international Flathead when any of the four most influential events occurred? Answering this question was a complicated process. The variety of institutions, which included organizations, laws, and governing bodies, that were at play in the environmental governance context (EGC) present surrounding each of the four most influential events is vast.

Fully understanding how they related to each other and how those relations impacted outcomes is extremely difficult and, perhaps, impossible. This is especially true given the historic timeline of these events and that these institutions interacted horizontally, vertically, and diagonally across scales with each other. In order for an analysis to produce results that offered any clarity, some amount of simplification of the EGC being questioned had to happen. Fortunately, the majority of key organizations, laws, and governing bodies that were relevant to the four key events were created before 1974 and still exist today. Therefore, if the structure and interaction of those institutions in relation to AG could be established, the EGC they created could be assumed static between events. Within this assumption there is understanding that new influential institutions frequently emerged from 1974-2014. Where relevant, discussion of the impact of these emergent institutions on the EGC is included.

In order to determine this, I needed to learn how the key institutions going into the events of 1974 functioned internally and how they interacted with one another. I approached this process with two steps. First, as described in the Content Analysis section of Chapter 3, I generated a table of working definitions of each criteria and a list of key terms associated with them. This is shown below as *Table 3*.

Criteria	Definition	Key Terms
Analytic Deliberation	"Well-structured dialogue involving scientists, resource users, and interested publics, and informed by analysis of key information about environmental and human-environmental systems" (Dietz, Ostrom, and Stern 2003, 1910).	provides trust, builds social capital, provides information, involves interested parties, informed discussion of rules, horizontal and vertical transfer of information
Nested Governance	"Multiple, overlapping levels of control with one level of either control or strong coordination at the scale of the particular social-ecological system" (Cosens 2005, 256)	hierarchy of institutions, complex, redundant, layered, diverse scales of authority, decentralized decision making
Mixed Institutional Types	"Hierarchies, markets, and community self-governance (etc.) that employ a variety of decision rules to change incentives, increase information, monitor use, and induce compliance" (Dietz, Ostrom, and Stern 2003, 1910).	market and state based, diverse, flexible, bridging institutions
Institutional designs that facilitate experimentation, learning, and change	Institutional designs that draw "on various knowledge systems and experiences for the development of a common understanding and policies" (Folke et al. 2005, 441)	enabling legislation, generating information, science, public involvement, knowledge systems

Table 3: Criteria Necessary for the Emergence of AG

By organizing the criteria in this manner, I was more easily able to operationalize each of the criteria as thematic codes for use in analysis of documents relating to the interactions and structure of relevant institutions existing going into 1974. These institutions are presented below, *Table 4*, and organized by Type of Institution and Scale of Governance. I populated this table with the key institutions that existed in 1974 before news of the mine proposal broke and, which were also present for the entire duration of the timeline. For instance, the non-profit coalition Flathead Wild is not in the table because, though influential, it did not come into being until the

2000's. Once populated, this table did a good job of visualizing the complexity of the cross-scale interactions that make up environmental governance.

			Type of Institution				
		Government	*Land Agency*	*Law/Act/Treaty*	*E-NGO's and organizations*	*Interested Public*	*Scientific*
	International			US/Canada Border, **Boundary Waters Treaty**	UN		
Scale of Governance	*National*	US and Canada	**US NPS (GNP)**, USFS (FNF), Parks Canada (WNP)	WSRA and ESA	CPAWS and NPCA		
	Tribal	CSKT and Ktunaxa					
	State/Province	**British Columbia** and Montana	MT DNRC, MT FWP, BC CL, and BC MEM		MWA and BCWF		UMT and UBC
	Local	Fernie, Kalispell, etc.			**Fernie Rod and Gun Club** and Kalispell Chamber of Commerce	Historic User Groups (Hunters, Recreaters, Loggers)	Flathead Biological Station

Table 4: Institutions Relevant to International Flathead Governance Going into 1974

The next step involved the use of the thematic codes presented in *Table 3*, to analyze whether or not the structure and interactions of the institutions presented in *Table 4* met the criteria necessary for AG to emerge. To show how this complicated process worked, I generated an example analysis. For this example, I selected four key institutions, bolded in *Table 4*, which, together, represent each scale of governance and type of institution. The results of the analysis are shown below in *Table 5*. The analysis in the table describes how each institution relates to each criteria and then how the institutions, collectively, relate to one another and create an environmental governance context that has certain characteristics. These data were generated by use of the content analysis methodology on historic data of the structure and actions of these institutions only in relation to environmental governance of the international Flathead over the past 40 years. For example, my analysis of the BC government in this instance only involved

analysis of the structure and actions of the BC government that related to the governance of the international Flathead over the 40 year timeline. Though less descriptive than would have been ideal, the analysis offered below in *Table 5* is an attempt to visualize the functions of a complex system.

Similar to the results shown in *Table 5*, the results of the broader analysis of the institutions present going into 1974 found that the four criteria necessary for AG to emerge were not met at that point. This was specifically due to a lack of analytic deliberation and mixed institutional types. This conclusion meant that further analysis was needed to determine if any future EGCs met the four criteria. Though not presented in a table, this analysis occurred for the environmental governance context that existed in 1977. By then, multiple key institutions, mainly the Flathead Coalition, had entered the broader EGC. This analysis again used the thematic codes presented in *Table 3* to determine whether the structure and actions of these new institutions were sufficient additions to qualify the EGC as meeting all four criteria.

This analysis showed that the Flathead Coalition provided much needed diversity to the institutional types present in the baseline EGC. Not only was the coalition, as a broad based citizens' organization, a new type of institution for the EGC, it also brought a diverse array of other groups into the governing equation. Perhaps most notably, the inclusion of multiple chambers of commerce in the Flathead Coalition lent a certain amount of market-based influence to its functions. The Flathead Coalition also increased the level of analytic deliberation that could take place within the broader EGC.

	Analytic Deliberation	*Nested Governance*	*Mixed Inst. Types*	*Inst. Design for Change…*
BC Gov't	Can contribute but mostly through significant formal triggered process (LUPP), historic industry friendly stance on extraction puts scientific processes into question, majority parties have considerable control over shape of environmental governance decision-making processes	Has formal decision-making authoriy at the provincial level and at some local government levels, mostly centralized decision-making but authority can be shared through LUPPs or other mechanisms	Democratically elected governing body with formal reach at pronvincial and local levels, actions are strongly influenced by choices of majority government	Structures exist within BC land use law for learning, experimentation, and change but generally only through triggered processes that can be highly politicized
Glacier National Park	Can contribute but mostly through significant formal triggered process (NEPA), can only generate information about land within the park, historically pro-conservation stance on transboundary Flathead environmental governance issues	Has formal decision-making authoriy on issues at the park level, only formally involved with decisions about park land but can influence other processes through social license	Formally structured "branch" of federal agency, oversees public processes through rules agreed upon at federal level (NEPA), actions are somewhat influenced by current government	Structures exist within operating language for learning, experimentation, and change but these processes often only occur when triggered, can be influenced by current governments, and are designed to proceed slowly with transparency as a key outcome
Boundary Waters Treaty	Can contribute but exclusively through IJC referral process, very effective but very hard to trigger, can only generate information related to boundary waters, attempts to be impartial impacted by broader political forces	Has no direct decision-making authority but can make formal, non-binding, reccomendations, designed to represent both nations equally, only formally involved in processes at the level of waters (or some impacts) that cross the border but has reach to other levels through social license	Treaty agreed upon and upheld jointly by the US and Great Britain/Canada since 1909, generally not influenced by current governments but triggered actions can be impacted by current governments	Structures exist for learning, experimentation, and change but only engaged through formally triggered mutually-agreed upon processes, these can generate formal reports but not necessarily binding agreements
Fernie Rod and Gun Club	Can contribute on small scale, infrastructure has slowly grown more formal, speaks for smaller group/place, does not internally generate scientific information, supports land designations that protect historic uses, i.e. not national parks	Does not have formal decision-making authority, involved mostly at local level but is explicitly organized to influence local governance in regards to certain selected issues	Non-governmental rganization born from historic outdoor user groups seeing need for more formal voice in local governance, actions can be influenced by broader market forces	Not designed to learn, experiment, or change itself so much as designed to represent the opinions of locals, which may change as a result of learning or experimentation
Collectively	Potential existed for these institutions to partake in AD but only under very specific circumstances, which indeed proved to be uncommon. Given that these institutions did not enter into AD until other key institutions entered the EGC, they cannot be said to have reached AD.	In certain situations, i.e. possible pollution in the NF resulting from coal mining, the relationship between these institutions does represent nested governance. Each institution represents a different level and has, at least, some authority to work to influence decision-making processes both at and outside of their level.	These institutions do represent a mixture of institutional types but too many of them are directly tied to formal governments for them to be sufficiently mixed. Most notably, this group lacks market-based institutions and a broader array of representation of local voices.	These institutions do each have some level of intentional design to facilitate learning, experimentation, and change. The problem is that, for most of them, those processes only occur at certain specific times and political goals can restrict outcomes. That said, when triggered, these institutions are sufficiently designed to generate new information and respond to that information.

Table 5: Relation of Representative Institutions to AG Criteria

By including so many voices in the process, including the scientific community eventually, the coalition provided information, improved trust amongst interested public groups, and built social capital. The coalition also contributed to the nesting of governance within the system as well as to the capacity of the involved institutions to experiment, learn, and change. The two areas where the previously described baseline set of institutions lacked in terms of adaptive potential though were Mixed Institutional Types and Analytic Deliberation. The Flathead Coalition improved both of these for the overall EGC. In fact, the emergence of the Flathead Coalition brought the state of the baseline EGC to a point where adaptive governance outcomes were possible. This finding meant that analyses of whether or not the remaining key events were adaptive could begin.

Were the Outcomes of the Key Events Adaptive?

The process for answering this question looked similar to the process for answering RQ2, as detailed in the previous section. The five conditions that AG should create, according to the AG framework, were operationalized as thematic codes for use in content analysis of the outcomes of the key events that came after 1977. To simplify use of these concepts, *Table 4* was generated using the original definitions of the concepts from Dietz, Ostrom, and Stern (2003). Taken together, these five concepts of what AG should do help to explain how AG environmental governance outcomes constitute adaptations to shifting environmental governance conditions. When the institutions interacting in an environmental governance context (ECG) are engaged in these five aspects, the governance outcomes that come out of those interactions constitute adaptations, or co-evolutions, to shifting conditions, such as changing resource use.

AG should	Definition	Key Terms/Ideas
Provide Information (PO)	Provide "good, trustworthy information about stocks, flows, and processes within the resource systems being governed, as well as about the human-environment interactions affecting those systems. This information must be congruent in scale with environmental events and decisions" (Dietz, Ostrom, and Stern 2003, 1908).	science and local knowledge, not highly aggregated, meets decision makers' needs, high scientific standards, not too much at once
Deal with Conflict (DC)	"People bring varying perspectives, interests, and fundamental philosophies to problems of environmental governance, and their conflicts, if they do not escalate to the point of dysfunction, can spark learning and change" (Dietz, Ostrom, and Stern 2003, 1909).	sharp differences in power and values inherent, conflict resolution, can drive insitutional design choices, equitable and shared outcomes
Induce Rule Compliance (IRC)	"Effective governance requires that the rules of resource use are generally followed, with reasonable standards for tolerating modest violations" (Dietz, Ostrom, and Stern 2003, 1909).	community based insitutions, informal strategies, social sanctions, fines, science based, rules agreed upon, participant commitment
Provide Infrastructure (PF)	Physical and institutional "infrastructure, including technology, determines the degree to which a commons can be exploited, the extent to which waste can be reduced in resource use, and the degree to which resource conditions and the behavior of human users can be effectively monitored" (Dietz, Ostrom, and Stern 2003, 1909).	links between local and global, often ignored, effective communication, research, social capital, rules, helps coordinate
Be Prepared for Change (BPC)	"Institutions must be designed to allow for adaptation because some current understanding is likely to be wrong, the required scale of organization can shift, and biophysical and social systems change" (Dietz, Ostrom, and Stern 2003, 1909).	fixed rules likely to fail, low probablity and high consequence changes, can be suboptimal in short run but prove wiser in long run, less top-down control

Table 6: What AG Should Do for Environmental Governance Processes

These five concepts, and their associated key terms and ideas, were used as thematic codes in content analysis of the key events that occurred following the EGC in 1977 meeting of the criteria necessary for AG to emerge. The first analyses presented in the next section were of governance outcomes that occurred in 1977 and 1983 as a direct result of the earlier key events.

This approach is repeated for the outcomes of the key events in the following decades. The results of these analyses are presented in a series of simple tables that accompany brief justifications of the determinations. Included within these descriptions is a final conclusion as to whether or not the outcome of the key event being analyzed was adaptive. I will begin with the outcomes resulting from the key events of the mid-1970's; the FRBEIS and the FBC.

FRBEIS and FBC

FRBEIS was designed with significant input from local resource users. The study itself utilized sound science to generate a large volume of data that was publicly available upon publication. Together, these two factors clearly qualify the FRBEIS as an outcome that provided information for future environmental governance processes in the international Flathead. Less clear is whether or not the FRBEIS can be said to have dealt with conflict. This answer is complicated because determining exactly what the conflict was at that time is complex. If the conflict were only between those who wanted to mine coal in the BC side of the Flathead Basin and those who did not, then the FRBEIS cannot be said to have directly dealt with any conflict. This is because the threat of coal mining persisted long after the early 1980's. On the other hand, the design of the study helped build social trust, the findings put added pressure on the BC government to resist approving the mine, and the Flathead Basin Commission was created as a result of the study. Each of these factors is a key part of the eventual resolution of this conflict. As a result, the study is determined to have dealt with conflict.

The findings of the FRBEIS did help induce rule compliance as the BC government agreed to add more stringent, data driven conditions to the approval of the mining permit that Sage Creek was pursuing. The findings also helped strengthen the scientific foundations upon

which the resource use rules for the US side of the Flathead River system were based. The FRBEIS provided infrastructure to governance efforts of the system as well. During the five years of the study, physical and technological infrastructure in the form of transportation, work spaces, and scientific instruments were provided to those involved. The scale of this infrastructure meant that the study was by far the largest ever conducted on the international Flathead ecosystem. Another important point is that the study provided a significant amount of institutional infrastructure to the governance context in the form of research, social capital, and a structure for communication between the levels of institutions involved. Further, though much of the infrastructure discussed here only existed for the duration of the study, the FBC emerging as a result of the study's findings means that a significant amount of institutional infrastructure persisted. Finally, the design and findings of the FRBEIS helped the broader EGC to be prepared for change because the design of the study helped build local trust between scientists and resource users. Finally, the results of the study were by far the most complete set of data on the condition of the Flathead River basin that had ever been collected. Having up-to-date information to act as a baseline in the future is crucial to the capacity of those involved in resource governance to respond to change.

The FBC was, in large part, created so that there would be a quasi-governmental body dedicated to keeping up-to-date on the condition of, and threats to, the water quality in the Flathead. The commission also did a relatively good job of representing local interests by having members appointed by local governmental and non-governmental bodies. In doing so, as a publicly funded body, the commission provided a large amount of data that was informed by both scientific research and local knowledge. Similarly to the FRBEIS, saying whether or not the FBC dealt with conflict is a little more challenging. As in the case of FRBEIS, judging whether

or not the FBC dealt with conflict effectively is more challenging. The FBC did not deal with the primary conflict between those in support of coal mining and those against it. Nevertheless, the actions of the FBC in future years helped resolve numerous conflicts along the way to the final resolution of the mining issue. More clearly, by acting as a consistently funded government body solely dedicated to protecting the water quality of the Flathead system, the FBC helped to induce rule compliance by ensuring that breaking the rules surrounding resource use in the system would be more difficult. The FBC provided a significant amount of institutional infrastructure through its design and functions.

This outcome was especially true because creation of the commission meant that there was now a group dedicated to the environmental quality of the Flathead and made up of multi-level stakeholders, including an international representative. That was an invaluable addition to the EGC as well as a message to those in support of coal mining in the basin; the days of rumors about proposed coal mines in BC slowly trickling into Montana were over. The FBC also provided some physical and technological infrastructure in the form of work space, occasional transportation, and office technology. Finally, the FBC did not help the broader EGC to be prepared for change because of insufficient involvement of BC officials in FBC functions. This lack of inclusion meant that any positive outcomes of work done by the FBC would be one-sided. This imbalance would hold back the broader EGC from being better prepared for change. In conclusion, both of these outcomes qualify for the five variables of the framework sufficiently for them to be considered adaptive. Though neither outcome did this perfectly, especially in terms of bridging the gap with those working on these issues in BC, they added such significant amounts of information and institutional infrastructure to the broader EGC that they each constituted adaptations to the system.

	PI	DC	IRC	PR	BPC
FRBEIS	x	x	x	x	x
FBC	x	x	x	x	

Table 7: AG Analysis of 1st Key Event Outcomes

IJC REFERRAL

The results of the IJC referral process, published in 1988, provided a large amount of information to the governing context. Included in the findings of the study were results from research on water quality, air quality, local economics, and other topics. All of these results became publicly available upon publication. Due to the basin-scale design of the studies, the information provided was also congruent with the scale of the environmental events and decisions in question. This congruency meant that the information produced by the referral process was well suited to increasing understanding of the issues at a basin-scale. If the information had been produced at a BC or MT basin-scale, the data could have perpetuated the idea of the riverine ecosystem as governable without transboundary collaboration. Another result of the finalization of the IJC referral was that the conflict over the proposed mine somewhat subsided for close to 15 years. However, this outcome cannot be categorized as dealing with conflict. For instance, the BC government resisted accepting the findings of the study and shied away from future collaboration with Montana and US officials for years going forward. This was most clearly embodied by the BC government resisting offers by the MT government to take part in the BC-LUPPs around the turn of the century (Sexton 2010). Dealing with the conflict at that time would have meant Canadian acceptance of the findings and an end of the mining threat. For the next variable, the referral findings did induce a slightly higher level of rule compliance. Once the findings were public, specifically the finding that proceeding with the coal mine as planned would have violated the BWT, the Cabin ck. proposal was rescinded. Though there is

disagreement over exactly why the proposal was rescinded, the public awareness of the issue would have made avoiding the study's results difficult. Still, by never accepting the findings, the Canadian government ensured that they were not technically beholden to the recommendations.

The full three-year study process, which involved scientists spending a significant amount of time in the field, provided varying levels of infrastructure to the governing context at that time. A large amount of communications and transportation infrastructure went into supporting these efforts. There was also some technological infrastructure in the form of scientific instruments used in this work. More importantly, there was a significant amount of institutional infrastructure created through this work. All of the structure of the IJC referral process came into play through these studies. For those three years, all the important work being done in support of those efforts was happening through an internationally agreed upon set of multilevel rules. Following this internal infrastructure was crucial because it meant that the final results of the studies were trustworthy. As explained previously, these studies, and their findings, were the most internationally significant works to have been done on this topic at that point. Unfortunately, the final results of the process cannot be said to have better prepared the system for change. This is because the Canadian and BC governments came away from the process feeling as though they had not been treated fairly. The Canadian government shied away from IJC referrals following the 1988 findings. The BC government also moved forward on working to incentivize coal extraction projects and refused to work with Montana officials on anything related to the international Flathead. These shifts away from collaboration, in fact, decreased the capacity of the EGC to respond to change in the following years. As a result, the IJC referral results does not constitute an adaptive outcome.

	PO	DC	IRC	PF	BPC
IJC Referral	x		x	x	

Table 8: AG Analysis of 2nd Key Event Outcome

BCLUPPs

The two major land use planning processes that took place in BC around the turn of the century provided information to the broader environmental governance context. This was especially true for the KBLUP because of the diversity of parties that were involved in the discussions during the planning process. Multiple interview subjects who were involved in the KBLUP process noted that they gained insight into the perspectives of other stakeholders, whom they may have historically been at odds with, as a result of discussions during the planning process. Specifically, these discussions brought together resource users from the BC Flathead area that are dedicated to historic uses, such as outfitting, with local public land administrators and local E-NGO representatives (Pers. Comm. Experts #2 & #3, 2018). Historically, these stakeholders may have been at odds but the information provided by and during the KBLUP helped show them that they had common ground and could agree upon some protections that could be placed on land within the basin. Unfortunately, much of the information, specifically the mutual support for a new WMA in the basin, was not present in the final plans that emerged from the planning processes (Pers. Comm. Experts #5 and #6, 2018). Instead, the final plans support resource extraction heavy policies for the basin. There is a lack of good scientific information supporting these policies. Similar problems were experienced with assessing whether or not the BCLUPPs dealt with conflict. There were times during these processes where common ground was established. This could have led to plans that protected some areas of the basin more and initiated increased resource extraction in other areas. Though not ideal, this

discovery of common ground could have been deemed as having dealt with conflict. In the end though, the final plans exclusively supported resource extraction over increased conservation. The creation of the WMA between the two plans made up for this to a certain extent but the future removal of the designation showed the lack of resolution of the conflict. On the other hand, the plans did induce rule compliance. This is partially because they greatly simplified the process of reaching approval for a coal mine and other extractive operations. For instance, the passage of the SRMMP made it so that almost the entirety of the BC Flathead basin was open to coal mining. This binary approach to approving resource extraction ensured that there were fewer rules for mining companies to follow in the process of proposing and building a mine. Still, by removing rules, they could be said to have induced rule compliance.

Similar to the ways that the IJC referral study and the FRBEIS study provided infrastructure for the duration of their work, the BCLUPPs could also be said to have provided infrastructure. A significant amount of time, money, and effort went into building these plans. This is especially true for the KBLUP, which, as previously discussed, was a more inclusive and open-ended planning process. Though the final outcomes of these plans were suboptimal for those interested in protecting the basin, they still provided a significant amount of infrastructure for those interested in extracting resources in the basin. Finally, these planning processes did not better prepare the broader EGC at the time for change. The plans attempted to make it significantly easier for future extractive industry companies to damage the international Flathead ecosystem. The outcomes of these plan processes, specifically the removal of the conservation goals from the KBLUP by the provincial government, also damaged relationships between actors in BC land use planning (Pers. Comm. Experts #2 & #5, 2018). The lack of involvement of Montana stakeholders in the planning processes also held these plans back from better preparing

for change (Sexton 2010). Taken together, the outcomes of these plans did not constitute adaptations to the EGC at the time.

	PO	DC	IRC	PF	BPC
BCLUPPs			x	x	

Table 9: AG Analysis of 3rd Key Event Outcome

BC-MONTANA MOU

The language of the MOU signed by BC and Montana in early 2011 sets out a number of ways that the two parties will work together in the future on international Flathead issues, such as environmental assessments and fish and wildlife management. The agreement also calls for the proactive sharing of information generated by either actor in regards to international Flathead River management. The agreements made by BC and Montana constitutes the providing of information. Monitoring whether or not these collaborations happen and information is shared is key to this assessment moving forward though. In the short term at least, this agreement also can be said to have dealt with conflict. Neither side necessarily got what they wanted out of this deal, i.e. BC would have preferred to have coal mining operations active in the basin today and some actors in Montana would have preferred to also remove logging rights from the basin (Pers. Comm. Expert # 9, 2018). Still, by the time the agreement was reached, BC seemed to be more concerned with eliminating the negative press that was being generated about the proposed mining. In this sense, the conflict was definitely dealt with. BC also succeeded in retaining the rights to extract other resources from the basin, i.e. timber. In this sense, they also got what they wanted. In the long term, there is potential for conflict about resource uses in the basin between the two parties to re-emerge. This is especially true given that the MOU, itself, is not a binding document and BC and Montana do not have the authority to reach binding agreements together.

The MOU induced rule compliance through creating a more effective system of governance for the international Flathead. The stronger relationship between the two countries, along with increased clarity on allowable resource uses within in the basin, means that rules will be more clearly stated. This will make complying with those rules easier. Monitoring whether or not there is follow-through on rule compliance will be crucial going forward. The MOU provided infrastructure in the form of more clearly stating the relationship between the upstream and downstream parties in the basin. There are clearer avenues and more of a structure now for the two parties to work on issues related to the international Flathead. Further, the momentum built by the MOU helped build institutional infrastructure through the eventual passage of binding legislation removing mining rights from the basin.

Determining whether or not the MOU prepared the international Flathead EGC for change is more complicated. In some ways, the MOU clearly did. The MOU spurred the eventual removal of mining rights in the basin. This means that the basin will never be polluted or degraded by mining activity. This will keep the basin ecosystem healthier and, thus, more prepared for sudden changes. Also, the MOU can be said to have improved the relations of those involved in BC and Montana governance. A good example of this was (then) BC Prime Minister Gordon Campbell and (then) Montana Governor Brian Schweitzer becoming closer friends during the run-up to the MOU. These improved relationships certainly better prepare the system for change. That said, some of the subjects that I interviewed said that the MOU has given BC more flexibility to push forward other extractive practices in the basin, i.e. clear cutting. BC can now say, because of the MOU, that they care about the basin ecology. Meanwhile, behind the scenes, they can push forward other agendas that may threaten basin ecology. Not enough years have passed since the MOU for the determination as to whether or not the agreement better

prepared the EGC for change. As a result, the AG analysis on this event's outcome is incomplete.

	PO	DC	IRC	PF	BPC
MOU	x	x	x	x	?

Table 10: AG Analysis of 4th Key Event Outcome

CHAPTER 6: DISCUSSION AND FUTURE RESEARCH DIRECTIONS

This chapter concludes this thesis. Included within the chapter is a brief run-through of the study's findings. This includes description of the results of each of the research questions. Following this, there is a discussion of the reasons that such results were found, including an analysis of the difficulties experienced in operationalizing the AG framework. Finally, future research directions are described.

Using results generated from content analysis of historic documents and key informant interviews, this study identified the four events that, over the past 40 years, were most influential in protecting the international Flathead from coal mining. These events were: 1) the emergence of the efforts to prevent the coal mine in the mid-1970s and early 1980s; 2) the IJC referral process and findings in the late-1980s; 3) the BC land use planning processes around the turn of the century; and 4) the UNESCO study findings leaking in the run-up to the 2010 Winter Olympics pushing BC to sign an MOU with Montana to ban mining. Following their identification, brief but detailed accounts of each of the events were generated through further content analysis of collected data. The results of this process were valuable in that they showed the value of scientific information generated at the scale of the problem through a less-biased process, the potential of putting pressure on politicians by engaging the public through well-targeted and well-timed campaigns, and the benefits of taking advantage of mechanisms, such as the IJC and UNESCO study processes, that exist due to enabling legislation language but need to be triggered through creative measures.

Following the results of that analysis, a framework for AG, which defines the criteria necessary for AG to emerge and the conditions that AG should create, was used to analyze each

of the four events. Initially, this process involved confirming whether or not the criteria necessary for AG to emerge were ever present over the 40 year timespan. After these criteria were identified as having been met in 1977 following the emergence of a new key institution, analysis moved to determining whether or not any of the outcomes of the key events met the conditions that AG should create and, thus, qualified as adaptations. In total, five separate outcomes were analyzed to determine whether or not they were adaptive. Of the five, only one, the FRBEIS, met all five conditions. Two other outcomes, the FBC and the MOU, met four of the five conditions. Each of these three outcomes represented the creation of an institution that created new information, brought important historic institutions together in new ways, and helped to make future conservation efforts in the international Flathead easier to achieve. The results from the AG framework analysis of the other two events, the BCLUPPs and IJC referral, were that only two and three of the conditions were met, respectively. In large part, these negative findings were the result of neither outcome dealing with the conflict that the event in question was most closely associated with. For example, the US and Canada agreed to enter into an IJC referral process to resolve the issue of negative impacts resulting from coal mining in the BC side of the basin. Though the IJC referral results are a key contributor to the eventual removal of mining rights in the basin, the results cannot be said to have dealt with the conflict between the US and Canada over potential mining. For similar reasons, both of these events failed to clearly better prepare the EGC of their time for change. Both outcomes augmented the division between mining supporters and mining opposition. Increased division does not make response to change easier in the future.

The international Flathead had a remarkable array of institutions and individuals involved in its environmental governance going into 1974. For instance, few transboundary

water contexts have the following assets: an internationally relevant national park with UNESCO World Heritage Site status (WGIPP); support from an elected official who was willing to consistently advocate for the area at the federal level and would rise to significant power in the coming decades (Max Baucus); a dynamic nearby research body dedicated to monitoring water quality (Flathead Biological Station); and one of the safest international borders in the world with a, largely, supported and successful boundary water treaty in place (US-Canada border and the Boundary Waters Treaty).

Each of those institutions are uncommon on their own and for one basin to be governed by all of them is remarkable. Yet, all of those institutions together still failed to sufficiently meet the four criteria necessary for AG to be able to emerge in 1974. Though the emergence of the Flathead Coalition in the coming years would help meet the criteria and set the stage for the possible emergence of AG, the real takeaway may be just how hard meeting the four criteria is. Another takeaway may also be that either the AG framework or the way the AG framework was operationalized in this study was to blame for these findings. Perhaps the framework does not adequately account for times when mechanisms such as an Environmental Impact Statement exist through enabling legislation but are not triggered, i.e., before the 1977 funding of the crucial FRBEIS when the option to fund it existed but had not yet been taken advantage of. However, the problem may also have been that the approach taken to measuring the baseline EGC did not sufficiently take into account the benefits of interactions that were happening between institutions but that were not accounted for in the historical analysis. Past research looking for signs of AG in historical accounts have found that networks associated with AG have remained elusive (Chaffin et al. 2016). Though this thesis may not be as methodologically

refined as past works, the difficulties experienced in past works in identifying AG were experienced in this work as well.

These problems may also have influenced the results of RQ2a. Operationalizing the conditions that AG should bring to an EGC to the point that each condition was represented by a thematic code for effective use in content analysis was challenging. This is not to say developing codes was challenging, so much as actually using them to produce findings that felt reliable and reproducible was challenging. Whether or not this was the best way to use the concepts contained within the AG framework to determine whether or not these four events were adaptive is unclear. However, this may be due mainly to how the complicated system of shared governance made tracking the impacts of the events on the EGC. Also, whether or not the AG framework was the best available tool for determining whether or not historic events were adaptive is difficult to determine.

Ideally, this study would have assessed the extent to which the current EGC of the international Flathead has adaptive potential. Unfortunately, there was not enough time for this analysis to occur. Nevertheless, the answer to the question may not be terribly hard to determine. The Flathead Basin Commission was de-funded this year by the Montana Legislature and the future of the group is unclear (Ouellet 2018). For obvious reasons, this would be devastating to sustaining monitoring efforts of the international Flathead system. This would also severely reduce the potential for analytic deliberation amongst the institutions currently involved in the international Flathead EGC. Another interesting point brought up by one of the experts that I spoke with is that, since signing the MOU with Montana in 2010, BC has reached out to Alaska, Washington, and Idaho to negotiate and sign similar deals (Pers. Comm. Expert #7, 2018). My interview subject argued that the reasoning behind this was that BC wanted their future

negotiations with the other US states that the province borders to be more on their terms than was the 2010 MOU with Montana. My subject notes that those involved in the negotiations with BC in the run-up to the signing of the 2010 MOU failed to include bans on other extractive practices, such as logging, in the final language. My interview subject's worry is that BC also pursued MOUs with the other US states they border so as to ensure that they would not have to concede as many extractive rights in future negotiations similar to the BC-MT MOU. If this is the case, BC may not be as dedicated to the future health of the international Flathead River ecosystem as the 2010 MOU indicated. Taken together, the uncertain future of the FBC and BC still supporting resource extraction in the basin where possible indicate that governance of the international Flathead is not in an adaptive state. This conclusion brings to mind those made by Cosens (2010) in her analysis of the Columbia River Treaty. Cosens (2010) found that successful environmental governance of the Columbia River social-ecological system hinged on there being a mixture of empowered local actors and infrastructure, oversight, and support provided by state and federal agencies. The potential loss of the FBC would represent a massive blow to the infrastructure, oversight, and support offered by the MT government to local actors dedicated to protecting the international Flathead.

In conclusion, this study made theoretical, methodological, and empirical contributions to the literature. Theoretically, this was a grounded study in environmental governance literature and tested a framework put forth by leading researchers. The structure of the study built upon and extended both theory and our understanding of these topics. Methodologically, this study traced out a river's history and institutional experiences to piece together an example of dynamic transboundary river governance. The methodological choices sought to capture both US and Canadian perspectives. The data collection efforts were grounded in the context of the basin.

Empirically, this study documented governance history of the international Flathead in a systematic way. This approach differs from other works that have been done on this topic by adopting the lens of adaptive governance. Combined, these contributions add this case study of the international Flathead to the body of transboundary river governance literature.

Discussion

The process of conducting the research for this study has left me with a series of thoughts about the efficacy of AG as a historic metric as well as the potential of AG as a tool for improving future environmental governance. The complexities of environmental governance today, as well as the threat of increasing complexity in the future, make AG an exciting theory to consider. Though I partially understood coming into this study how nuanced environmental governance of complex natural resources is, my research efforts showed me that I had much to learn. There are more inputs that factor into the environmental governance of a single natural resource or system at any one time, be they social movements, laws, cultural norms, election results or other influences, than can be clearly understood. All of these inputs are both impacted by and impact each other. Untangling how this process, which eventually impacts environmental governance outcomes, happens is a challenging task. AG emerges as a response to this increasing complexity from a body of literature that seeks to confront complexity in social-ecological systems functionality. My work on this study showed me that there are some areas in which the promise of AG may hold up and others where it may not.

I find AG to be enticing as a concept because it offers a consistent way to view the actions of people, i.e. the most basic level of actors in environmental governance, in relation to environmental decision-making over time. Understanding the motivations behind environmental decision-making over time is key to improving future environmental outcomes. In this study, this

long-term level of analysis seemed to be where the AG framework was most productive. Viewing the ebbs and flows of political initiative, public support, and E-NGO campaigns through the lens of AG brought to life the concept of evolutionary, or non-evolutionary, environmental governance. For instance, viewing the increasingly important role of scientific research in applying pressure on mining advocates over the course of the 40 years from the perspective of that shifting role being a series of adaptations to changing EGCs felt productive. On the other hand, looking at the BC-LUPPs around the turn of the century from the AG perspective did not feel as productive. The impact of sudden changes resulting from elections and changing political goals seemed to not fit well into the analysis of the AG framework. These two examples may offer lessons for both how to use AG as a measure of historic trends and how to use it as a tool for modern natural resource decision makers.

The results of my AG findings show that those with the capacity to think in the long-term, i.e. researchers working with significant historic time frames or E-NGO staff committed to a cause for years and years, may most effectively use the AG framework. This finding stems from the results of my research, which showed how the role of E-NGO's and scientific research evolved in response to shifting demands over the course of the 40-year timeline. For instance, the emergence, as well as early actions, of the Flathead Coalition in the 1970's marked a starting point for the dynamic and vital role that E-NGO river advocates would come to play over the following 40 years. With each passing decade, new and growing numbers of E-NGO's formed other coalitions or ran novel and creative campaigns that increased awareness and maintained pressure on government forces to act to conserve. Eventually, the work of the transboundary Flathead Wild team in the 2000's proved crucial to building the political pressure that helped lead to the signing of the MOU. In many ways, the manner in which the E-NGO's functioned

over the 40 years may have constituted adaptations to the shifting EGCs. Further research should approach this topic more explicitly.

Another area where the findings of this study may show that AG is an effective tool is within analysis of the scientific networks that emerged and helped generate vital research data on the international Flathead. Over the full 40-year timeline, researchers from numerous US and Canadian organizations, from the Flathead Biological Station to BC Ministry of Sustainable Resource Management, all contributed to a growing body of data on the international Flathead. From the beginning of the 40-year timeline discussed in this study there was an investment in good information. This information proved durable over the years and was key to preventing proposed mining operations multiple times. This body of data, which became increasingly focused and reliable over the decades, was key to building strong pro-conservation arguments. The way the network of scientists that did this work changed over time, from local to transboundary to supra-national, may also constitute a series of adaptations to shifting EGCs. This important topic also calls for future research to more clearly determine the role that adaptation may have played in this network development. This future work on the role of E-NGO and scientific networks could be best accomplished by approaching each of networks as its own sub-EGC. Approaches similar to the one used in this study, where the relevant actors are established and tracked over time, could prove productive. This approach would also benefit from integration of methodologies from literature on the role of institutional networks in AG. Finally, the emergence and growth of these networks clearly related to the building of social capital amongst publics involved in this timeline. There also seems to be connections between the growth of social capital and the willingness of involved politicians, scientists, and E-NGOs to push for river conservation measures. Better understanding the connections between these

networks and environmental governance outcomes would also be a good direction for future research on this area.

In terms of how the AG framework used herein could be utilized as a prescriptive tool for improving environmental governance, my findings indicate mixed potential. The ambiguities that exist in the definitions of the criteria and concepts that make up the framework are not ideal if the framework is to be used to inform significant decision-making processes. Work needs to be done to better operationalize the criteria and concepts through a peer-reviewed process before the framework should be used by those involved in resource decision-making processes. Clearer definitions of criteria and concepts as well as more trustworthy methods for determining whether or not real-world circumstances fulfill or meet the criteria and concepts are needed. Also needed is greater discussion of what conclusions can be drawn from an event only meeting some of the criteria or concepts. For instance, is an event that meets four of the five criteria adaptive? This added clarity could begin to make use of the framework an approachable task for an actor involved in environmental governance to determine how to achieve more adaptive governance outcomes. Due to the abstract nature of this type of analysis, the newness of the approach, and the extended periods of time between governance outcomes and impacts felt/seen as a result of governance outcomes use of the AG framework is not well suited to work on day-to-day administration and management of natural resources. Instead, the framework might prove to be most useful to E-NGOs involved in long-term work to achieve certain conservation goals. These actors often have access to information and governance processes while also having much greater flexibility to respond to change than other, more formal, actors. This potential was embodied by the work that Flathead Wild was able to do over the final 15 years of the timeline. Whereas certain actors, i.e. the Montana or BC governments, were largely stuck in their ways

and dedicated to single outcomes, FW was able to pursue numerous diverse options to achieve their desired outcomes. The importance of determining the potential role of actors to work to transition to AG is supported by Chaffin et al. (2016). The authors conclude that there is a void in environmental governance research on the question of when and how transitions to AG should be initiated. Though my research does not directly work to fill this void, my findings show that E-NGO actors may be especially well positioned to initiate the transition to AG.

Crucially though, there are still questions as to whether or not AG is the best concept to improve future environmental governance outcomes. For instance, in the mid-2000's would FW have benefited from viewing their efforts as attempts to increase the likelihood of adaptive outcomes in the EGC? The answer is unclear. If analysis using the AG framework could have pointed the coalition of E-NGOs in a certain direction, then maybe it would have been effective. Still, until there is a clearer distinction between the functions of an EGC that is constantly evolving in response to environmental change and successful, collaborative, multi-jurisdictional environmental governance that may or may not explicitly be achieving outcomes that constitute adaptations, the answer is probably that AG is still best used as a tool for academic research. In other words, the events described in this study that were deemed adaptive or close to adaptive were also the events that, from a non-AG perspective, could have been deemed the most successful. Did the AG lens add anything to the analysis? My results point to yes because the criteria and concepts underlying the AG framework are well designed to shed meaning on the complex functions of environmental governance. Still, more work needs to be done to determine the extent to which referring to and understanding a successful environmental governance outcome as adaptive offers greater utility than referring to it as collaborative or equitable.

Future Research Directions

Several other areas for future research were noted. These include the idea of catalyst, or bridging, institutions, which are single institutions that, through their intentional design, may be able to bridge many gaps in an EGC. Legislating or mandating the creation of these institutions could help an EGC build towards adaptive potential. Next, the role of private funding in shifting international Flathead environmental governance outcomes over the course of the 40 year timeline was unexplored. Several research subjects mentioned that private funding began to support river advocacy work of a series of E-NGO's around the turn of the century (Pers. Comm. Experts #6 and #8, 2018). This funding seems to have significantly increased the capacity of those organizations to make change. Unfortunately, finding any information on how this process worked proved difficult. Finally, I would have liked to have better explored the concept of there being a tipping point when public support for the protection of an area becomes easier due to the public slowly growing to view that place as one that "we protect" (Pers. Comm. Expert #1, 2018). This idea was brought up by an interview subject in reference to their efforts to make the international Flathead such a place. Better understanding how this works as well as whether or not the process can be sped up could be interesting research topics with implications for this context and others.

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APPENDIX 1: 2010 BC-MONTANA MOU

Memorandum of Understanding and Cooperation on

Environmental Protection, Climate Action and Energy

between

The Province of British Columbia

and

The State of Montana

The Province of British Columbia and the State of Montana,

Sharing a common border and desiring to renew and deepen our long-standing relationship of friendship and trust;

Acting on the obligation of our *Environmental Cooperation Arrangement* of 2003 "to identify, coordinate and promote mutual efforts to ensure the protection, conservation and enhancement of our shared environment for the benefit of current and future generations" and to "enter into specific arrangements necessary to effectively address shared environmental goals";

Recognizing the mutual commitment of British Columbia and Montana to sustaining environmental values in the transboundary Flathead River Basin, including its existing high water quality and aquatic biodiversity, and threatened and endangered species and species of special concern listed under United States and Canadian law;

Recognizing that the transboundary Flathead River Basin includes within its area Glacier National Park and Biosphere Reserve which is part of the world's first International Peace Park and a World Heritage Site, and that this unique area merits special protection in particular from risks posed by drilling, mining and other commercial mineral and oil and gas development;

Recognizing that the transboundary region is also an important wildlife corridor that is home to the highest density of large and mid-sized carnivores and the highest diversity of vascular plant species in the United States, and offers superior opportunities to study, document and preserve species biodiversity as changing climate conditions and shrinking glaciers present adaptation challenges;

Recognizing that the Flathead River Basin in British Columbia is located within that portion of the Ktunaxa territory known as Qamma district; that the Ktunaxa have a documented historical connection to the Flathead, have used and continue to use the Flathead for hunting, fishing, trapping, gathering, recreation and as a travel corridor, and hold an important cultural and historical connection to the landscape; that the Ktunaxa exercise aboriginal rights recognized in Canada's *Constitution Act, 1982*, within this portion of the Ktunaxa territory; that through the New Relationship with First Nations, British Columbia is seeking to engage meaningfully with Ktunaxa Nation in a government-to-government relationship; that Ktunaxa Nation is engaged in treaty negotiations with Canada and British Columbia which may result in Ktunaxa Nation owning lands and having law-making powers in relation to lands within the Flathead River Basin in Canada; and that this Memorandum of Understanding and Cooperation (MOU) and Ktunaxa Nation's support for and participation in activities under this MOU is without prejudice to treaty negotiations with Ktunaxa Nation or any other agreements that may be negotiated between Ktunaxa Nation and British Columbia;

Recognizing that the Flathead River flows through the exterior boundaries of the Flathead Reservation and aboriginal territories, and that a large portion of Flathead Lake lies within the exterior boundaries of the Flathead Reservation, and that Flathead Lake is the largest freshwater lake in the western conterminous United States and one of the cleanest in the world; and that the Salish, Kootenai, and Pend d'Oreille peoples highly value this land and these waters and their quality and purity, and that these Indigenous Peoples have effectively managed these waters and lands for thousands of years previously in a sustainable and non-polluting manner;

Recognizing that the Flathead River Basin is the subject of uses that are important to local residents, and that for approximately 70 years the British Columbia Flathead River Valley has been successfully managed for logging, recreation, guiding and outfitting, and trapping, that has maintained the healthy and diverse eco-system that exists today;

Concerned that climate change is having and will have severe environmental and economic impacts on our shared waters, ecosystems, protected areas and jurisdictions in coming decades, and ***agreeing*** therefore that action now is both a moral and economic imperative;

Committed to partnering to capture for our citizens the new employment and investment opportunities that action on climate change will create in the areas of renewable and low carbon energy, energy conservation, and clean transportation;

Agreeing that the full engagement of our provincial and state governments with our respective federal governments, Ktunaxa Nation, Confederated Salish and Kootenai Tribes, and local governments and the support of local residents and citizens is crucial to acting on these concerns and enhancing a collaborative conservation ethic; and

Committed to sharing information and communicating regularly to improve understanding, prevent degradation of water quality and reach mutually beneficial outcomes on environmental protection, climate action and clean and renewable energy;

Now Therefore Desire to Enter into this Memorandum of Understanding and Cooperation and Hereby Agree As Follows:

Environmental Protection

1. British Columbia and Montana commit to work together to:

   A. **Remove mining, oil and gas, and coal development as permissible land uses in the Flathead River Basin.**
   British Columbia and Montana, the latter working with the United States as necessary, will implement measures necessary to prohibit the exploration for and development of mining, oil and gas, and coal in the British Columbia Flathead and the Montana North Fork Flathead River Basin, such action to be completed by July 2010, and subject to agreement on the equitable disposition of the financial implications of this action for the Province of British Columbia respecting existing mining and coal tenure holders.

   B. **Cooperate on fish and wildlife management.**
   In collaboration with Ktunaxa Nation and Confederated Salish and Kootenai Tribes, develop baseline resource information, identify potential opportunities to collaborate on fish and wildlife management, and, where possible, coordinate provincial and state management activities in the transboundary region. Areas for consideration include: noxious weed management; management of alien invasive species; and management efforts related to specific fish and wildlife.

   C. **Collaborate on environmental assessment of any project of cross border significance that has potential to degrade land or water resources.**
   On a reciprocal basis, provide for on-going involvement of interested federal, provincial, state, and First Nations or American Indian Tribes and their designated scientists, in environmental assessments triggered under provincial or state law or regulation with respect to any development in the British Columbia and Montana transboundary area which holds potential to cause degradation of water quality or land resources, as follows:

      i. British Columbia will invite one or more representatives from state, federal and tribal governmental agencies, as appropriate, to participate in Working Groups established for its environmental assessments. Appropriate agencies may include the Montana Departments of Environmental Quality, Fish, Wildlife and Parks, and Natural Resources and Conservation, and the United States Environmental Protection Agency and Department of the Interior, and the Confederated Salish and Kootenai Tribes.

      ii. Montana will invite one or more representatives from provincial, federal and Ktunaxa Nation governmental agencies to participate in its environmental assessments. Appropriate agencies may include the British Columbia Ministry of Environment, Ministry of Forests and Range, Integrated Land Management Bureau, Ministry of Agriculture and Lands and Ministry of Energy, Mines and Petroleum Resources (or such successor Ministries bearing such responsibilities), and Ktunaxa Nation Land and Resources Council.

   D. **Share information proactively.**
   Share information proactively, subject to all relevant laws and regulations, exchange authorizations, permits, approvals, licenses, tenures and draft planning documents on proposed projects that have potential cross-border, wildlife or water quality impacts; and develop early notification procedures to identify problems or sources of concern to residents, First Nations, Tribes, or governmental entities in transboundary areas.

E. Collaborate in responding to emergencies.

Establish procedures to cooperatively respond to emergencies that have the potential for environmental harm, especially in transboundary areas.

Climate Action

II. British Columbia and Montana commit to work together to:

A. Facilitate adaptation to climate change.

Build regional capacity to understand and address the challenges posed by climate change to Western North American jurisdictions by enhancing and coordinating climate monitoring networks, regional centers of applied climate science and regional emergency planning within our jurisdictions.

B. Promote a wood building culture for climate action.

Recognizing that a sustainable forest management strategy aimed at both increasing forest stocks and producing an annual sustained yield of timber for wood construction will generate the largest sustained carbon mitigation and economic benefits, enable enhanced building technologies in structural wood designs for residential and industrial construction and wood products in interior and exterior finishing by seeking and supporting appropriate amendments to building codes and encouraging the use of wood in public leasing and public building projects.

C. Measure progress in reducing greenhouse gas emissions.

Participate in The Climate Registry, a collaboration between states, provinces and Tribes aimed at developing and managing a common greenhouse gas emissions reporting system with high integrity that will provide an accurate, complete, consistent, transparent and verified set of greenhouse gas emissions data from reporting entities, supported by a robust accounting and verification infrastructure.

D. Reduce greenhouse gas emissions.

British Columbia and Montana are signatories to the regional goal set by the Western Climate Initiative of reducing greenhouse gas emissions to 15 percent below 2005 levels by 2020, as well as to ambitious individual provincial and state goals for reducing greenhouse gas emissions by 2020 of 33 percent below 2007 levels by British Columbia and to 1990 levels by 2020 for Montana.

Renewable and Low Carbon Energy

III. British Columbia and Montana commit to work together to:

A. Pursue cooperative clean and renewable transboundary energy policies.

Support and seek adoption of cooperative transboundary approaches to creating more renewable and low carbon energy development in western and continental North America including hydropower, solar, wind, geothermal, biomass, and tidal/wave energy.

B. Harmonize definitions of low impact renewable resources.

Seek and support common definitions of renewable and low carbon resources in state, provincial and federal legislation and regulations that facilitate trading of renewable energy from hydropower, solar, wind, geothermal, biomass, and tidal/wave energy between all jurisdictions within western and continental North America.

C. Support the Western Renewable Energy Zones (WREZ) Project.

Collaborate to ensure the cost-effective and environmentally sensitive development and transmission of renewable and low carbon energy through participation in the Western Governors' Association Western Renewable Energy Zones (WREZ) Project.

D. Encourage a "Conservation First" Utility Framework.

Encourage electricity and natural gas utilities to undertake comprehensive conservation potential studies and set goals for implementing demand-side management (DSM) programs. Utilities will be encouraged to prioritize DSM measures to address energy demand growth. British Columbia and Montana will share information on DSM program performance and will cooperate on the development of harmonized approaches for measurement and evaluation.

E. Leverage energy efficiency through building codes.

Share information on energy performance standards in building codes, with a view to developing collaborative strategies to improve energy efficiency requirements.

F. Enable clean transportation solutions.

Support policies, and share information on standards and best practices to promote biofuels, natural gas, hydrogen, and electricity as transportation fuels, and promote consistent roadside signage for alternative fuel stations.

Partnerships

British Columbia and Montana commit to work together with Ktunaxa Nation, Confederated Salish and Kootenai Tribes, federal and local governments, and with leaders from business, environmental advocates, and scientists to assist with the accomplishment of these goals.

Definitions

For further certainty, "mining" as referred to in this MOU does not include small quarry or sand or gravel operations where the area of activity is two hectares or less, and not more than 20,000 tonnes per annum is removed or to be removed.

Responsible Parties

The Premier of British Columbia and the Governor of Montana are responsible for oversight and implementation of this MOU.

A. The Intergovernmental Relations Secretariat, a branch of the Office of the Premier, is designated lead entity for British Columbia. The Secretariat will act as the lead and coordinating entity and will call upon provincial agencies for implementation.

B. The Governor's Office is designated the lead entity for Montana. The Governor's Office will act as the lead and coordinating entity, and will call upon state agencies for implementation.

Term and Amendment

This Memorandum of Understanding and Cooperation is effective when signed by both the Premier and the Governor and as specifically provided for in this MOU. It may be amended at any time by agreement between the parties and may be terminated by either party upon one year written notice to the other.

AGREED as to form and content and signed and dated in two (2) duplicate originals in Vancouver, British Columbia this 18th day of February 2010.

GORDON CAMPBELL
Premier of British Columbia

BRIAN SCHWEITZER
Governor of Montana

WITNESSED this 18th day of February, 2010:

KATHRYN TENEESE
Chair of Ktunaxa Nation Council

MICHEL KENMILLE
Council Member, Confederated Salish and Kootenai Tribes

APPENDIX 2: INTERVIEW GUIDE

Evolution of Governance of the Flathead of the Flathead River Interview Guide!

Thank you for agreeing to participate in this interview. These interviews are part of the research for my thesis on the evolution of governance of the Flathead of the Flathead River. Specifically, I am interested in the shifting shape of Flathead governance in response to the threat of coal mining in the Canadian Flathead basin over the last 50 years.

These interviews serve to reinforce my findings from review of textual sources on this history. I am striving to identify the 4-6 most influential events over this period of time. Once identified, I will work to deconstruct those events in an effort to better understand how each instance progressed as it did.

These interviews will support that effort by providing me with varied perspectives on the historical timeline. I am interested in learning what you think were the most important events or processes in the effort to prevent coal mining in the Canadian Flathead basin, how they happened, and who was involved. These interviews will also hopefully help reveal previously undiscovered data sources or unexplored themes and confirm or deny my own preliminary findings on these matters.

Before we get started, I want to let you know that your identity as a participant in this study will remain confidential if you so please. If so, your name will not be used in any presentations or written reports. I would like to tape record the interview. Taping ensures that your views are accurately recorded, and it allows me to focus on what you are saying. Is that OK with you?

Terms. First, I would like to define some key terms and ideas so that we are on the same page.

- Governance - "the processes of interaction and decision-making among the actors involved in a collective problem that lead to the creation, reinforcement, or reproduction of social norms and institutions" (Huffy, 2011).
- North Fork of the Flathead River vs. Flathead River- depending on which side of the border you are on, the name is different. I will strive to use the one that you are used to but I use them interchangeably occasionally, as well.
- Resource Extraction – though this time period saw extensive efforts to develop resource extraction operations on both sides of the border, I would like to focus exclusively on the repeated attempts at coal mining in the headwaters of the NF/Flathead River on the Canadian side of the border between 1974 and 2014.

Personal History and Participation. Let's start with your involvement in the Flathead.

- How familiar are you with the history of the efforts to prevent coal mining in the Canadian Flathead?
- Is that knowledge from direct experience?
    - If so, in what capacity did you gain that experience?

Early History. Now, I would like to move into the early history of the Flathead coal mining saga.

- Though the threat of mining has been present in the transboundary Flathead basin since white settlement, I am choosing to zoom in on what I consider to be the modern Canadian coal mining threat. My initial research shows that the US and Canadian public first learned of the existence of serious efforts to conduct large-scale coal mining operations in the Canadian Flathead basin in 1974. For this reason, I am using this year as my starting point for historical analysis. Is this where you would start the analysis? Why or why not?

Moving Forward. From there, moving forward, I am interested in your personal timeline of this saga up to present day.

- Where would you next take the story?
    - (If prompting needed) I often track the story through the timeline of significant scientific studies done on the environmental conditions of the transboundary Flathead. The Upper Flathead River Basin Study was a direct result of this early attention on the coal mining issue. That study helped spawn the massive Flathead River EIS, which seemed to really get the ball rolling. How do you track the timeline of significant events?
- How were different generations of advocates able to maintain, or regain, momentum in the fight against coal mining?
    - What were the biggest hurdles to this? How did they overcome these hurdles?
- How did the relationships between the governments involved and the E-NGO's and stakeholder groups' change over time?
    - Did this benefit the work against mining?

Broader Topics. To begin wrapping up.

- (Unless already explicitly stated) So many things have happened that have shaped this story, what do you think are the 4-6 most important points in this saga?
    - Who were the key players? What instruments, i.e. laws, treaties, enabling legislation, did they use? How did the placement and structure of the actors enable progress?
- Do you think the passage of the NFPA is a good "end" to the timeline?
    - If not, would you take it up to present day?
- Is there anything else you would like to add or anyone else you think I should talk to?