Natural resource industries and the state in collaborative approaches to water governance: a power-based analysis

by

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AUTHOR'S DECLARATION

This thesis consists of material all of which I authored or co-authored: see Statement of Contributions included in the thesis. This is a true copy of the thesis, including any required final revisions, as accepted by my examiners.

I understand that my thesis may be made electronically available to the public.

STATEMENT OF CONTRIBUTIONS

In the Department of Environment and Resource Studies, two forms of presentation of the doctoral dissertation are permitted: (1) a standard dissertation monograph, and (2) a manuscript option centred on three or four published or publishable learned journal-type manuscripts on related matters, packaged with introductory and concluding chapters that integrate the purposes/ research agenda and findings/implications, with the required result forming a conceptual whole. This theses used the manuscript option. Specific requirements relating to the manuscript option, which have been met, are as follows:

- The manuscript-based dissertation must reflect a consistent overall conceptual foundation and research agenda and the parts must be integrated to form a coherent package. The whole must be related to the overall purposes of the Environment and Resource Studies (ERS) doctoral program, and the individual components of the dissertation must originate from the doctoral research.

- The manuscripts must be dominated by the intellectual effort of the student. While members of the advisory committee and others involved in the research may, as appropriate, be listed as secondary authors on individual manuscripts, the manuscripts must be written by the student, and the student must be the first author on each manuscript.

- Where multiple authorship occurs, there must be a preface statement in the thesis outlining the roles of the respective authors, and clarifying the extent and nature of the contribution of the student. Co-authors must sign the statement to indicate that they are in agreement with the evaluation of the roles and contributions of the various authors.

- In no case can a co-author serve as an external examiner for the thesis.

Findings from this dissertation research are reported in three co-authored manuscripts (chapters Two, Three and Four). These chapters have been prepared for submission to refereed journals; only Chapter Two has been submitted for publication.

I testify that I am the primary author of the manuscripts in my dissertation, and that the work was dominated by my intellectual efforts.

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Co-authorship for R.C. de Loë (Advisor) was determined based on meeting the following criteria:

- Substantial contributions to the conception and design of the work, and to interpretation of data;

- Contributions to editing and revising the work critically for important intellectual content;

- Final approval of the versions of the chapters that will be published as refereed journal article;

- Agreement to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

I testify that Marie Claire Brisbois is the primary author of the manuscripts in this dissertation, that the work was dominated by her intellectual efforts, and that I have met the four tests outlined above.

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ABSTRACT

Collaboration is predicated upon inclusive, equitable deliberation and decision-making amongst state, private and civil actors. Through pooling of knowledge and resources, participants are expected to share knowledge and to develop effective and mutually acceptable solutions to water problems. This approach is increasingly being used by governments to support and enable water governance at regional and watershed scales. However, the ability of collaboration to generate improved social and environmental outcomes can be undermined by power imbalances interacting at individual, watershed, state, and global scales. These imbalances are particularly apparent when natural resource industries participate in collaborative processes. Influential economic actors often have the capacity to exert influence at multiple scales in ways not available to most other actors. Industry actors are also systemically privileged in environmental policy-making due to the nature of dominant socioeconomic systems. The ways in which powerful natural resource industry actors use and affect collaborative approaches to water governance have not yet been satisfactorily explained and accounted for in the literature. More broadly, the role and function of power in general represents an incomplete area of understanding with respect to collaboration for water governance.

The purpose of this thesis was to critically examine the roles of the state and industry in collaborative water governance processes through a power lens. The study pursued four specific objectives: (1) to develop a conceptual framework for examining power and its implications for collaborative approaches to water governance; (2) to apply this framework to determine the extent to which relationships of power are explicitly or implicitly identified and addressed in literature on collaborative approaches to water governance; (3) to empirically examine the positions of the state and industry in Canada with respect to power in collaboration for water governance, and; (4) to determine if, or under which conditions collaborative approaches to governance for water can achieve desired social and environmental outcomes.

A systematic review was first used to examine the extent and quality of attention to power in literature on collaboration for water governance. Findings from the review revealed that the majority of literature examined did not fully recognize or account for power beyond more visible and obvious expressions. A cross case study analysis of two Canadian instances of collaboration – the Athabasca Watershed Council in Alberta, and the Thames-Sydenham and Region Source Protection Committee in Ontario – was then used to empirically examine the roles of the state and industry. The case studies allowed examination of the ways that power imbalances manifest at

distinct state and process-level scales in situations defined by the presence of powerful natural resource industry firms. The cross-case analysis revealed that the state fundamentally shapes collaboration through power exerted external to the collaborative process. Findings also revealed that natural resource sector firms often do not need to participate in collaboration because they are able to achieve their policy goals through avenues of influence external to collaboration.

The thesis reveals that power is not fully accounted for in current literature on collaborative approaches to water governance. Moreover, many of the issues disparately addressed by collaborative water governance scholars (e.g., inclusion, participation incentives, outcomes) can be organized into cohesive, transparent relationships by examining collaboration through power. The thesis also reveals that collaboration for water governance is fundamentally shaped by power exerted outside of collaborative processes, significantly at the agenda setting and policy selection stages. Finally, the study provides insight into the motivations of firms with respect to collaboration for water governance. These motivations are inconsistent with the presupposition that collaborative participants will commit to two-way influence, learning and communication. This challenges the ability of collaborative approaches to water governance to achieve the better social and environmental outcomes that often justify their use. While findings specifically address collaboration in Ontario and Alberta, they will be relevant to other instances of collaborative water governance, and collaborative environmental governance more broadly.

ACKNOWLEDGEMENTS

"It's a very important thing to learn to talk to people you disagree with" (Pete Seeger)

"I didn't set out to discover a truth. I was actually sent to…conduct a chair census and learn some humility. But the truth inevitably found me, as important truths often do, like a lost thought in need of a mind." (Jasper FForde)

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Chapter 1

Introduction

1.1 Research Context and Problem Rationale

The landscape of water policy making has changed significantly in the past half century. Traditional government command-and-control models have shifted as diverse actors and processes augment, support, and occasionally replace, state-centric governing models. This shift reflects broad societal changes in public values, state and non-state capacities, and the complex nature of environmental problems facing the world. Emerging co-operative governance models, including adaptive co-management (Armitage, *et al.* 2009; Berkes 2009), community-based natural resources management (Kellert, *et al.* 2000; Leach, *et al.* 1999), and collaborative environmental governance (Holley, *et al.* 2012; Koontz, *et al.* 2004), are being used to integrate the knowledge, resources and capacities of diffuse actors to address increasingly complicated water problems.

"New" governance models have introduced, highlighted or exacerbated a host of challenges to modern democracies. These include fundamental questions of power, legitimacy and accountability (Ansell and Gash 2007; Kallis, *et al.* 2009; Margerum and Robinson 2015; McClosky 2000; Newig and Fritsch 2009; Trachtenberg and Focht 2005). Widely embraced at levels from the local (e.g., Frame, *et al.* 2004) to the continental (e.g., Newig and Koontz 2014), modern co-operative governance approaches have been challenged by the presence of disproportionately influential actors (Holley, *et al.* 2012; Sabatier, *et al.* 2005b), governments reluctant or unable to relinquish control over policy decisions (Fish, *et al.* 2010; Hardy 2010), and the harsh, yet increasingly contested, economic imperatives that often dictate environmental policy decisions (Schmidt 2014; Swyngedouw 2005). Underlying these concerns is a lingering question of whether or not these new governance methods are actually able to produce environmental solutions superior to those made through traditional command-and-control methods (Gunningham 2009; Koontz and Thomas 2006; Lubell and Lippert 2011; McClosky 2000; Newig and Fritsch 2009).

This research was motivated by interest in the potential of new governance approaches to improve the nature and outcomes, social and environmental, of water policy decisions under existing institutional and socioeconomic conditions. Co-operative approaches to the governance

of water and other environmental issues have been widely adopted in Canada (Nowlan and Bakker 2010), including in regions marked by conflict over resource extraction and processing (e.g., the Alberta oils sands, Chemical Valley in Sarnia, Ontario). The mix of actors, institutional relationships and multi-level socioeconomic pressures in these regions have the potential to present challenges to co-operative governance and thus offer intriguing cases through which to examine its potential. Three aspects of the shifting landscape of water governance are particularly important in this thesis: collaboration as an approach to water governance, natural resource industries as powerful environmental policy actors, and power as a concept fundamental to understanding the functioning of society.

Collaborative water governance, according to its proponents, has the potential to incorporate diverse forms of knowledge in policy decisions (Taylor and de Loë 2012; Weber and Khademian 2008), increase the acceptability of proposed solutions (Memon, *et al.* 2010), and tailor solutions to local conditions (Innes and Booher 2004; Margerum 2011). Discussion and debate among an inclusive set of interests are used to foster normative benefits such as empowerment, relationship building and co-learning (Ansell and Gash 2007; Innes and Booher 2010; Lane and Robinson 2009; Margerum 2011; Weber 2009). However, collaborative processes, as with many new governance methods, often rest uncomfortably within existing social, economic and political conditions (Lane and Robinson 2009; Memon and Weber 2010). These conditions can be at odds with the equitable, deliberative, time and resource-intensive processes that both theorists and practitioners state are required for effective collaboration (Emerson, *et al.* 2012; Koontz and Newig 2014).

As a key segment of society, natural resource sector firms possess vast institutional and technical capacity and often play an important role in collaborative water governance (Holley, *et al.* 2012). Neoliberal trends emphasizing the decentralization of services and responsibilities to actors outside of government have bolstered the role of firms in performing tasks previously assumed by the state. These include functions such as monitoring, analyzing and interpreting environmental data, rule setting, and financing (Falkner 2008; Hessing, *et al.* 2005). These evolving roles for the private sector add to its traditional function as the fundamental driver of economic prosperity in liberal, capitalist economies. This increased responsibility, combined with the central function of the private sector in modern economies, creates an interdependent relationship with the state (Brooks and Stritch 1991; Hale 2006). The result is a powerful and privileged position for industry with respect to environmental policy-making (Dür and De Bièvre

2007; Fuchs 2007; Lindblom 1977); this position can challenge the normative ideals that underpin collaborative processes.

Power and privilege define the ways that actors participate in, and influence, collaboration. Throughout the academic literature on collaborative environmental governance, the role and impact of power is frequently acknowledged (e.g., Ansell and Gash 2007; Blackstock, *et al.* 2012; Emerson, *et al.* 2012; Innes and Booher 2010). Power has been described as arguably "the central concept of the social sciences" (Haugaard and Clegg 2009:1). It plays a contested yet essential role in shaping collaborative water governance processes and outcomes (Ansell and Gash 2007; Fung and Wright 2003) and is interconnected with governance concerns such as legitimacy, accountability and transparency (Rogers and Hall 2003; Chapter Two). Several seminal works on collaborative environmental governance address the concept of power. Ansell and Gash (2007) identify power and resource imbalances as fundamental in defining starting conditions and interactions in collaboration. Innes and Booher (2010) argue that mediating power in collaborative processes can slowly shift culturally dominant power structures. Holley et al (2012) discuss power as differentially affecting the success of collaboration on local versus broadly scaled issues, specifically related to private sector involvement. In these cases, and in many others, power in collaborative processes is reflected in issues related to knowledge (Taylor and de Loë 2012), capacity (Koehler and Koontz 2008), inclusion (Shilling, *et al.* 2009), visible conflict (Huxham, *et al.* 2000), retention of veto power by the state (Abers and Keck 2009), influence over public discourse (Pares 2011), and access to decision-makers (Hardy 2010).

Examining collaboration through a power lens can provide a framework for analyzing the actions and motivations of different actors. In the process, it can reveal systemic patterns behind seemingly disparate actions and effects. This knowledge can expose barriers with the potential to inhibit successful collaboration. It can also enable the design of processes that are better able to achieve normative goals of inclusion, equity, learning, and reasoned debate. In the case of natural resource industry firm involvement, where power imbalances are likely to be exacerbated and attempts at collaboration are often problematic (e.g., Benson, *et al.* 2013; Gunningham 2009; Sabatier, *et al.* 2005b), power-based analysis can reveal the scales and methods through which the "powerful" pursue their policy goals (Fuchs 2007; Macdonald 2007).

The purpose of this research was to critically examine the roles of the state and industry in collaborative approaches to water governance through a power lens. Research focused on the ways in which interrelationships between these two key actors impact collaborative processes and

outcomes, and the overall feasibility of using collaboration in water policy-making contexts where industry is a critical player. The study pursued four specific objectives:

1. To draw on existing literature to create a conceptual framework for examining power and its implications for collaborative approaches to water governance;

2. To apply the framework developed in Objective One to determine the extent to which relationships of power are explicitly or implicitly identified and addressed in literature on collaborative approaches to water governance;

3. Building upon findings from Objective Two, to empirically examine the positions of the state and industry in Canada with respect to power in collaboration for water governance, and;

4. To determine if, or under which conditions, as revealed by analysis grounded in power theory, collaborative approaches to governance for water can achieve desired social and environmental outcomes.

The objectives build upon each other. By establishing the treatment of power in the collaborative water governance literature, Objectives One and Two direct the research focus for Objectives Three and Four. Application of the framework developed through Objective One establishes the depth to which power is examined and accounted for in literature on collaborative approaches to water governance and thus determines the specific gaps targeted during empirical research.

Specific and systemic attention to power in literature on collaborative approaches to water governance is rare despite its potential explanatory power, fundamental influence on collaboration, and frequent references to power in the collaboration literature (e.g., Ansell and Gash 2007; Blackstock, *et al.* 2012; Emerson, *et al.* 2012; Frame, *et al.* 2004; Gunningham 2009; Taylor and de Loë 2012). The research presented here directly addresses power in order to reveal its explanatory potential and the ways that it shapes and impacts collaborative processes. It makes a significant and original contribution to knowledge in three ways. First, the thesis establishes the existence of a weakness in understanding related to power in literature on collaboration for water governance; in so doing it characterizes the boundaries and nature of this gap in understanding and reveals that accounting for power that operates outside the collaborative scale is a particular challenge for the literature in question. .

The second major contribution of this thesis builds upon the first contribution through a power-based analysis of natural resource industry firm involvement in collaboration for water governance, as mediated by the state. It addresses a gap in knowledge related to the ways that governments respond to economic and other pressures to shape collaborative processes and

outcomes through actions and decisions both within and outside of processes. While the role of the state in collaboration for water governance has been examined by others (e.g., Agranoff and McGuire 2003; Koontz, *et al.* 2004; Watson, *et al.* 2009), using a power-based approach has the potential to generate additional insights. For example, this research revealed that prevailing preferential relationships between governments and some industry actors fundamentally shape the content, process and outcomes of collaborative approaches to water governance.

The third significant and original contribution to knowledge from the work reported in this thesis responds to a gap related to understanding of the ways that natural resource industry firms use and affect collaborative processes for the governance of water. Other scholars have examined collaborative environmental governance in the context of industry firm involvement (e.g., Gunningham 2009; Holley, *et al.* 2012; Parkins 2010). However, understanding is incomplete with respect to the motivations, actions and opportunities available to firms, and the consequences for collaborative processes and outcomes. Using a power-based analysis, this research addresses these themes and reveals that the motivations and actions of firms are inconsistent with those assumed by collaborative theory, and that this has significant consequences for the practice of collaboration.

As a focal point for studying collaborative governance, water is particularly useful for a number of reasons. Water is fundamental to many other environmental issues that are often subject to collaborative governance approaches including forestry (e.g., Parkins 2010; Takeda and Ropke 2010) and land use planning (Healey 1998; Koontz 2005). As a result, water governance is subject to overlapping social, political and legal structures, operating at multiple scales and analytical levels and providing any number of sites for contested power relations to play out (Zeitoun and Allan 2008). This has resulted in a significant pool of literature addressing collaboration for water governance that provides a foundation on which to build (Fish, *et al.* 2010; Hania 2013; e.g., Innes, *et al.* 2007; Koontz and Newig 2014; Margerum and Robinson 2015; Memon and Kirk 2012; Sabatier et al. 2005; Taylor and de Loë 2012; von der Porten and de Loë 2013a)

Development of a conceptual framework to examine power in collaboration for water governance required insights and ideas from scholarship on collaborative governance, power and state theory. The term "framework" is used here in the way suggested by Ostrom (1990:192), as a "set of variables and the types of relationships among variables that need to be examined in conducting any theoretical or empirical study of a particular type of phenomenon". In this case, the framework identifies potential tangible manifestations of the exertion of power, as defined

below, in collaborative water governance, and organizes those manifestations to reveal a larger picture of how power is being exercised. The framework is specifically targeted at power issues that arise as a consequence of the involvement of natural resource industry firms in collaborative approaches to water governance.

The study used mixed quantitative and qualitative methods to address research objectives. Objectives One and Two were addressed using a systematic review to investigate the extent of attention to power in scholarship on collaboration for water governance. Building upon gaps related to power identified through the review, Objectives Three and Four used a cross case study analysis of two Canadian collaborative processes: the Athabasca Watershed Council in Alberta, and the Thames-Sydenham Source Protection Committee in Ontario. The case studies allowed the opportunity to examine the ways that consequences of power and power imbalances manifest at distinct state and process-level scales in situations defined by the presence of powerful corporate natural resource industry firms. Working to address Objective 3, investigation and analysis were specifically focused on the positioning and roles of the state and industry, and their commitment to collaborative processes and outcomes. The cases studies also illuminated power-related variables with the potential to affect the achievement of collaborative process goals.

While this thesis specifically examines power relative to collaborative water governance, many of the contexts and issues identified will be familiar to broader collaborative environmental governance scholars. Issues of equity, natural resource industry influence and the nature and functioning of the state are prevalent across environmental contexts (e.g., Culley and Angelique 2011; Jentoft 2007; Parkins 2010). As such, the thesis contains insights that will be of use in fields beyond water.

This thesis is presented as a collection of three interrelated manuscripts designed to be publishable in academic journals. Each presents its own distinct research questions, theoretical grounding, methods, results, analysis and findings. One of the goals of this introductory chapter is to clearly nest these three articles within a broader picture outlined by the research objectives and rationale as presented above. Additional contextual information and details are offered to supplement those provided within the manuscripts themselves. The remainder of this chapter reviews relevant literature related to collaborative governance, power theory, state theory and business involvement in environmental making, and presents an initial synthesis of these literatures. The empirical research context is presented, followed by an overview and justification of the methods used. The last section maps out the remainder of the thesis.

1.2　Literature Review

1.2.1　Governing Collaboratively

Governance as a concept is the subject of various interpretations and definitions (e.g., Kooiman, *et al.* 2008; Rhodes 1996; Stoker 1998). In general, governance is concerned with the business of making decisions and taking actions, and the means through which these processes are conducted. In the last several decades, there has been a surge of interest in the inclusion of non-state actors in the governance process resulting in a wide array of co-governance processes (Lemos and Agrawal 2006; Plummer and FitzGibbon 2004). The justification for more inclusive governance is rooted in considerations such as increasing complexity in terms of the problems facing society, decreased government capacities as a result of often controversial neoliberal political trends, and changing norms with respect to the roles that the public and private sectors should play in decisions that affect them (Hardy 2010; Innes and Booher 2010; Koontz, *et al.* 2004; Memon and Weber 2010).

Collaborative governance is an approach to governing that acknowledges broad roles for state, private and civil society actors (Ansell and Gash 2007; Frame, *et al.* 2004; Innes and Booher 1999; Koontz and Thomas 2006; Leach, *et al.* 2002). For contemporary environmental problems that cross social, economic and political boundaries and cannot be solved by any one actor on their own (Duit and Galaz 2008; Innes and Booher 1999), collaboration is increasingly being used to mobilize people, ideas and resources (Koehler and Koontz 2008; Memon and Weber 2010; Robinson, *et al.* 2011).

Collaboration represents a shift from the representative democratic models common in many countries. The inclusion of non-state actors into decision-making processes reflects theory on deliberative democracy (e.g., Dryzek 2000; Fung and Wright 2003; Parkinson 2003), much of which is grounded in Habermasian ideals of communicative rationality (Healey 1997; Murray 2005). Communicative rationality operates upon the assumption that, as processes approach theoretically ideal conditions, known as "ideal speech" situations, equitable, mutually agreed upon solutions are more achievable (Conley and Moote 2003). Ideal speech situations are characterized by broadly inclusive, honest, informed, equitable, dialogue-based approaches to problem solving that generate ethical and rational consensus-based outcomes (Habermas 1981; Innes and Booher 1999; Murray 2005). As will become clear below, many of these characteristics are commonly linked to collaborative governance processes in the literature.

The inclusive nature of collaboration introduces important questions with respect to the legitimacy and accountability of collaboratively made decisions, especially in situations where states seek to collaborate on issues for which they are democratically responsible (Gunningham 2009; Hardy 2010; Holley, *et al.* 2012; Robinson, *et al.* 2011). For this reason, collaborative processes often do not have direct decision-making authority but instead exist within larger governing structures and processes. This creates an inherent tension with respect to integrating place-based and issue-specific collaborative outputs and outcomes into the larger responsibilities and priorities of representative democracies (Emerson, *et al.* 2012; Lane and Robinson 2009; Pares 2011).

As a starting point for understanding the perspective on collaboration taken here, collaborative environmental governance represents power and responsibility sharing amongst state and non-state actors (Carlsson and Berkes 2005). The general nature of this definition emphasizes a key challenge within literature on collaborative environmental governance: that of distinguishing it from other co-operative arrangements such as co-management (e.g., Carlsson and Berkes 2005), adaptive co-management (e.g., Armitage, Berkes, and Doubleday 2007), or broad stakeholder participation (e.g., Bulkeley and Mol 2003). Examining published literature, it is clear that collaboration can take a number of different forms (e.g., Innes and Booher 2010; Memon and Kirk 2012; Pares 2011; Taylor and de Loë 2012). Ansell and Gash (2007) propose a definition that specifically includes public agencies as key actors while other scholars identify collaborative processes that have been initiated by grassroots non-state actors (e.g., Innes and Booher 2010; Lubell 2004b). Some collaborative processes stand alone at the watershed or sub-watershed level (e.g., The California CALFED Bay-Delta Program), while others represent broad, state-led initiatives directing parallel, watershed-scale collaborative processes across a province (e.g., The Ontario Clean Water Act), country (e.g., the Australian National Water Initiative), or continent (e.g., The European Union Water Framework Directive). As Sabatier *et al* (2005:6) note in the context of watershed-scale initiatives, "the collaborative watershed management approach is not a detailed blueprint, but rather a broad strategy for solving a very complex sets of interrelated problems".

Despite the diversity in approaches to collaborative environmental governance, there are some clear trends with respect to common characteristics of collaborative governance. Among these characteristics are broad inclusion of those with a stake in the problem at hand (Conley and Moote 2003; Gray 1985; Margerum 2008), face-to-face deliberation (Innes and Booher 2010; Margerum 2008), and sharing and incorporation of a broad range of knowledge (Ansell and Gash

2007; Taylor and de Loë 2012). There is an emphasis on emergent understanding and learning as a function of knowledge sharing and relationship building (Sabatier et al. 2005). Processes usually pursue consensus even if the achievement of consensus is not a formal requirement (Ansell and Gash 2007). Finally, and of particular significance to this thesis, collaborative processes strive for relative equity amongst actors in terms of ability to influence decisions and outcomes (Ansell and Gash 2007; Barry 2011; Echeverria 2001; Gray 1989; Innes and Booher 2010; Koontz, *et al.* 2004; Margerum 2007; Memon and Weber 2010). Within processes this is reflected in the ability of participants to meaningfully and effectively represent their positions and to receive fair consideration (Innes and Booher 2010).

1.2.2   Power Theory

The study of power is vast, contested and complicated (Haugaard and Clegg 2009; Lukes 2005). Applying a power lens to the study of collaborative environmental governance requires mapping out this complex literature and making difficult decisions about the value of applying one perspective on power over others. Power can be viewed, among other ways, as domination (Weber 1978), capacity for action (Arendt 1970; Parsons 1963), or omnipresent and fundamental to defining our sense of selves (Foucault and Gordon 1980). It can be distributive (where A has power over B), collective (where A and B have power together) (Parsons 1963), or networked (Mann 2012). Frameworks for analysis are numerous. Influential frameworks include Lukes' (2005) three "faces" of power, Gaventa's (2006) power cube, Barnett and Duvall's (2005) four types of power, and Clegg's (1989) "circuits" of power.

Rather than viewing these many different conceptualizations as contradictory and mutually exclusive, it is more productive to view them, as different ways of examining "a cluster of social phenomena central to the constitution of social order" (Haugaard and Clegg 2009:4). The approach chosen for application to a given situation does not imply that one view of power is superior to others, but rather that each view represents a conceptual tool that "enables the author in question to make sense of certain aspects of social life" (Haugaard and Clegg 2009:4). The view chosen will have significant explanatory power with respect to the context under study.

For this thesis, Lukes' (2005) three faces of power were chosen to structure investigation into power in collaborative environmental governance processes. Lukes' analytical framework is particularly suited to situations where power determines "what is known, what is emphasized and who prevails" (Zeitoun and Allan 2008). This effectively describes many policy-making contexts, including collaboration. Lukes' framework is also used in other fields that discuss power in the

context of business involvement in environmental policy-making including global governance (e.g., Falkner 2008; Fuchs 2007) and political science (e.g., Kamieniecki and Kraft 2013; Macdonald 2007). These fields provide rich terrain for relevant insights and comparisons to the research questions under investigation, and will be reviewed in Section 1.2.4 below.

The definition of power used by Lukes (2005:37) states that "*A exercises power over B when A affects B in a manner contrary to B's interests*". This definition interprets power as domination, a limitation that Lukes himself addresses, and defends, in the second edition of *Power: A Radical View* (2005). However, despite its limits, this definition still functions as a useful – and necessary - starting point in examining power in the context of political action (Lukes 2005). To expand, power is viewed as a multi-dimensional, fluid relationship and not as a quantifiable entity that can be owned or possessed (Baldwin 1989; Lukes 2005). Lukes' three "faces" represent a framework for analysis structured around instrumental, structural and discursive dimensions of power.

The exertion of *instrumental power* is visible through overt competition in contested settings and through the measurable use of resources in this context. It is useful in studying the active behavior of political actors but fails to account for bias built into political systems or the role of agenda setting and problem framing in shaping political decisions (Lukes 2005). Exclusive focus on instrumental power also ignores forms of power that are not visible, such as power that leads to inaction rather than action (Lukes 2005; Woll 2007).

Structural views of power specifically seek to reveal many of the factors not addressed by instrumental views. Structural power reflects interactions between markets and states (Strange 1996) and is concerned with the factors affecting the ability to set and define policy agendas. It acknowledges that power can be exercised and decisions made before a given issue is ever presented to the public (Lukes 2005). The second face is embodied through 'mobilization of bias' (Schattschnieder 1960) wherein dominant, hegemonic views that privilege certain groups are reinforced in policy decisions or non-decisions. In this way, certain interests can be denied access to the decision making process. Non-decisions can result from force, threats, social norms and rules or dominant values (Bachrach and Baratz 1962). Some interests may be inherently privileged by structural conditions without having to actively exercise power, thus rendering power hidden or invisible. Likewise, structural conditions can enable the visible exertion of power for some in ways not available to other interests. Conflict, as revealed through structural views, can be either overt or covert. However, power viewed in this way limits the object of study

to variables related to "decisions that have the effect of preventing currently observable grievances (overt or covert) from becoming issues within the political process" (Lukes 2005:39).

Lukes' third face of power, *discursive power*, seeks to move beyond structural explanations of power to reveal latent societal conflicts shaped by broad sociological influences. Examining discourse,

> ...A may exercise power over B by getting him to do what he does not want to do, but he also exercises power over him by influencing, shaping or determining his very wants. Indeed, is it not the supreme exercise of power to get another or others to have the desires you want them to have - that is, to secure their compliance by controlling their thoughts and desires? (Lukes 2005:27)

This type of power transcends analytical levels and is far reaching in that public education, mass media and socialization are used to align societal values with the goals of those with power over these institutions (Lukes 2005; Shapiro 2006). Control over the political agenda is not necessarily associated with decisions in the traditional political sphere and examining this type of power thus involves analyzing contexts and actions beyond direct political forums. As with structural dimensions, dominant hegemonic conditions can privilege certain interests even when those interests make no effort to actively influence systems. Discursive power can also be consciously exercised by interests seeking to shape values, norms and public ideas. This distinction between power resulting from structure and power resulting from agency is useful because it makes clearer those actions and decisions that can be changed in the short term, as opposed to changes that will require broader shifts in institutions and ideas. Lukes acknowledges the inherently subjective nature of discursive analyses – "analysis…is at once value-laden, theoretical and empirical" (Lukes 2005:59), but maintains the explanatory value of the discursive dimension.

1.2.3   Theories of Political Organization and Policy Making

As with the study of power, theories on the organization and operation of democratic states constitute a vast literature (e.g. pluralism, elitism, corporatism). While this thesis acknowledges the multiplicity of theories, its function is not to analyze or critique state theory but rather to use available theory to provide structure to an analysis of power in collaborative environmental governance.

A neopluralist perspective has been applied to examination of the state in this thesis. Pluralism, as a starting point, describes policy-making as the result of competition between relatively equal interest groups within a government framework where the state acts as a mediator (Dahl 1961). Under pluralism, all individuals are assumed to be self-aware and capable of acting on their own interests (Brooks and Stritch 1991; Fuchs 2007; Furlong 2007; Kraft and Kamieniecki 2007; McFarland 2004). Neopluralist perspectives were developed in response to vast empirical evidence that interest groups are rarely equal in capacity and influence, and the state is rarely a dispassionate, impartial moderator. In particular, neopluralism acknowledges business as a privileged interest group in policy-making processes (Cerny 2010; Falkner 2008; Lindblom 1977; McFarland 2004), and the state as a fragmented, non-unified actor populated by multiple sub-factions with often competing goals, values and ideas (Cerny 2010). Neopluralist perspectives are employed in many analyses of participation in governance and policy-making, whether acknowledged (e.g., Brooks and Stritch 1991) or not (e.g., Frame, *et al.* 2004).

Like theories of political organization, there are also a number of different approaches to analyzing policy processes in democratic systems (e.g., public choice, the institutional-ideological framework, policy cycles). This thesis makes use of a five-phase policy cycle approach (Figure 1.1) as characterized by Howlett and Ramesh (1995) because it provides a clear framework for analyzing the processes, actors and influences acting upon and throughout the policy making process (Hessing, *et al.* 2005). In the first phase, agenda setting occurs and the problem is framed and defined (Doern and Phidd 1992:82-84). The nature of the problem frame depends on those with control over decisions at this stage and will constrain the range of solutions that are possible for the given problem (Torgerson 2005b). In the second phase, policy options are developed and can reflect concrete actions, inaction, or purposefully vague ideas. The third phase is the selection of policy from amongst the range of options. In the fourth phases, selected phases are implemented and the fifth phase is policy evaluation. In practice, the phases are not necessarily sequential and are often short-circuited and iterative (Hessing, *et al.* 2005; Howlett and Ramesh 1995).

Policy cycles take place within broader institutional and ideological contexts (Howlett et al 2009). Actors both construct, and are shaped by, ideas and institutions. "Ideas" refer to the cognitive and normative policies, programs, and philosophies that are mediated by actors and shape policy contexts (Schmidt 2008). "Institutions" represent the formal and informal rules, customs and traditions that simultaneously shape, and are shaped by, the ideas and actions of actors (North 1991; Schmidt 2008). Numerous ideas and instiutions play a role in characterizing

any given situation. Howlett et al (2009) identify capitalism as a dominant meta-institution that plays a significant role in defining modern policy contexts – a meta-institution that is particularly relevant in examining way that natural resource industries participate in collaborative processes.

Capitalist institutional structures define a political economic model whereby the concentration of the means of production is in the hands of a relative few individuals or firms, mediated by markets and supported by the labour and skills of the remainder of the population. In order for broader society to prosper, firms need to generate profit. One of the major functions of liberal democratic governments is to ensure the conditions that enable profit generation (Brooks and Stritch 1991). This is the primary condition that privileges firms in policy making contexts; it is discussed in more detail with respect to environmental policy making in Section 1.2.4, below. This condition is also a necessary contextual factor for understanding the roots of the ideas and institutions that shape the nature and feasibility of any proposed policy solution (Howlett, *et al.* 2009).

Figure 1.1:   The policy cycle model (after Howlett and Ramesh 1995)
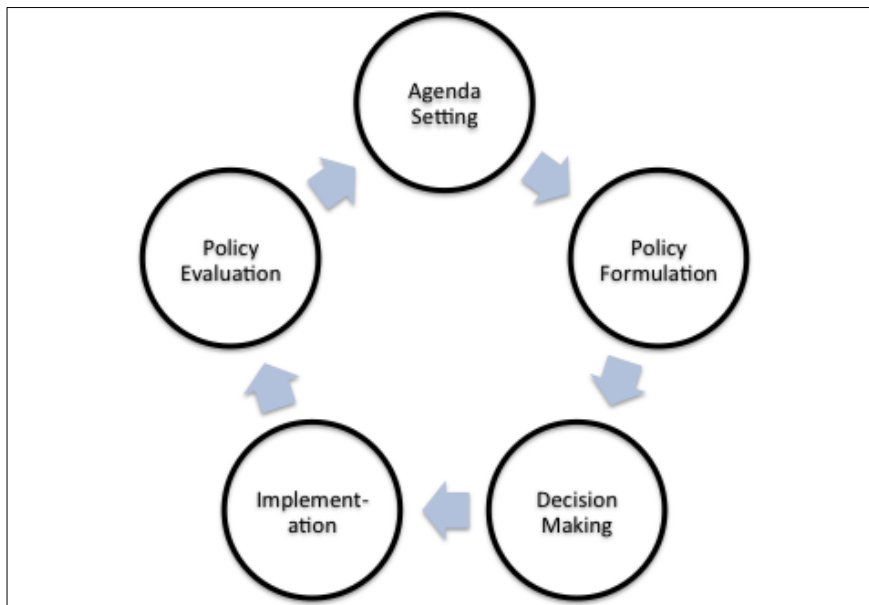
1.2.4   Business and Environmental Policy

Examination of the role and influence of economic interests on environmental policy-making represents a fourth major area of academic research underpinning this thesis. Much of this research integrates academic thought on power, political interaction and policy-making processes as outlined above, and focuses on either global governance (e.g., Falkner 2008; Falkner 2012;

Fuchs 2007; Levy and Newell 2005b) or political science (e.g., Brooks and Stritch 1991; Hessing, *et al.* 2005; Kamieniecki and Kraft 2013; Macdonald 2007). In general, these perspectives highlight that business operates from a privileged position with respect to environmental policy making (Brooks and Stritch 1991; Dür and De Bièvre 2007; Falkner 2008; Fuchs 2007; Kraft and Kamieniecki 2007; Lindblom 1977; Macdonald 2007). This privilege is a function of usually tacit public acceptance that much of the power of business is legitimate because it generally conforms to established rules that can be justified based upon the norms and beliefs of involved populations. Also important is the fact that, in general, there is broad public consent to the exercise of much of the power of business to the extent that it conforms to public expectation (Beetham 2013).

Firms are motivated to work primarily for the generation of profit in order to full their roles in capitalist economies. However, in situations where a lack of legitimacy threatens the ability to continue profit generation, firms may take actions that seek to generate legitimacy. These can include changing firm behaviour, exerting power to change the rules that evaluate firm behaviour, or exerting power to change the societal values that determine the validity of firm behaviour (MacDonald 2007). The remainder of this subsection maps out business privilege and behaviour according to Lukes' analytical framework – a common approach in these fields (e.g., Clapp and Fuchs 2009; Falkner 2008; Fuchs 2007; Macdonald 2007).

The application of Lukes' first face, "*instrumental power",* to business interaction in environmental policy-making is fairly straightforward. Of all three faces, it is the easiest to study empirically because it is characterized by definite, visible cause and effect relationships (Fuchs 2007). Examining instrumental power in the context of business involvement in policy making focuses on the possession of financial, technical, human and other resources that are useful in shaping policy outcomes in competition with others (Fuchs 2007; Torgerson 2005b). It assumes competition over influence, measureable use of resources in that competition, and manifestations of competition that are visible (Falkner 2008).

A great deal of attention is paid to the *structural power* of private actors with respect to capacity to define policy agendas. According to Brooks and Stritch (1991), the privileged position of business is a function of government-industry interdependence, elite level linkages between actor in government and industry, increased access to resources for lobbying and influence, and cultural dominance as a result of an overarching capitalist economic system.

Interdependence of governments and businesses, with a focus here on industry, is a function of both reliance on economic prosperity (Brooks and Stritch 1991; Rabe and Mundo 2007;

Schrecker 2005) and a reduction in state capacity congruent with neoliberal political trends (Howlett 2002). It is this relationship that grants business the legitimacy to exercise power in the context of capitalism. States increasingly rely upon industry for environmental data (Hessing, *et al.* 2005; Williams 2012). Industry also controls many of the resources that determine the effectiveness of environmental policy including finances, technical knowledge and well-developed organizational structures (Falkner 2008; Newell 2005; Torgerson 2005b). This reliance on the resources of industry affords it a heightened degree of influence (Dür and De Bièvre 2007; Falkner 2008; Furlong 2007; Layzer 2007; Macdonald 2007).

The integral role of industry in modern democracies enables legitimate social and working relationships between industry and political elites. These relationships facilitate lobbying efforts (Duffy 2007; Layzer 2007) and allow for elite-level access to agenda setting, policy decisions, and policy implementation that is not necessarily available to other actors (Falkner 2008; Fuchs 2007; Torgerson 2005b). Industries with central roles in the economy are able to wield threats of industrial flight if local regulatory conditions become too onerous (Newell 2005). They also often benefit from a "revolving door" where individual actors with specialized knowledge and social ties move between public and private sectors (Brooks and Stritch 1991; Fuchs 2007; Furlong 2007). Access to resources also provides industry with a buffer with respect to environmental policy influence. Those with resources are able to undertake litigation, and to 'absorb' court sanctions (Falkner 2008; Furlong 2007; Layzer 2007; Macdonald 2007). Well-positioned industries or industry associations are often able to circumscribe potential government regulations by setting their own rules and standards or engaging in corporate social responsibility activities that partially or wholly address regulatory targets (Auld and Gulbrandsen 2013; Clapp and Meckling 2013). In general, the exercise and mediation of the structural power of industry shapes the nature and effectiveness of environmental policy in any given context (Brooks and Stritch 1991; Macdonald 2007; Rabe and Mundo 2007; Schrecker 2005).

The subversive and subjective nature of *discursive power* makes it difficult to study empirically (Fuchs 2007). Nevertheless, it is possible to outline potential discursive outcomes related to business participation in environmental policy-making. Control over discourse reflects an ability to shape societal ideals, values, perceptions and identities through control over knowledge, ideas and technology (Falkner 2008; Newell 2005; Torgerson 2005b). Corporate ownership of the media can allow direct influence over cultural and ideological views (Brooks and Stritch 1991; Fuchs 2007). Research centres that promote business-friendly policy alternatives make these perspectives readily accessible (Kraft and Kamieniecki 2007; Layzer

2007). Public lobbying techniques, 'greenwashing' of corporate activities, and industry-funded NGOs can also be used to influence popular opinion (Kollman 1998; Roy 2007). Generally speaking, the exercise of discursive power through these activities shapes societal norms and the ability, or inability, of policy actors to envision solutions that challenge popular discourse (Fuchs 2007; Lukes 2005).

1.2.5   Summary

Collaborative approaches to environmental governance rest on a foundation of idealized inclusive and equitable participation. Neopluralist perspectives on the participation of actors in collaborative processes, especially with respect to the privileged position of firms in environmental policy-making, challenge these assumed foundations. The result is a potentially detrimental affect on the ability of collaborative processes to generate the kinds of positive social and environmental outcomes generally sought through collaboration. Lukes' (2005) three dimension of power, and Howlett and Ramesh's (1995) policy cycle provide useful analytical frameworks for structuring examination of the nature and form of these potential effects. The above literature will be explicitly integrated into a conceptual framework, presented in table form, in Section 1.4.1.

1.3   Empirical Context

Empirical cases, complete selection criteria for which are listed in Section 1.4, were chosen based on a strong potential for significant power imbalances due to the presence of natural resource industry actors in collaborative water governance processes. Two of the largest concentrations of industrial activity in Canada occur in the oil sands region north of Fort McMurray, Alberta, and in Sarnia, Ontario, a region anecdotally known as "Chemical Valley". Both of these regions are involved in provincially mandated collaborative governance processes and are characterized by dynamics operating primarily at and between the regional and provincial levels. This institutional setting, where local or regional processes are situated within larger state-level institutions, is relatively common with respect to collaborative water governance processes in other jurisdictions around the world. For example, national water policy strategies guide water planning through watershed-based collaborative groups in Australia (Taylor and de Loë 2012; Wallis and Ison 2011). In the United States, the National Estuary Program guides collaborative programs that work to protect coastal ecosystems (Lubell 2004a; Sabatier et al. 2005). The nature of the empirical context indicates a high likelihood that empirical findings will be generalizable to contexts in regions beyond Canada.

1.3.1   Athabasca Watershed Council, Alberta

The province of Alberta self-identifies as both "Canada's energy province" (Government of Alberta 2015) due to its conventional oil, heavy oil and oil sands reserves, and as the "irrigation capital of Canada" (Alberta Water Portal 2013). These monikers reflect the heavy reliance of the province's economy on irrigated agriculture in the south, and resource extraction, including oil, oil sands and forestry, in the north. These economic patterns have strongly shaped the population distribution of the province (Clancy 2014a). Most of the population lives in the southern part of the province although resource-based towns such as Fort McMurray in the north (see Figure 1.2) are rapidly growing in size (Government of Alberta 2012).

Alberta has a long history of dependence upon business capital (Clancy 2014b; Smith and Barr 1984) and this is reflected in its domestic politics. The governing party of the province has not changed since 1971 and a strongly neoliberal ideology is apparent in its political actions and decisions, specifically with respect to promotion of the energy industry in Alberta (Cohen and Bakker 2014; Progressive Conservative Association of Alberta 2015). The exploitation of energy resources has become a central component of both provincial and federal economic strategies since the turn of the century (Clancy 2014b).

Broad provincial support for the energy industry in Alberta has led to widespread debate inside and outside of the province over the environmental implications of oil sands development. Oil sands mining and processing require the removal of large areas of boreal forest, displacement of wildlife populations, modification of fen and wetland landscapes, and the creation of large tailings ponds to hold waste materials with potentially harmful human and ecosystem health impacts (Kelly, *et al.* 2010; Rooney, *et al.* 2012). A perceived lack of commitment on the part of the provincial government to addressing these issues has led to widespread domestic and international critique (Nelson, *et al.* 2014; Palen, *et al.* 2014; Schindler 2014).

Water use in the province is governed under the (2000b) *Alberta Water Act* and the (2000) *Irrigations Districts Act.* Alberta Environment and Sustainable Resource Development (AESRD) and, since spring of 2014, the Alberta Energy Regulator, administer the *Water Act*. In 2003, the province released *Water For Life: Alberta's Strategy for Sustainability* (Alberta Environment 2003). This legislation outlines a broad, directional strategy and was largely driven by Lorne Taylor, then Minister of Environment. *Water For Life* emphasizes three main goals: a safe, secure drinking water supply, healthy aquatic ecosystems, and reliable, quality water supplies for a sustainable economy. The provincial government structured its approach to achieving these goals

around knowledge and research, water conservation, and partnerships as outlined in the *Water For Life Action Plan* (2003).

Figure 1.2:   The Athabasca River Watershed, Alberta, Canada

Three specific types of "partnerships" are promoted under *Water For Life.* The Alberta Water Council operates at the provincial level and is comprised of nominated representatives from industry, non-governmental organizations (NGOs), the province, and other governments. Its function is to provide guidance and expertise in the pursuit of *Water For Life* goals. Water Stewardship Groups operate at the local level and work on a decentralized basis to co-ordinate with local interests, to provide input to larger planning processes, and to carry out stewardship activities. Watershed Planning and Advisory Councils (WPACs), which are of principle interest to this thesis, are broadly representative groups organized according to the 11 major watersheds in Alberta. WPAC membership is comprised of Aboriginal communities, conservation groups, industrial actors and provincial and municipal government representatives. Through long term,

deliberative processes they are intended to "engage watershed residents in their work and seek consensus on solutions to watershed issues" (Alberta Environment and Sustainable Resource Development 2014). In function and form, even though they are described as a kind of "partnership", WPACs are consistent with the definition of collaborative water governance provided in Section 1.2.1.1.

Some current WPACs, such as the Bow River Basin Council, existed prior to *Water For Life* and applied for WPAC status when it became available. Others, such as the Athabasca Watershed Council, a case analyzed in this thesis, were newly formed to fulfill *Water For Life* goals. As such, WPACs vary in terms of their institutional history, capacity and activity. All WPACs are tasked with setting Terms of Reference, conducting State of the Watershed Reports to characterize watershed conditions and to identify gaps in knowledge, and creating a comprehensive Watershed Management Plan. These management plans are clearly described as advisory, not regulatory, in all government documents although WPACs are encouraged to "[s]eek adoption of these plans by the jurisdictions (municipal, provincial and federal) and stakeholders with the appropriate legislated authority to implement recommendations" (Alberta Environment 2005:10). The Government of Alberta outlined its roles with respect to *Water For Life* partnership activities in the *Enabling Partnerships* document (Alberta Environment 2005). With respect to WPACs, these roles include the provision of at least partial administrative and project funding, the use of Government of Alberta staff with technical and administrative expertise, promotion of collaborative principles, and a commitment to reviewing and taking into consideration the recommendations put forward in Watershed Management Plans.

The Athabasca Watershed Council was the last of the province's WPACs to be designated, in 2009. The watershed, pictured in Figure 1.2, is home to diverse economic interests, the most significant of which are oil and oil sands reserves located north of the city of Fort McMurray, Alberta. Forestry, pulp and paper, agriculture, coal mining and aggregate extraction activities also take place in the basin. Population in the Athabasca basin is concentrated upstream, south and west of Fort McMurray with larger settlements in Athabasca, Whitecourt, Hinton, Jasper and Fort McMurray itself. The head of the Athabasca River is located in the Rocky Mountains in Jasper National Park and is relatively protected from human impacts until it leaves the park area upstream of Hinton. The lower portions of the watershed, north of Fort McMurray, are home to a number of First Nations communities of the Athabasca Chipewyan Nation including Fort Chipewyn and Fort MacKay (Government of Alberta 2012).

Complicating the institutional landscape in Alberta are a number of separate planning processes with overlapping jurisdictions and responsibilities. As mentioned, WPACs represent non-regulatory, advisory, watershed-based planning processes. At the same time, the Government of Alberta released the 2008 *Land Use Framework* which assigned the authority to produce legally binding land use plans to collaboratively run Regional Action Committees (RAC) (Alberta Environment 2008b). WPACs can petition for a seat on a given RAC but there is no requirement that they be included or consulted despite the influence of land use activities on water issues. There are also other monitoring and planning processes specifically directed at the oil sands region. For example, the Joint Oil Sands Monitoring Program (JOSM) is a federal-provincial-industry initiative to monitor and produce data related to oil sands operations (Government of Canada 2013).

The province distinguishes between water management and watershed management. Under the *Water Act* (2000b)*, AESRD is responsible for establishing regulatory water management plans, setting legally binding Conservation Objectives to protect water levels and quality, and managing the shores and beds of public water bodies. The presence of Jasper National park and significant reserve lands under the jurisdiction of the federal government within the Athabasca River basin introduce another set of actors into water and watershed management in the province. The net result is a fragmented and overlapping institutional landscape with respect to water and watershed management in Alberta.

1.3.2   Thames-Sydenham and Region Source Protection Committee

The province of Ontario, Canada's most populace province, is characterized by a diverse landscape and economy. The sparsely populated north is mainly occupied by Indigenous peoples, and cities, towns and communities that rely on resource extraction. Forestry, forest product processing, mining and mineral processing have traditionally defined economic activities and political decisions in northern Ontario. Most of the province's population lives in the south and economic activities there reflect a very different geography. Agriculture, manufacturing and service industries, facilitated by both arable land and ready access to the Great Lakes, define the political economy of southern Ontario (Winfield 2012).

Ontario has a varied political past and has been governed in turns by right-leaning Progressive Conservatives, centrist Liberals, and the left-leaning New Democratic Party. Since the Second World War there have been varying amounts of political attention to environmental issues, largely in response to shifts in public opinion, concurrent with periods of relative

economic stability (Harrison 1996). Environmental policies have also been a function of the governing party's ideological position with respect to promotion and protection of economic development. At different points in time, the province has been the subject of both condemnation for its environmental neglect in the face of economic promotion, and praise for progressive policies (Winfield 2012).

Water in Ontario is managed under many different statutes, but the *Clean Water Act* (2006) is especially important in this thesis. This legislation was enacted based upon the recommendations of the Walkerton Inquiry (O'Connor 2002a; O'Connor 2002c) into contamination of a municipal drinking water supply in Walkerton, Ontario in 2000. The contamination resulted in the deaths of seven people and thousands of illnesses. Among the recommendations produced by the Inquiry was the use of a multi-barrier approach to the protection of drinking water, including the use of watershed-based Source Protection Plans developed through collaborative governance processes. Following the inquiry, the provincial government convened a multi stakeholder Advisory Committee on Watershed-based Source Protection Planning to produce a planning framework for achieving the Inquiry's recommendations (Advisory Committee on Watershed-based Source Protection Planning 2003). The government then produced a White Paper on Watershed-based Source Protection Planning (Ontario Ministry of Environment 2004) in order to outline draft framing, content and objectives for broad public comment and consultation. The province also convened two other committees to advise throughout the policy development phase. The Technical Experts Committee, a multi-stakeholder panel of experts, produced a Threats Assessment Framework (Government of Ontario 2004) identifying potentially significant threats to drinking water. The Implementation Committee, also a multi-stakeholder panel of experts, produced a Report outlining proposed institutional, legal and governance guidelines for the committees (Ontario 2004). Both the White Paper and the Implementation Committee Report proposed governance practices consistent with the best practices for collaborative governance outlined above. The final *Clean Water Act* addresses the protection of municipal drinking water sources through watershed-based collaborative processes.

The *Clean Water Act* identified Ontario's conservation authorities as lead organizations for Source Protection in the province. In Ontario, conservation authorities are designated under the *Conservation Authorities Act* (1990) as watershed-based entities. Some conservation authorities

Figure 1.3:   The Thames-Sydenham and Region Source Protection Region, Ontario, Canada
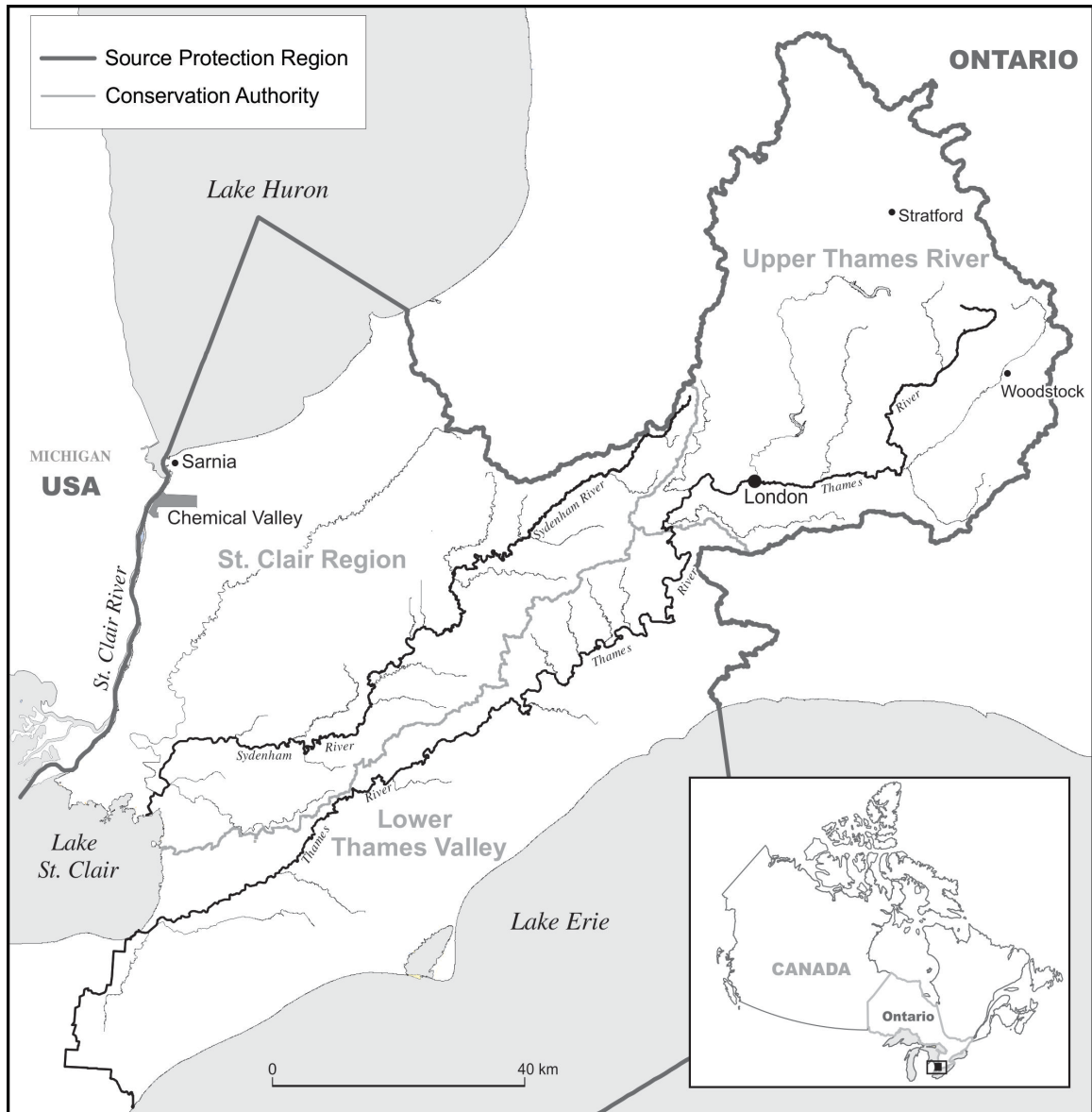
have considerably more institutional capacity than others. Thus, the province worked with the conservation authorities to group neighbouring watersheds into Source Protection Regions with attention to balancing capacity and resources. The 19 resultant Source Protection Regions do not cover the entire province but do encompass the more populated regions in the province's south. All Source Protection Committees were selected to reflect a balance of interests, with membership proportioned according to one third of actors representing business and industry, one third representing municipal and local governments, and one third representing "other" sectors including non-governmental organizations. Each group has a chair and non-voting representation

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from First Nations, public health authorities, and the provincial government. Groups are supported by conservation authority staff and a dedicated Liaison Officer from the Ministry of the Environment. Parameters contained within the *Clean Water Act (2006)*, and a subsequent *Discussion Paper on Requirements for the Content and Preparation of Source Protection Plans* (2009), are consistent with those associated with collaborative processes as described above.

The Thames-Sydenham and Region Source Protection Region groups together the Upper Thames River Watershed, the Lower Thames River Watershed and the St. Clair Region Conservation Authority. It includes larger cities such as London and Sarnia, as well as numerous smaller cities and towns. This region is economically dominated by agriculture but is also characterized by limited aggregate, oil and gas resources, and other small industries. The region also hosts a significant concentration of petrochemical industries in Sarnia on the shores of the St. Clair River, an area informally known as Chemical Valley (see Figure 1.3). While heavily regulated, there have been significant, well-documented and ongoing problems related to environmental contamination by the industries operating in and around Sarnia (Environmental SWAT Team 2005; International Joint Commission 2006; Luginaah, *et al.* 2010).

The *Clean Water Act* established deadlines for the production and implementation of collaboratively-developed Source Protection Plans. The process requires committees to submit draft Source Protection Plans to the Minister of Environment. Upon review, plans are returned to committees with recommended and required changes that are to be collaboratively discussed and addressed by the committee. When a final draft has been approved by the Minister of Environment, these plans become regulatory, rather than advisory, documents. At the time this thesis was completed (early 2015), all Source Protection Plans had been submitted to the Ministry of Environment and several Plans had been approved. Once approved, the plans are legally binding and implementation will occur going forward (Government of Ontario 2006).

1.4 Methods

Each of chapters Two, Three and Four contains individual methods sections that are tailored to the goals of the respective manuscripts. This section provides a complete picture of the methodological approach used to achieve the larger study objectives outlined in Section 1.1. The study makes use of largely qualitative methods, defined by an interpretivist approach, in order to allow for the depth of analysis required to investigate power. The study of power is itself inherently interpretivist because power shapes how reality is experienced (Flyvbjerg 1998a; Lukes 2005). This perception of reality defines the context within which real life actions related

to governing water through collaborative processes occur. Particularly relevant to the study of power, an interpretivist paradigm acknowledges the subjective perceptions of reality as experienced and expressed by both study participants and the researcher. This paradigm allowed for an iterative approach to the generation of understanding and knowledge throughout the project (Guba and Lincoln 2005).

A systematic review was first used to examine the treatment of power in literature on collaboration for water governance to determine the existence, scope, and nature of a gap in the literature. Systematic reviews are useful for reviewing large bodies of material, synthesizing major findings, identifying knowledge gaps and informing future research agendas using transparent, defensible protocols (Petticrew and Roberts 2006; Torgerson 2003). Common in health research, they are generally used to analyze quantitative studies and to generate statistical summaries. This study makes use of a systematic review protocol suited to qualitative social science inquiry (Petticrew and Roberts 2006; Torgerson 2003). While some quantitative techniques are used to summarize findings, the analytical approach is qualitative.

Building upon the systematic review findings, a cross case study analysis was then used to delve into the identified gaps. Case studies allow for situated analysis that enables a more complete understanding of context (Gerring 2007; Yin 2009). This is particularly important when studying power because of the role of context in defining the interpretation of power (Flyvbjerg 1998a; Lukes 2005). Adopting a cross-case approach allowed for the depth of inquiry required for power analysis while providing some degree of generalizability (Stake 2005; Yin 2009). Selection criteria, outlined below, reflected the need to isolate, to the extent possible, a small number of independent variables (Druckman 2005). This facilitated the examination of state and industry roles – variables expected to be interdependent rather than strictly independent – while minimizing variability. The complex political economy of both empirical cases prevented clear confirmation of causal relationships between the variables examined and outcomes, but did reveal strong causal patterns that allowed the development of study findings. The cross-case approach also accounts for some of the difficulties with generalizability acknowledged in literature on collaborative environmental governance relating to research involving single cases (e.g., Conley and Moote 2003).

Comparisons between the cases and generalizability were made more effective by imposing criteria to ensure the selection of cases with similar characteristics (Conley and Moote 2003). Four criteria were used. First, the study examined examples of collaborative water governance, as defined in Section 1.2.1, in situations where a state-level body had used legislation to initiate

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collaborative processes at the local, regional or watershed level. This was done in order to examine collaboration within a relatively common state-led institutional context (e.g., Cohen and Bakker 2014; Gambert 2010; Hania 2013; Taylor and de Loë 2012; Watson, *et al.* 2009). It also facilitated examination of the political and socioeconomic impacts of nested collaborative processes with respect to power. Cases fitting this criterion allowed examination of power in the context of scale.

The second criterion was the presence of at least one major, incorporated natural resource industry actor as a collaborative process participant. Restricting processes in this way made it easier to bound a potentially unwieldy power analysis by increasing the likelihood that the types and forms of power moving through systems would be similar. It also ensured that case studies would provide rich information due to the likely presence of significant power imbalances as predicted by theory in Section 1.2.4. Third, cases were selected where state actors were active participants in collaborative processes. This is a relatively common feature of many collaborative processes (e.g., Hardy 2010; Koontz, *et al.* 2004; Sabatier et al. 2005), and facilitated in-depth analysis of power as mediated by the state (examined in depth in Chapter 3). The fourth criterion was geographic diversity in order to enhance generalizability.

A list of potential cases was compiled based on reviews of Canadian provincial and federal policies, academic and grey literature on collaboration and collaborative water governance processes across Canada, and through discussions with key informants from academia, and the public sector. The two cases ultimately selected – the Athabasca Watershed Council and the Thames-Sydenham and Region Source Protection Committee – in addition to meeting selection criteria, address two of the most controversial sites of industrial activity in Canada (e.g., International Joint Commission 2006; Luginaah, *et al.* 2010; Palen, *et al.* 2014; Schindler 2014).

1.4.1   Conceptual Framework

The conceptual framework developed for this thesis reflects an integration of literature on governance, collaborative governance, collaborative environmental governance, power, state theory, and business involvement in environmental politics. Specifically, as discussed in Section 1.2, collaborative governance processes were viewed through a neo-pluralist lens and conceptually divided into phases according to Howlett and Ramesh's (1995) policy cycle model. Power theory and research on business involvement in environmental politics were then used to map out potential impacts of power imbalances, as defined according to Lukes, on collaborative water governance processes. The power literature provided theoretical guidance according to

Table 1.1: Conceptual framework for the application of power theory to collaborative water governance

Key Parameter from Power Theory	Key Parameter from Environmental Policy-Making in Literature	Specific Concern for Collaborative Water Governance
Instrumental Power: Behaviour, decision-making, key issues, observable conflict, subjective interests (seen as policy preferences revealed by political participation) (Lukes 2005:29)	• Coercion, co-optation, diversion, manipulation, misinformation (Culley and Angelique 2011; Dahl 1957; Falkner 2008; Newell 2005) • Financial resource imbalances (Falkner 2008; Fuchs 2007; Levy and Newell 2005a; Macdonald 2007) • Visible difference in capacity (technical, social, institutional, etc.) (Falkner 2008; Fuchs 2007; Levy and Newell 2005a; Macdonald 2007)	Coercion, co-optation, diversion, manipulation, misinformation Facilitation or bridging actors who mediate power Imbalance of financial resources Unequal capacities (technical, social, institutional, etc.) to participate
Structural Power: Decision-making and non decision-making, issues and potential issues, observable (overt or covert) conflict, subjective interests (seen as policy preferences or grievances) (Lukes 2005:29)	• Control over problem definition and agenda setting (Bachrach and Baratz 1962; Cook, *et al.* 2013; Guber and Bosso 2013; Hessing, *et al.* 2005; Levy and Newell 2005a) • Inclusion or exclusion of specific interest groups (Freudenburg 2005; Gaventa 1980) • Elite-level relationships and lobbying (Brooks and Stritch 1991; Duffy 2013; Falkner 2008; Finger and Svarin 2012; Fuchs 2007; Macdonald 2007) • Control over information and knowledge (Ascher and Steelman 2013; Dür and De Bièvre 2007; Falkner 2008; Levy 2012; Macdonald 2007; Torgerson 2005b; Williams 2012) • Regulatory controls on industry, self-monitoring, self-regulation and private rule setting (Auld and Gulbrandsen	Who instigated collaboration? Limits of consensus Problem definition or framing and/or agenda setting Inclusion or exclusion of important actor groups Decision making power residing with, or being retained by, the state Governments initiating tokenistic processes that exist to generate legitimacy instead of to influence decisions Appropriate/inclusive use of knowledge Elite level relationships Lobbying external to the collaborative process Control over information production and use Background of representatives (e.g. evidence of revolving doors) The structural bias of capitalism or implications thereof Governments favouring business

	2013; Clapp and Meckling 2013; Falkner 2008; Newell 2005; Torgerson 2005b)	interests
		Governments favouring non-business interests
		Collaboration being influenced by external political contexts
Discursive Power: Decision-making and control over political agenda (not necessarily through decisions), issues and potential issues, observable (overt or covert) and latent conflict, subjective and real interests (Lukes 2005:29)	• Bias of dominant discourse (Falkner 2008; Newell 2005; Torgerson 2005b) • Efforts to control discourse (Cook, *et al.* 2013; Culley and Angelique 2011; Falkner 2008; Fuchs 2007; Levy and Newell 2005a; Torgerson 2005b)	Who is, or is not, favoured by the dominant discourse
		Efforts to control discourse
		Prescription of a "language" of collaboration
		Dominant, hegemonic themes or values related to capitalism influencing collaboration
		Groups having to self-censor to participate

Lukes' framework for analysis. The global governance and political science literatures provided additional theory, contextually appropriate to the study, and extensive empirical evidence of the ways that power moves through, affects and is affected by, environmental policy making contexts where private actors play significant roles.

An interpretivist approach meant that framework development was iterative and reflexive. Initial versions were grounded solely in the literature but growing insights and empirical experience resulted in ongoing refinement, as outlined in Sections 1.4.3.1 and 1.4.3.2, below. The conceptual framework, specifically targeted at assessing collaborative water governance in the context of natural resource industry firm involvement and presented in Table 1.1, guided the systematic review presented in Chapter Two, and informed data collection and analysis in Chapters Three and Four.

In constructing Table 1.1, Lukes' (2005) three dimensions of power were first used to provide a basic structure (Column 1). Additional literature on power, business involvement in environmental policy making and policy process was then used to identify ways that power could be expressed in environmental policy making contexts as identified through existing theory and empirical research (Column 2). These potential expressions of power were then integrated with theory on collaborative governance to develop the initial set of power indicators that were used in coding and analysis (Column 3). As identified by Lukes (2005), others (e.g., Haugaard and Clegg 2009), and in Section 1.2.2, there is often overlap between categories, and interpretation of these categories tends to be subjective. In this research, overlap was preferred to omissions. Further, in

applying the indicators, attention was paid to the potential for exertion of power (e.g., does elite level access exist for a given actor?); the active exertion of power (e.g., was elite level access utilized in a given situation?); and, where possible, the success of an attempt to exert influence (e.g., did elite level access result in favourable policy decisions?). These distinctions are apparent throughout the text of the thesis.

1.4.2   Data Collection

Data collection methods are summarized here, and reiterated as appropriate in Chapters Two, Three and Four.

1.4.2.1   Systematic Review

One of the strengths of systematic review methods is the use of clearly defined, transparent protocols (Petticrew and Roberts 2006). Systematic reviews use a clearly defined research question to state what the review seeks to discover. For the purposes of this study, the review sought to determine: *how, and to what extent, does the literature on collaborative approaches to water governance address issues of power as defined by the conceptual framework?*

Clearly defined inclusion and exclusion criteria are a second major feature of systematic reviews and attempt to minimize researcher bias (Petticrew and Roberts 2006). This study focused on four main selection criteria, summarized in Box 1.1. First, the study included only research in English due to practical language constraints. Second, the study focused on articles published in academic journals as opposed to books, book chapters, conference presentations, or other reports. While it is possible that some materials were missed due to this restriction, it is nonetheless justified based on trends in literature on collaborative environmental governance where many authors choose to present their most salient findings in both book and article format (e.g., Gunningham 2009; Holley, *et al.* 2012). The criteria also defined a set time period between 2009 and January of 2013 when the final article search was conducted. This criterion was imposed based on the assumption that advances in scholarship related to power prior to this time frame would be reflected in later scholarship. Time limitations were necessary in order to return a reasonable quantity of articles for analysis by a single researcher within the restrictions imposed by the doctoral process.

Finally, articles were sought that specifically addressed collaborative water governance. Application of this criterion required two phases: the first to return a pool of articles to be considered for inclusion in the review, followed by a second, more intensive reading of returned

Box 1.1:   **Systematic review selection criteria**

•   Articles published in English •   Articles published in academic journals •   Articles published between 2009 and January 2013 •   Articles addressing collaborative water governance either as self-identified, or as defined in Section 1.2.1.1

articles to ensure they described processes that could be characterized as collaborative water governance as defined in Section 1.2.1.

In the first phase, a set of search terms that broadly encompass water, governance and collaboration was defined (see Box 1.2). Searching pools of literature for a systematic review is an exercise of balance between sensitivity and specificity. Very sensitive studies make extensive use of many possible search terms and return a high proportion of potentially relevant studies. Very specific studies retrieve a relatively low number of studies that do not meet the search criteria. While high sensitivity is theoretically ideal, it also involves an extremely large analytical commitment in order to identify the relevant studies (Petticrew and Roberts 2006). For example, a highly sensitive pool of search terms that included many possible synonyms for collaborative watershed groups returned 6,264 articles while the use of terms in Box 1.2 returned 399 articles. Using more specific terms was thus a necessary trade-off.

The terms in Box 1.2 were applied to Scopus and ISI Web of Knowledge. These indices were used because they provide very broad and complete coverage of literature published on collaboration, environmental problem solving, and governance. The searches were applied to titles, abstracts and keywords and excluded scholarship from purely natural science or engineering journals, focusing instead on the fields of arts, social sciences, business and multi-

Box 1.2:   **Systematic review database search terms**

Keywords, Titles and Abstracts: collaborat*   AND governance OR manag* OR plann*   AND water* OR catchment* OR basin* OR river* OR lake* OR stream* OR groundwater OR "ground water" OR flood* OR irriga* OR drainage OR hydro-electric OR hydro-power OR hydropower OR hydroelectric OR hydrolog* OR hydro-log*

disciplinary fields. The Scopus scan returned 368 articles while the ISI Web of Knowledge scan returned 31 articles. There was considerable overlap between the two databases.

Articles returned by the database searches were then manually examined to identify those works addressing collaborative water governance. In some cases, authors clearly identified their topic of study as collaborative water governance. In situations where authors did not self-identify, the full text of articles was examined to identify articles addressing processes characterized by broad stakeholder inclusion, face to face interaction, facilitated deliberation and negotiation, knowledge and resource sharing, Habermasian ideals of communication, and a desire for consensus or near consensus (or a majority of these factors). This phase narrowed the study pool from 268 articles to 51 relevant articles for the Scopus search, and from 31 articles to 19 relevant articles for the ISI Web of Knowledge search. Accounting for overlap between databases, the final study pool contained 57 articles. A complete list of articles included in the study is available in Appendix 1.

1.4.2.2   Case Studies

Data for case studies were obtained through semi-structured interviews, relevant documents, and personal observations between July 2013 and December 2014. Interviews were a particularly useful data source since many forms of business power are most effective when exercised in secret (Fuchs 2007) and are thus only superficially publically documented and available. Documents and personal observations provided context and depth, revealed potential interesting questions, and allowed triangulation and crosschecking between data sources.

Both purposeful and snowball sampling techniques were used to identify potential interviewees from municipal and provincial governments; collaborative group staff, board members and participants; industry and industry associations; non-governmental organizations; and, other individuals with relevant insights on the collaborative processes. In Ontario, 12 interviews were conducted with individuals operating at the watershed scale, and 9 with interviewees at the provincial scale. In Alberta, 10 interviewees operated at the watershed scale, and 10 operated at the provincial scale (Table 1.2). In both cases, the majority of interviewees were able to provide insights on activities at both scales. All interviewees were asked to identify other potential interviewees in order to broader the perspectives included in the study. Interviews ranged from 45 minutes to almost two hours and a number of interviewees provided follow up interviews or written comments.

Table 1.2:   Summary of interviewee backgrounds and locations

Sector	Alberta	Ontario
Provincial Government	5	5
Municipal Government	1	3
Industry	3	6
Collaborative Group Staff (Alberta) or Conservation Authority Staff (Ontario)	5	4
Civil Society Collaborative Group Representatives	5	2
Provincial Policy Advisors	1	1
Total	*20*	*21*

Interviews were semi-structured in order to generate data that reflect the experiences, perceptions and perspectives of the interviewee (Mason 2004). This was especially important due to the context dependent nature of interpretations of power and the importance of situated study (Flyvbjerg 1998b). The semi-structured format allows flexibility in the content pursued and thus acts to decrease interviewer bias by allowing the exploration of topics beyond the set interview questions (Mason 2004). This is consistent with the interpretivist approach to the broader study.

Interviews sought to determine if and how the potential consequences of power imbalances identified in the conceptual framework were being expressed in the cases in question. The political nature of power meant that it was necessary to carefully construct questions in order to transparently address research objectives while adhering to cultural norms. Table 1.3 maps out several examples of how potential issues identified in the conceptual framework were formatted for the semi-structured interview guide. The interview guide was iteratively refined throughout the study based on changes to the evolving conceptual framework and insights gained during interviews. Where required, early interviewees were contacted to fill in gaps related to refinement of the interview guide but this was generally not required as most changes constituted the omission of ineffective questions. Questions were modified depending on the nature of the interviewee (e.g. provincial government employee vs. civil society collaborative group participant). These differences are reflected in the interview guide. The revised and complete guide is available in Appendix 2.

Table 1.3:   Examples of interview question development

Proposed expression of power identified by the conceptual framework	Example interview questions posed to address theme
Is elite level access available to some participants affecting processes and outcomes?	What are your goals when participating in collaboration?
	Do you think you are able to influence policy through the collaborative process? Why or why not?
	Where do you go and to whom do you talk when you want to influence policy?
Did retention of state control, including over agenda setting, approval and implementation, impede the ability of collaboration to effectively address policy issues?	Were there any issues that you would have liked to address that you weren't able to talk about in the collaborative process?
	Do you feel like everything was on the table or can you identify issues that were off limits?
	How do you feel output from the collaborative process will be used?
Did capacity issues affect processes?	Did you feel everyone was able to participate equally? How or why?

Interviews were all digitally recorded. During interviews, notes were made on content and to record personal observations. Interviews were transcribed verbatim except where interviewees requested sections to be considered "off the record". All transcripts were returned to interviewees in order to verify their accuracy and to provide them with an opportunity for clarification.

All interviews were conducted with the approval of, and in accordance with, the University of Waterloo Office of Research Ethics. Interviewees were clearly informed of the study goals and intent through an information letter that was either emailed or presented in person to the interviewee. Interviewees were presented with a consent form requesting that they acknowledge their free participation in the study, give consent for digital recording of interviews, and that they agreed to the use of anonymous quotations in any theses or published materials resulting from the study. All interviewees participated freely and consented to audio recording. Only one interviewee did not consent to the use of anonymous quotations.

Ninety-two documents were collected for analysis across the two cases (Appendix 3). Documents included government policy documents, collaborative group policy documents, publications and technical reports, meeting minutes and agendas, draft and final watershed plans, government publications, policy consultation and intervention records, records of interpersonal communications, relevant media articles, emails, websites, and industry policy, technical and

promotional materials. In many cases, documents were used to cross check data from other sources, or to further investigate issues or points raised by interviewees. Many of the documents used were available online through institutional websites. Interviewees and key informants provided the bulk of remaining documents over email or during field visits.

Personal observations were collected and recorded over the course of the study period from July 2013 to December 2014. Observations were collected during all 41 interviews. Observations were also collected during a multi-day meeting in Stony Plains, Alberta in November, 2013, and at a meeting at the Lower Thames Valley Conservation Authority in Chatham, Ontario in October, 2013. Attendance at meetings provided the opportunity to answer questions on the research project from the collaborative group, speak with relevant participants, arrange interviews, and observe dynamics at the collaborative group level.

1.4.3   Data Analysis

QSR NVivo 10 was used to code and analyze all systematic review articles, interviews, observations, documents and transcripts. For both the systematic review and the cross case study analysis, coding was grounded in the conceptual framework. However, analytical methods will be presented separately due to differences inherent in the individual methods.

1.4.3.1   Systematic Review

All 57 articles that met the systematic review criteria were analyzed using the conceptual framework established in Section 1.4.1. The elements of the framework were used as proxies for power in order to ensure completeness since power takes many forms and can easily be discussed in detail without ever using the word "power". For example, many scholars problematize incomplete inclusion of actors at the collaborative table without ever identifying this issue as a "power" concern, let alone a "structural power" concern. Failing to account for issues of power acknowledged in this way would present an incomplete picture of how power is treated in the literature. For the purposes of the systematic review, the conceptual framework was organized into a coding table with clear proxies, organized according to Lukes' three dimensions of power. These codes correspond to the last column of Table 1.1, above.

Qualitative coding is an inherently subjective process (Saldaña 2009). This is especially true when coding for power due to the inherently subjective nature of power interpretation (Lukes 2005). Compounding this, the divisions between Lukes' three dimensions of power can overlap depending on context (Lukes 2005). For example, discussion of the limits of consensus can refer

to issues of instrumental power if some actors are coerced into agreement, structural power if actors agree because they feel it is the best of limited undesirable options, or discursive power if agreement does not reflect actors' best interests but is consistent with dominant hegemonic norms. Careful attention to context and transparent judgment was thus required throughout the coding process. In cases where overlap between Lukes' dimensions was unresolvable, the passages in question were coded for all possible options. As well, attention was given to ensure that coding captured attention to power whether it was viewed as a productive or corrupting influence (e.g. the specific inclusion *or* exclusion of stakeholder groups). Following coding, articles were categorized according to Table 1.4 according to the extent to which they addressed power as defined by direct attention, or through the proxies. This was done in order to facilitate comparison and analysis.

Table 1.4:   Classification Scheme for Articles

Level of Acknowledgement	Description
None	No acknowledgement of power, either implicitly or explicitly
Minimal	Article falls into one of the following categories: • Identification of power as an issue without further discussion or analysis • Attention in some depth to at least one relational or easily visible structural aspect of power (e.g. resource imbalances) • Attention to two or more aspects of relational or easily visible structural power in lesser depth • Incomplete reference to at least one issue of hidden structure or discourse
Partial	Article falls into one of the following categories: • Well thought out acknowledgement of power as an issue but failure to acknowledge issues of power throughout • Attention to at least one issue of hidden structure or discourse but without thorough discussion or analysis
Strong	Demonstrated recognition of relational, structural and discursive power and the impact they have on the collaborative processes under discussion but significant gaps still exist
Very strong	Well thought out discussion of all aspects of power, and recognition of power as an issue

A number of other variables were tracked throughout the coding process in order to facilitate interpretation of results. First, references to power itself were tracked, as well as

attention to power from a theoretically informed perspective. Articles were also coded according to attention to Indigenous, developed or developing country perspectives to determine if articles examining specific contexts would be more or less likely to address and reflect understanding of power. A significant amount of research on collaboration and water has been done through the European Water Framework Directive (WFD), and the California Delta Bay CALFED process. Research addressing these programs was also tracked to determine if depth of study leads to more extensive attention to power.

To increase transparency and limit researcher bias, two reflexive processes were used. First, ten randomly selected articles were given to another researcher and coded using an initial version of Table 1.1. These ten articles, and interpretation of the codes themselves, were compared against the same ten articles as coded by the primary researcher. Differences in interpretation and understanding were resolved, a revised coding table was generated and the entire data set was coded, and in some cases re-coded, using the revised table.

Second, the development and application of the proxies followed an analytically inductive process. Analytic induction reflects a commitment to closely analyzing data and findings that deviate from expected outcomes, understanding potential new relationships and understanding, and modifying original positions and assumptions to reflect improved understanding (Bloor and Wood 2006). This process was actively pursued throughout coding and analysis and several codes were added as it became clear that more precision was needed to differentiate between different expressions of power. For example, separate codes were added to distinguish between "efforts to control discourse", and "prescription of a 'language' of collaboration". This resulted in re-coding of the entire data set with the final version of Table 1.1, presented above.

1.4.3.2   Case Studies

Coding of interview transcripts, documents and observation notes reflected a balance between inductive and deductive approaches to content analysis. While data collection and analysis were initiated using deductive insights drawn from the theory and presented in the conceptual framework (Section 1.4.1), a combination of deductive and analytically inductive open coding allowed new themes to emerge. This was followed by several rounds of axial coding in order to identify emergent themes, relationships and patterns (Strauss and Corbin 1998). As a result, study findings reflect both existing theory, where appropriate, and new concepts and ideas. Triangulation was used to determine validity and subject saturation amongst data sources (Charmaz 2006; Yin 2009).

1.5 Organization of Thesis

The four remaining chapters in this thesis represent three individual manuscripts addressing distinct aspects of the overall study goals, and a concluding chapter to summarize, integrate and present global findings. Chapters Two, Three and Four have each been prepared as journal articles for submission to three different academic journals as joint-authored publications (Brisbois, M.C. and R.C. de Loë). Because they must stand alone as individual papers, some repetition is inevitable, especially with respect to theoretical grounding, empirical context, and methodological approach. At the same time, the papers build upon each other and map out a progression of understanding with respect to power in collaborative water governance processes.

Chapter Two addresses research objectives one and two using the systematic review. The chapter maps out an analytical framework for examining power in literature on collaborative water governance and establishes the existence and nature of the gap in the target literature with respect to power. The manuscript, titled *Power in collaborative approaches to governance for water: A systematic review*, has been accepted for publication in *Society and Natural Resources*. This journal was selected because it attracts a broad readership across policy and governance issues, and because it has previously published works examining power, institutions and natural resource governance and management (e.g., Hardy 2010; Lockwood, *et al.* 2010; Parkins and Mitchell 2005).

Chapters Three and Four jointly address the third and fourth research objectives. The two chapters build upon findings presented in Chapter Two and seek to expand understanding of the roles of the state and industry in collaboration for water governance using power theory. Chapter Three presents a manuscript entitled *States role in collaborative approaches to environmental problem solving: Examining control over outcomes*. It has been prepared for publication in the *Policy Studies Journal* and examines the motivations and actions of the state with respect to collaboration for water governance through a power lens. The manuscript will be submitted for publication following defense of the thesis. The *Policy Studies Journal* was selected because it specifically publishes empirically grounded analyses of public policy research. It has published many works examining collaboration, public policy, and natural resources management (e.g., Eversole 2011; Howlett and Rayner 2006; Koontz 2005).

Chapter Four examines the motivations, positioning and actions of major, corporatized natural resource industry firms with respect to collaboration for water governance. It also uses a power framework to systematically examine the different ways that power moves through and

shapes collaborative systems. The manuscript, entitled *Natural resource industry involvement in collaboration for water governance: Influence on processes and outcomes,* has been prepared for publication in the *Journal of Environmental Planning and Management* and will be submitted following the thesis defense. The *Journal of Environmental Planning and Management* was targeted because of its broad readership and focus on environmental governance and management. The journal regularly publishes articles addressing collaborative approaches to natural resources management from a critical perspective (e.g., Frame, *et al.* 2004; Raik and Wilson 2006).

The final chapter revisits the purpose and objectives of the thesis and summarizes major findings from each of the three manuscripts. These individual findings are then integrated to present global research contributions that represent significant, original and interesting contributions to academic thought. The empirical nature of the case study portion of the research also generated a number of interesting findings for practitioners of collaborative water governance and these are also presented. Finally, study limitations are explored and recommendations for future research are detailed.

All references are presented at the end of the thesis in accordance with University of Waterloo thesis presentation guidelines. Appendices containing supplementary information referred to throughout this introductory chapter are available at the end of the thesis.

Chapter 2

Power in collaborative approaches to governance for water: a systematic review

2.1 Introduction

This paper uses a formal systematic review to examine the extent to which literature on collaborative approaches to water governance reflects understanding and awareness of power-related considerations. Understanding power is central to understanding the political process and its consequences for society (Haugaard and Clegg 2009). Addressing power directly and understanding its implications has the potential to improve the design, study and practice of collaborative approaches to water governance.

Governance is concerned with the ways that decisions are made and actions taken (Holley, *et al.* 2012). Collaboration is a specific approach to governance that broadly involves responsibility and power sharing between state and non-state actors (Carlsson and Berkes 2005). A number of different fields examine collaborative approaches to governance (e.g., planning, public administration, environmental management). While differences in label, language and approach exist, there are several characteristics common to collaborative governance processes that serve to bound its definition. These include broad stakeholder inclusion, face-to-face deliberation, shared learning, a willingness to reconsider assumptions, pooling of resources, construction of long term relationships, and consensus-focused decision-making (Ansell and Gash 2007; Conley and Moote 2003; Holley, *et al.* 2012; Kallis, *et al.* 2009; Margerum 2008). Strongly normative foundations of collaboration are reflected in a common underlying assumption of equity, fairness and balancing of interests (Gray 1985).

Proponents of collaboration argue that, when used appropriately, decisions are reflective of a broad range of knowledge, acceptable to all stakeholders, and are thus less likely to be subject to contestation because all interests have contributed to the offered outcomes (Innes and Booher 2010). However, collaboration proponents also point to uncertainty regarding the ability of collaboration to produce better environmental outcomes than traditional, hierarchical processes (Koontz and Thomas 2006; Newig and Fritsch 2009). The increasingly widespread use of collaborative approaches to water governance across both geographical locations and fields of

study (e.g., Holley, *et al.* 2012; Innes and Booher 2010; Sabatier et al. 2005), makes it particularly important to examine all the factors influencing their effectiveness, especially given the significant investment of time and resources required. Examining collaboration from the perspective of power theory is an effective way to do this.

Many of the variables affecting collaboration can be at least partially explained by theories of power (e.g., Gaventa 2006; Haugaard and Clegg 2009; Lukes 2005). For example, Ansell and Gash (2007:552) highlight the importance of "incentives to participate" as a separate issue from "power/resource imbalances", while concurrently noting that "power and resource imbalances will affect the incentives of groups to participate". Likewise, institutional design is often identified as an important variable in collaboration (Ansell and Gash 2007; Emerson, *et al.* 2012; Imperial 2005), but institutional design principles such as broad inclusion and transparency are fundamentally shaped by the intentions and motivations of those who have the power to frame problems and the information that can be used to address those problems (Hessing, *et al.* 2005).

Theories of power provide a useful way to link together seemingly disparate variables influencing the effectiveness of collaborative processes. In doing so, they reveal broad causal factors and relationships that can provide a more complete understanding of the variables influencing the success of collaborative processes. This approach has been effective in disciplines such as global governance (Clapp and Fuchs 2009; Falkner 2008) and political ecology (Swyngedouw 2006). In particular, power theories make clear that achieving effective collaboration extends far beyond ensuring equitable participation. Broad power relationships and socioeconomic conditions that transcend political and geographic scales must be identified and accounted for (Emerson, *et al.* 2012).

Water presents a useful lens for exploring the impacts of power on collaboration. The governance of water is characterized by interconnected and overlapping political, social and legal structures as sites for the contestation and reproduction of power (Zeitoun and Allan 2008). In addition, a long tradition of using collaborative approaches in the context of water provides a rich pool of scholarship for study.

In the next section, a framework based on power theory developed primarily by Lukes (2005) is presented. This framework was used to inform a formal systematic review (Petticrew and Roberts 2006) that examined the treatment of power across a broad pool of literature addressing collaborative approaches to water governance. The analysis revealed gaps in the extent to which power has been addressed in literature on collaborative approaches to water

governance to date, and helps point the way towards a more effective accounting of power in the future. The paper concludes with implications for theory and practice.

2.2 Power and Collaborative Governance – a conceptual framework

Power is a complex area of study. Controversy over definition and measurement means that many researchers choose not to engage with power despite its fundamental influence on policy-making (Macdonald 2007). Lukes (2005), whose perspective strongly influenced this study, developed a three dimensional view that interprets power, as it is exercised in the political process, as domination. This does not preclude the existence or importance of other views on power. It instead reflects the fact that applying this view to collaboration for water governance is contextually appropriate in "mak[ing] sense of certain aspects of social life" (Haugaard and Clegg 2009:4). As Zeitoun and Allan (2008:9) highlight, use of Lukes' three dimensions is appropriate in situations "where power determines what is known, what is emphasized and who prevails". Lukes' framework is frequently applied to environmental policy-making contexts (e.g., Clare, *et al.* 2013; Fuchs 2007; Macdonald 2007) and relevant insights from these fields have been built into the conceptual framework underlying this paper.

Lukes (2005:37) explains that "A exercises power over B when A affects B in a manner contrary to B's interests". The specific ways that "A exercises power over B" are analyzed through overlapping instrumental, structural and discursive dimensions. These dimensions are characterized below. A conceptual framework is then presented in Table 2.1. The final column of Table 2.1 highlights potential implications of each dimension of power for collaborative processes addressing water governance.

Instrumental power, Lukes' (2005) first dimension, depends on possession of resources that are useful in shaping policy outcomes in competition with others. This type of power is characterized by overt competition for influence and measureable use of resources in that competition. Definite, visible, cause-effect relationships make it relatively easy to study relational power empirically (Fuchs 2007).

Structural dimensions of power are concerned with the ability to shape policy agendas (Lukes 2005). They acknowledge that decisions are influenced by the social structures within which they are embedded. Structural power is embodied in 'mobilization of bias' wherein dominant, hegemonic views that privilege certain groups are reinforced in policy decisions or non-decisions (Schattschnieder 1960). Dominant views shape decisions, even absent the visible use of force, and can constrain the ability of marginalized stakeholders to bring forward issues

Table 2.1: A conceptual framework for the analysis of power in collaborative approaches to water governance

Dimension of Power	Potential Predicted Consequence of Power	Specific Concern for Collaborative Approaches
Instrumental Power	Coercion, co-optation, diversion, manipulation, misinformation (Culley and Angelique 2011; Dahl 1957; Falkner 2008)	a. Coercion, cooptation, diversion, manipulation, misinformation
		b. Ensuring meaningful or equal participation through facilitation
	Capacity imbalances that will affect participation (financial, social, technical, institutional) (Falkner 2008; Fuchs 2007; Levy and Newell 2005a; Macdonald 2007)	c. Imbalance of financial resources
		d. Unequal capacities (technical, social, institutional, etc.) to participate
Structural Power	Control over agenda setting and problem framing (Bachrach and Baratz 1962; Cook, *et al.* 2013; Guber and Bosso 2013; Hessing, *et al.* 2005; Levy and Newell 2005a)	e. Who instigated collaboration
		j. Governments initiating processes to generate legitimacy instead of to influence decisions
		g. Problem definition or framing and/or agenda setting
	Active or implicit inclusion or exclusion of actors, (Freudenburg 2005; Gaventa 1980)	h. Inclusion or exclusion of important actor groups
	Control over knowledge production, inclusion and use, rule setting, self monitoring and reporting (Ascher and Steelman 2013; Falkner 2008; Levy 2012; Macdonald 2007; Torgerson 2005b; Williams 2012)	n. Control over information production and use
		k. Appropriate/inclusive use of knowledge
	Unequal access to, and ability to influence, decision-makers (Brooks and Stritch 1991; Duffy 2013; Falkner 2008; Finger and Svarin 2012; Fuchs 2007; Macdonald 2007)	l. Elite level relationships
		m. Lobbying external to the collaborative process
		o. Backgrounds of representatives (e.g. evidence of revolving doors)
	Active or implicit constraints on action as a results of prevailing socioeconomic and political conditions (Brooks and Stritch 1991; Falkner 2008; Flyvbjerg 1998a; Fuchs 2007; Levy 2012; Levy and Newell 2005a; Macdonald 2007)	Decision making power residing with, or being retained by, the state
		f. Limits of consensus
		p. The structural bias of capitalism of implications thereof
		q. Governments favouring specific actors
Discursive Power	Privilege as a function of discourse, control over discourse (Cook, *et al.* 2013; Culley and Angelique 2011; Falkner 2008; Fuchs 2007; Levy and	t. Who is, or is not, favoured by the dominant discourse
		u. Efforts to control discourse
		v. Prescription of a 'language' of

Dimension of Power	Potential Predicted Consequence of Power	Specific Concern for Collaborative Approaches
	Newell 2005a; Torgerson 2005b)	collaboration
		w. Dominant, hegemonic themes or values related to capitalism influencing collaboration
		x. Groups having to self-censor to participate

and solutions that best reflect their interests (Flyvbjerg 1998a) – even when deliberative processes are used (Freudenburg 2005). In practice, structural power can be either visible or hidden (Lukes 2005).

Discursive power, Lukes' third face of power, represents the ability to manipulate the wants and desires of others:

> ...A may exercise power over B by getting him to do what he does not want to do, but he also exercises power over him by influencing, shaping or determining his very wants. … that is, to secure their compliance by controlling their thoughts and desires... (Lukes 2005:27)

Discursive power is far reaching in that public education, lobbying, mass media, and control over knowledge production and technology are used to align societal values with the goals of those with power over these institutions (Lukes 2005). While discursive power can be effectively used as a form of resistance (Gaventa 2006), those most successful in exercising relational and structural forms of power are often more successful in exercising discursive power because of control over resources, and an ability to define agendas and participants (Culley and Angelique 2011). Because discursive power is subtle, it is difficult to study empirically (Falkner 2008; Fuchs 2007).

2.3 Methods

A systematic review was used to explore the extent to which literature addressing collaborative approaches to water governance accounts for issues of power. Systematic reviews are structured literature reviews that are useful in reviewing large bodies of material, synthesizing major findings and identifying knowledge gaps. In this paper, a protocol suited to social science inquiry is used (Petticrew and Roberts 2006).

Restrictions on materials and parameters searched were used to limit the range of articles returned to a reasonable number. This reflects a compromise between an ideally "sensitive" study, and a practically feasible "specific" study (Petticrew and Roberts 2006). To summarize inclusion criteria:

- The search was restricted to articles published in English.

- The study focused on journal articles rather than books, book chapters, reports and other kinds of literature because core research on collaboration for environmental governance is usually published in article format. Of the books that are published on the topic, many authors also choose to present their most salient findings in article form (e.g., Gunningham 2009; Holley, *et al.* 2012).

- Two journal indices (Scopus and Web of Knowledge) were used to build the database of articles. These two indices provided the broadest and most complete coverage of literature published on collaboration, environmental problem solving and governance.

- The search was restricted to titles, abstracts and keywords. These fields were searched for a range of terms that broadly encompass water, governance and collaboration (see Box 2.1).

- Searches were limited to articles published in the fields of arts, social sciences, business and multi-disciplinary fields – excluding only items published in purely natural science or engineering periodicals.

- Finally, dates were restricted to articles published between 2009 and January, 2013. This captured recent literature that could potentially have incorporated advances in theory and practice from the power literature.

Box 2.1:   **Database search terms**

Keywords, Titles and Abstracts:
collaborat*   AND
governance OR manag* OR plann*   AND
water* OR catchment* OR basin* OR river* OR lake* OR stream* OR groundwater OR "ground water" OR flood* OR irriga* OR drainage OR hydro-electric OR hydro-power OR hydropower OR hydroelectric OR hydrolog* OR hydro-log*

The Scopus search returned 368 articles. These were manually examined to limit articles to those focused on collaborative approaches to water governance. This included governance

processes addressing water issues and either self-identifying as collaboration, or characterized by broad stakeholder inclusion, face to face interaction, facilitated deliberation and negotiation, knowledge and resource sharing, open, equitable communication, and a desire for consensus or near consensus (or a majority of these factors). Application of these criteria narrowed the study pool from the Scopus scan to 51 relevant articles. The ISI Web of Knowledge scan returned 31 articles of which 19 met the criteria. Accounting for overlap with the Scopus scan, the database for the systematic review contained 57 articles. Broken down by year, there were 20 articles in 2009, 13 articles in 2010, 10 articles in 2011, 10 articles in 2012, and one article as of January, 2013, when the search was completed. Thirty-two journals were represented with articles addressing mainly watershed or regional scales in North America, Europe, Australia and New Zealand. Representation was strongest in *Environmental Science and Policy* (n=7), *Journal of Environmental Planning and Management* (n=6), and *Society and Natural Resources* (n=5).

The full content of each article in the database was manually analyzed in order to answer the following research question: *how, and to what extent, does the literature on collaborative approaches to water governance address issues of power as defined by the conceptual framework?* The conceptual framework (Table 2.1) identified power proxies that were used to initially code each article; use of this framework satisfied the requirement for coding based on a rigorous analysis of multiple relevant studies (Petticrew and Roberts 2006). Proxies were necessary in order to ensure relevance and completeness of the review because power and power theory are rarely referred to directly in literature on collaborative approaches to water governance. For example, it was common for authors to mention the extent to which specific actors were included or excluded, but to not recognize that this could reflect power, let alone structural power (Table 2.1). At the same time, authors of collaborative water governance articles did not have to specifically reference power in order to demonstrate a clear understanding of the ways that power affects collaborative processes. The coding scheme also allowed for different perspectives on power to be captured, for example, power as productive versus power as corrupting. Hence, the proxies in Table 2.1 allowed for the many ways in which power could be implicitly or explicitly addressed to be captured. Importantly, while the coding process began from a deductive perspective (based on insights from power literature as synthesized in Table 2.1), emergent themes revealed during the course of coding were also incorporated. Following initial coding based on the initial deductively developed framework, all articles were re-coded a second time to account for inductively refined codes. The refined codes are presented in the next section.

QSR NVivo10 was used to organize and conduct coding. There was frequently overlap between categories (e.g., limits of consensus can refer to issues of either structure or discourse). Therefore, articles were carefully read to determine context and the depth of attention to power. In cases where overlap between categories was unresolvable, the passages in question were coded for both dimensions of power. Coding in all cases required informed judgment in order to ensure that attention to power was noted where present, even in the absence of direct reference to power or power theory.

The proxy codes were able to capture the existence of attention to specific issues but were unable to address the depth of attention given. For example, noting that collaboration was instigated and framed by a local government agency (codes "e" and "g" in Table 2.1) is quite different from noting these issues and then acknowledging their interrelationships with inclusion, development of policy options, and information used. For this reason, coded articles were analyzed for depth of attention and grouped into five categories according to the extent to which they acknowledged power concerns: None, Minimal, Partial, Strong, and Very Strong. The basis for placing each article in these categories is incorporated in the table that presents the results (below).

Other parameters with potential explanatory value were also tracked. This was done in order to determine if specific variables accounted for attention to power. References to power in general or generic terms, and to power from a theoretically informed perspective, were tracked. Articles were also coded according to developed or developing country contexts, and for attention to Indigenous contexts. Tracking attention to Indigenous concerns allowed examination of the extent to which power is addressed in contexts where significant power imbalances have historically been acknowledged. Considerable research has been undertaken addressing collaborative water governance in the European Union under the Water Framework Directive (WFD) and in the California Delta Bay region under CALFED. Articles addressing these initiatives were tracked to determine if focused, situated study has led to a broader examination of power.

Coding of articles, even using a well-specified coding structure such as the one presented above, is inherently subjective. To limit subjectivity, another researcher was asked to analyze two randomly selected articles from the pool of 57 using preliminary deductive codes from Table 2.1. Differences in interpretation of codes were resolved through discussion and negotiation, resulting in some adjustment. This person then applied the revised codes to 10 randomly selected articles. The results were compared to the coding of these same articles by the first author. While there

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was some minor variation with respect to the exact text coded, final article classification by both researchers was consistent (e.g., None, Minimal, Partial, Strong, and Very Strong).

2.4 Results

Tables 2.2 and 2.3 present the results of the systematic review. Power was not addressed in 32% of articles, addressed minimally in 39%, partially addressed in 19%, strongly addressed in 4% and very strongly addressed in 7% (Table 2.3). While 44% of articles mentioned "power" specifically, it was relatively common for authors to note power as an issue without engaging in any (4%), or much (19%), deeper analysis. For example, in their study of mega-region governance focused on water planning in California, Innes, *et al*. (2011:59) make reference to the fact that "[if] they are networked within themselves, information, social capital, and power can flow through the system rapidly". Power is directly referenced, but coding for proxies revealed that attention to power largely addressed two issues: government retention of power and inclusion. Acknowledging power as an issue does not necessarily account for the many impacts of power on collaborative approaches to water governance and its outcomes.

Even among articles rated as "strongly" or "very strongly" acknowledging power (Table 2.3), it was uncommon for the word "power" to be used. This reinforces the importance of analyzing power through its proxy expressions rather than simply by searching documents for direct references to power. For example, Gambert (2010:477) "very strongly" addresses all dimensions of power in his study of local government involvement in WFD-related initiatives in France and England, but only once uses the term "power".

Only three of the articles analyzed explicitly addressed power using insights derived from power theory (e.g., Gaventa 2006; Haugaard and Clegg 2009; Lukes 2005). Two of these articles were classified as very strongly addressing power (Pares 2011; Shilling, *et al.* 2009), and another made reference to the fact that attention to power from a more theoretical perspective is a gap to be addressed (Taylor and de Loë 2012).

Fifty two articles addressed developed country contexts, three addressed developing country contexts and one article addressed both. Indigenous contexts were addressed in four articles. Articles addressing both Indigenous and developing country perspectives all had at least

Table 2.2: Proxy Power Codes and Number of Articles Containing Codes (n=57 articles)

Category and (%) of Articles	Specific Codes for Each Category	Number and (%) of Articles
Relational Power (47%)	a. Coercion, cooptation, diversion, manipulation, misinformation	10(18%)
	b. Ensuring meaningful or equal participation through facilitation	9(6%)
	c. Imbalance of financial resources	10(18%)
	d. Unequal capacities (technical, social, institutional, etc.) to participate	20(35%)
Structural Power (70%)	e. Who instigated collaboration	11(19%)
	f. Limits of consensus	8(14%)
	g. Problem definition or framing and/or agenda setting	16(28%)
	h. Inclusion or exclusion of important actor groups	28(49%)
	i. Decision making power residing with, or being retained by, the state	19(33%)
	j. Governments initiating tokenistic processes that exist to generate legitimacy instead of to influence decisions	8(14%)
	k. Appropriate/inclusive use of knowledge	18(32%)
	l. Elite level relationships	12(21%)
	m. Lobbying external to the collaborative process	2(4%)
	n. Control over information production and use	1(2%)
	o. Backgrounds of representatives (e.g. evidence of revolving doors)	3(5%)
	p. The structural bias of capitalism of implications thereof	12(21%)
	q. Governments favouring business interests	5(9%)
	r. Governments favouring non-business interests	7(12%)
	s. Collaboration being influenced by external political contexts	18(32%)
Discursive Power (19%)	t. Who is, or is not, favoured by the dominant discourse	4(7%)
	u. Efforts to control discourse	1(2%)
	v. Prescription of a 'language' of collaboration	4(7%)
	w. Dominant, hegemonic themes or values related to capitalism influencing collaboration	8(14%)
	x. Groups having to self-censor to participate	3(5%)

Table 2.3: Classification Scheme for "Depth of Attention to Power" and Number of Articles in Each Category (n=57 articles)

Depth of Attention and Number and (%) Recognition Overall	Description – Article falls into one of the following categories	Number and (%) of Articles
None 18(32%)	No acknowledgement of power	18(32%)
Minimal 22(39%)	Identification of power as an issue without further discussion or analysis	2 (4%)
	Attention in some depth to at least one relational or easily visible structural aspect of power (e.g. resource imbalances) (codes "a" through "k")	5 (9%)
	Attention to two or more aspects of relational or easily visible structural power in lesser depth (codes "a" through "k")	7 (12%)
	Incomplete reference to at least one issue of hidden structure or discourse (codes "l" through "x")	8 (14%)
Partial 11(19%)	Well thought out acknowledgement of power as an issue but incomplete attention throughout	3 (5%)
	Attention to at least one issue of hidden structure or discourse but without thorough discussion or analysis	8 (14%)
Strong 2(4%)	Demonstrated recognition of relational, structural and discursive power, their relationship and the impact they have on the collaborative processes under discussion – significant gaps still exist	2(4%)
Very strong 4(7%)	Well thought out discussion of all aspects of power, and recognition of power as an issue	4(7%)

'minimal' attention to power and made up a proportionally large number of those articles "strongly" or "very strongly" addressing power (40%) given that they represented only 12% of articles. This supports the suggestion that power issues may be addressed more commonly in these settings than in others where collaborative approaches for addressing water problems are used.

Concerns relating to instrumental power appeared in 47% of articles, most often in the context of unequal capacities to participate (35%) (Table 2.2). The most commonly identified type of power overall was structural power (70%) and the majority of commonly applied codes were structural. These included "h. inclusion or exclusion of important stakeholder groups" (49%), "i. decision making power residing with, or being retained by, the state" (33%), "k.

appropriate/inclusive use of knowledge" (32%), and "s. collaboration being influenced by external political contexts" (32%) (Table 2.2).

Because structural power is a very broad category, subcategories were identified as "easily visible structural power" (codes "e" through "k", 68%) (e.g., who instigated collaboration), "hidden structural power" (codes "l" through "r", 44%) (e.g., elite level relationships), and "direct reference to external political influence" (code "s", 32%). External political drivers were distinguished from other forms of structural power because they can either be hidden or visible depending on context, and because of the specific ways they influence collaboration. This category would often appear in articles that exhibited no other attention to power. For example, despite not specifically addressing power in his analysis of agricultural water use in the context of CALFED, Fuller (2009:672) states the following in the final paragraph:

> Like any element of a long and difficult policy process, the agreements made in consensus building processes are not the final step. Much can change in implementation, as it did in CALFED, especially when an administration changes. Despite the strong stakeholder support for the Program, the incoming Bush administration and Congress never provided the financial support promised by their Clinton-era predecessors.

This statement clearly acknowledges the influence of factors operating external to the collaborative process at the *implementation* phase. However, the analysis does not consider these kinds of power-related issues in the context of the collaborative process itself.

With respect to hidden structural power, the most frequently identified issues were "l. elite level relationships" (21%), and "p. the structural bias of capitalism of implications thereof" (21%), (Table 2.2). Recognizing that the implications of capitalism can be broadly defined depending on perspective, this code was restricted to instances that addressed situations tangibly shaped by economic factors. For example,

> In the context of water management, water supply infrastructure organizations, with their links to economic development... are traditionally viewed as the actors with the largest stake in the status quo and the most power to influence bargaining over the gains from cooperation (Lubell and Lippert 2011:78)

Discursive power was the least frequently recognized (19%) and, as suggested earlier, presented coding challenges. For example, passages coded for structural bias related to

capitalism, discussed above, were often also coded for the most commonly identified discursive theme, "w. the discussion of dominant, hegemonic themes or values related to capitalism" (14%). This reflects the many ways that dominant economic structures can shape language, ideals, values and resultant tangible actions. To illustrate, the following passage was coded for both structural and discursive issues:

> solutions such as the [Environmental Water Account], which appear to collaboration scholars as innovative and consensual…are seen instead as an expansion and legitimization of the dominant market logic and language to the environmental realm, perpetuating past injustices (Kallis, *et al.* 2009:639).

Discursive power was also more likely to be addressed in articles focused on either the EU WFD or CALFED. Of articles returned, 12 addressed either the WFD or CALFED. Of the four articles that very strongly addressed power, two addressed the WFD and one addressed CALFED. The fact that these settings have received sustained attention from collaboration scholars may account for this pattern – but this finding is not conclusive.

2.5 Discussion

The analysis revealed that many authors of studies relating to collaborative approaches to water governance are addressing power-related concerns in their work, and are aware of the importance of power for these processes. However, gaps remain related to hidden structural and discursive power. Furthermore, many authors are not explicitly identifying the relationships between different types of power, as evidenced by the fact that 71% of articles addressed power below a "partial" level. In some cases this appears to have been an oversight. For example, in their synthesis of decades of work on collaboration, Innes and Booher (2010:108-112) dedicate several pages to the implications of power for collaborative processes. The fact that this understanding was not fully captured in the article included in this review (Innes, *et al.* 2011) highlights the value of a more structured, explicit approach to the examination of power in collaboration for environmental governance. At the same time, findings such as this reveal opportunities for strengthening understanding of the role and influence of power in collaborative approaches to water governance. These are discussed below.

2.5.1 Instrumental Power

Issues related to instrumental power were addressed relatively infrequently considering that they tend to be quite obvious. One possible explanation is that strategies for dealing with

instrumental power have been well developed, are easily implemented, and are now commonly reflected in process design. For example, effective facilitation and equitable participation are now common process characteristics adopted in order to address issues of coercion, co-optation, manipulation and misinformation (Ansell and Gash 2007; Parkins and Mitchell 2005).

2.5.2 Structural Power

Given that power is difficult to address and often hidden, it is unsurprising that the literature analyzed in this review focused mainly on visible expressions of power within collaborative processes. The prevalence of attention to visible structural power is likely due to the fact that many of the criteria that are emphasized as fundamental to collaborative approaches to environmental problem solving are issues of structure that are challenging to address in terms of implementation (e.g., the inclusion or exclusion of stakeholders). At the same time, the results indicate that, despite concern for these kinds of issues, very few authors are either implicitly or explicitly making the link between expressions of power and the broader ways that power shapes policy outcomes. For example, while a number of authors recognize the importance of ensuring inclusive, equitable representation (e.g., Borisova, *et al.* 2012; Marshall, *et al.* 2010; Watson, *et al.* 2009), addressing barriers to participation in collaborative processes also requires addressing deeper issues that broadly prevent marginalized parties from having a real voice in society. To illustrate, Shilling et al (2009:698), in reference to CALFED, note that "there have been various mechanisms for exclusion and denying access, including language, arbitrary legitimation of knowledge, cultural practices of interaction among those in power, and class". These are issues that transcend the problem arena and are perpetuated and reinforced at multiple scales.

The disconnect between collaborative processes and broader power patterns invokes issues of scale because many of the problems expressed at the process level do not necessarily have corresponding solutions at that level but are rather reflective of broader societal power imbalances. Identifying strategies to address the issues revealed by a power-based analysis thus demands that collaborative process researchers, designers and implementers examine scales beyond the immediate problem arena (Clare, *et al.* 2013; Cook, *et al.* 2013).

The relative prevalence of articles noting the influence of external political factors indicates that many scholars are aware that the success of collaboration is at least partly determined by conditions external to the actual collaborative process. To some extent, the need to consider broader scales also explains why literature addressing large regional initiatives such as CALFED and WFD-initiated processes addressed power more effectively. Many lobbying and influence

efforts take place at these regional or national scales (Gambert 2010) and are thus more likely to be captured within analyses of these collaborative processes. As well, both CALFED and the WFD have been extensively studied and, as many of the possible barriers to collaboration have been explored and yet failed to result in markedly effective processes, it has become necessary to consider the broader reasons why such barriers continue to persist (e.g., Gambert 2010; Kallis, *et al.* 2009; Pares 2011; Shilling, *et al.* 2009).

2.5.3   Discursive Power

Comparatively little attention to discursive power is not surprising since identifying this type of power involves moving beyond easily observable expressions and digging deeply into how, and by whom, influence is exerted (Lukes 2005). The most common discursive issue identified was the influence of dominant, hegemonic themes. Pares (2011:462) provided one example of the way this theme arose:

> even if several civil society organizations take part in these forms of governance, there is a tendency to lose democratic control in these networks, while the power and influence of social and political-economic elites grow in a strategy to re-centre the regulatory force of the market as the main organizer of social relations.

Of concern is that collaboration is espoused precisely because of its purported ability to equitably represent the interests, knowledge and contributions of all stakeholders. Unaddressed issues of power can prevent this from happening, and thus hamper our understanding of why collaboration may not be returning the improved social and ecosystem conditions that it is intended to achieve. This may explain heightened awareness of power in literature addressing developing country and Indigenous perspectives. These contexts have frequently been examined through the lens of power and scholars working in these fields commonly are already attuned to power issues and are more comfortable using power theory (e.g., Takeda and Ropke 2010).

2.5.4   Strategies for a better accounting for power

Because of the pervasive nature of power, an effective accounting will require a significant shift in how collaborative process analysis and design is approached. When power is considered, the analytical frame inevitably expands to include larger socioeconomic and political trends over multiple spatial, institutional and temporal scales (Clare, *et al.* 2013; Cook, *et al.* 2013). This introduces a number of complicating variables that must be accounted for in characterizing and

assessing collaborative cases. Adapting to this increased complexity may best be achieved using a graduated approach.

Openly acknowledging that power-related issues exist is a first step toward establishing if and how they matter in terms of collaborative governance processes and outcomes. Considering power in the context of collaboration allows for a more realistic view of what collaborative processes can accomplish under existing socioeconomic and political conditions, and how best to approach collaboration in contested settings. For example, applying a power-based analysis may reveal that an industry participant has existing structural privilege and elite-level connections that permit this actor to effectively exercise veto power at the policy approval or implementation stage. In such a situation, engaging in collaboration for the purposes of making or informing policy will likely be ineffective (Clare, *et al.* 2013).

Using a power lens also has the potential to identify ways that power relationships can be shifted through collaboration – a potential outcome highlighted by others (e.g., Ansell and Gash 2007; Innes and Booher 2010). For example, Pares (2011) noted that some groups chose not to participate in collaborative processes under the European Water Framework Directive because doing so would require accepting a contested world-view and language. In such cases, designing processes to include collaborative agenda setting and problem definition may help include diverse actors, knowledge and perspectives, and could support the transformative potential of collaboration.

Ultimately, the results of the review reveal that there is no standard approach for addressing power in collaborative approaches to governance for water. The literature will be strengthened by the development of frameworks that allow for easier communication through common definitions and measurement metrics. Frameworks that provide tangible potential expressions of power, such as those presented in Table 2.2, also make the complicated concept of power more accessible and usable (Fuchs 2007). This is especially important for researchers who are not necessarily, nor strive to be, power scholars. Empirical research designs will better acknowledge and address power-related concerns if the issues highlighted in Table 2.2, specifically with respect to structural and discursive power, are incorporated into case descriptions. This will make it easier to integrate power expressed in broader socioeconomic contexts into analyses. Existing literature on the application of theories of power to natural resource contexts can also provide further insight into the application of power theory to collaboration addressing water and environmental governance (e.g., Caine and Krogman 2010; Raik, *et al.* 2008).

Explicit steps for more effectively accounting for power in the study and design of collaborative approaches to water governance include applying, or constructing, a range of power-related queries (e.g., Table 2.2) that will help reveal significant power issues in cases under examination. Many power issues reflect conditions external to the collaborative process; these issues can be identified and addressed, although not necessarily resolved, at the collaborative group scale. Specific attention should be paid to the following concerns:

- *Determining how, and by whom, collaborative agendas are set*. This will help reveal if actors are excluded, whether control is being exerted to shape agendas in favour of specific interests, and whether decisions on important issues are being restricted.

- *Understanding the financial, technical and institutional capacities of actors and how they are utilized both within, and external to, collaborative processes*. This includes factors such as lobbying, elite political access, the ability to devote time and money to collaboration, and the ability to use public media as a tool.

- *Revealing the knowledge, information and perspectives that are used and valued*. Scholars can use this information to determine if these inputs and framings sufficiently reflect the interests of all collaborative actors.

- *Determining the prevailing orientation of state bodies with final decision-making power, and dominant societal values in the context in question*. For example, collaboration in regions governed by ideologically neoliberal governments are likely to favour business interests in ways that may not adequately give voice to environmental or social interests.

The results of such queries can then be used to direct attention toward potentially significant power issues for the context in question. In the presence of such issues, such as a collaborative context characterized by the presence of a single powerful sector or interest, analysis should clearly acknowledge, and account for the impacts of, the presence of these power issues.

2.6 Conclusion

Collaboration is increasingly being used to address contemporary environmental problems. Considering power, and the different ways it is expressed, is a useful way to make visible and link together many of the factors shaping collaborative processes and outcomes. The systematic

review reported in this paper was based on an explicit power framework grounded in a mainstream power theory perspective. It revealed that recent research on collaborative approaches to water governance is accounting for many visible consequences of power. Nonetheless, there is considerable room for increased understanding of hidden forms of structural and discursive power, and the interrelated ways these forms of power affect collaborative systems. Future research in this area will be useful.

Examining power through the framework used here expands the scale of analysis from the collaborative group itself to include broader, socioeconomic and hegemonic factors that shape collaborative processes and outcomes. This addresses a challenge identified in the literature related to the need to identify and account for such factors across political and geographic scales (Emerson, *et al.* 2012). Meeting this challenge is important because the success or failure of collaborative approaches to environmental problem solving is closely linked to a host of power-related considerations. Explicit attention to power recognizes that collaborative processes do not exist in isolation. Instead, they are nested within broader social, political and economic contexts that shape processes and outcomes in ways that are often pervasive and hidden (Lubell and Lippert 2011; Memon and Kirk 2012). Theorizing, designing and conducting collaboration in the absence of attention to power risks incomplete understanding of how and why processes progress and produce outcomes, successful or otherwise. This paper explored power in collaborative approaches to water governance. However, the issues explored here are equally relevant in other settings where diverse actors come together to address shared environmental problems.

Chapter 3

State roles in collaborative approaches to problem solving for water: assessing the power of the state

3.1 Introduction

Many of the water problems currently facing society are defined by complex causes, limited state resources, and seemingly intractable actor positions (Clancy 2014a; Sabatier et al. 2005). These situations are increasingly being addressed using collaborative approaches to environmental problem solving (Holley, *et al.* 2012; Koontz and Newig 2014). Collaborative approaches make use of deliberation and debate amongst an inclusive set of autonomous state, private and civil interests. They are designed around face-to-face interaction in order to share knowledge, foster relationships and emergent understanding of problems, and combine resources in the pursuit of better, more enforceable solutions (Ansell and Gash 2007; Holley, *et al.* 2012; Margerum and Robinson 2015). Consensus is usually sought, if not always achieved (Ansell and Gash 2007), and there is an expectation that collaborators will reconsider initial assumptions and attitudes (Fish, *et al.* 2010; Kallis, *et al.* 2009). The collaborative approach is grounded, to some degree, on the assumption that all actors will be able to help shape ultimate outcomes in a non-trivial way (Innes and Booher 2010; Tan, *et al.* 2012). Collaboration provides an opportunity to address problems that cannot be tackled by any one actor on their own (Gray 1989). However, its promise is balanced by limited evidence that collaboration is able produce the better, more implementable environmental solutions that have justified its use to date (Gunningham 2009; Koontz and Thomas 2006; Newig and Fritsch 2009).

This study examines the actions and motivations of the state, itself a fragmented and divided actor (Cerny 2010), relative to collaborative approaches to water governance in order to assess the potential of such approaches to generate better social and environmental outcomes. Despite trends toward more inclusive governance, states persist as the dominant decision-making authority with respect to environmental policy (Fish, *et al.* 2010; Hardy 2010). State regulation and enforcement remain the largest motivators of meaningful change for private and civil actors (Holley et al 2012). Governments often play important roles in the initiation of collaboration, provision of institutional and financial support, and implementation of developed policies (Gunningham 2009; Koontz, *et al.* 2004). When collaboration addresses issues of public policy,

states also face the challenge of integrating collaborative processes and outcomes into existing hierarchical governing systems (Emerson, *et al.* 2012).

A number of scholars have specifically examined the roles of the state relative to collaborative approaches to environmental governance (e.g., Koontz et al 2014; Hardy 2010; Abers and Keck 2009). This study builds upon existing work by using an analytical approach rooted in theory on power to provide insight into the factors that shape the actions and motivations of the state with respect to collaborative problem solving. In doing so, it responds to two distinct calls in the literature. The first is for deeper investigation into the complexities of state structures, actions and motivations relative to collaborative approaches to environmental governance (e.g., Hardy 2010; Moellenkamp, *et al.* 2010). An interrelated second call addresses the fact that, despite being recognized as central to discussions of water conflict (Clancy 2014a), power represents an understudied area with respect to collaboration for water governance (Chapter Two; Taylor and de Loë 2012). While frequently acknowledged as important (e.g., Ansell and Gash 2007; Innes and Booher 2010), power is rarely explored from a theoretical perspective in the context of collaborative environmental governance (exceptions include Parkins 2010; Takeda and Ropke 2010), This is likely due to its complicated and contested nature (as per Fuchs 2007). However, using a power lens it is possible to reveal causal factors and relationships that often remain hidden (Lukes 2005). A power approach also provides insight into another emerging area of exploration in literature on collaborative environmental problem solving: that collaborative processes and outcomes are a product of the broader socioeconomic ideas and institutional settings within which they are nested (Emerson, *et al.* 2012; Pares 2011).

Using water as a focus for studying power in collaborative approaches is productive because water policy decisions take place at multiple sites and scales and are subject to often contested overlapping legal, institutional and social structures (Zeitoun and Allan 2008). This study facilitates examination of these sites and scales through the use of a policy cycle model (Howlett and Ramesh 1995). Power analysis is particularly useful in revealing the visible and invisible forces that shape political action (Lukes 2005), and examining power through a policy cycle model structures analysis at discrete policy stages from problem definition through to implementation and evaluation. Relative to the focus on water, there has also been significant research into collaborative approaches in the context of water governance and management and this provides a strong theoretical foundation upon which to build (e.g., Fish, *et al.* 2010; Innes and Booher 2010; Sabatier et al. 2005).

The next section examines collaboration as a specific form of participatory decision-making and then lays out a conceptual framework for examining the roles of the state relative to collaboration grounded in theory on policy-making, power, and business involvement in environmental policy making. This framework is then applied to two Canadian comparative empirical cases defined by exacerbated power imbalances chosen to clearly illustrate the explanatory value of a power theory-based approach. For the purposes of this study, imbalanced conditions are represented by situations where major, corporate natural resource industry firms are present as actors in regional or watershed-scale collaborative processes. Results are organized around the ways that power is present and expressed throughout the collaborative policy making cycle, and then discussed in the context of current use and practice of collaboration for environmental policy-making. In general, the governments examined in the study exerted power from agenda setting through to implementation in response to socioeconomic, political and cultural stimuli at multiple scales in ways that reproduced existing power structures. This challenges the potential of collaboration to achieve desired social and environmental outcomes. The paper concludes with final thoughts on state roles in collaborative processes and recommendations for future study.

3.2   Collaboration, Policy-making and Power

One of the major challenges in studying collaborative approaches is the difficulty in differentiating "collaboration" from other participatory approaches (Innes and Booher 2010). There is an increasing amount of conceptual overlap amongst different fields (e.g., adaptive co-management, community based natural resource management, stakeholder participation) (Plummer and FitzGibbon 2004). Acknowledging these diverse roots, the characteristics outlined in the introduction – broad inclusion, face-to-face deliberation, knowledge and resource sharing, equitable participation, and consensus-focus – are common characteristics in literature on collaborative environmental problem solving. All of these characteristics are shaped by power as exercised throughout the policy cycle, and the following theory structures analysis of state roles in collaboration through a power lens.

A neopluralist perspective is used to describe the nature and interaction of the state relative to other actors in collaborative processes. Neopluralism interprets policy-making as a function of competition and co-operation amongst nominally self-interested actors with varying priorities, resources, capacities, and values. Policy participants represent "a range of individual and collective (group) actors below, outside, surrounding, and populating the state" (Cerny 2010:3-4).

The state occupies a central role with respect to making policy and mediating interests, while simultaneously acting as an interest group with its own fragmented factions, goals, biases and motivations (Cerny 2010; McFarland 2004).

Neopluralism recognizes that economic actors are able to operate from a privileged position with respect to environmental policy making (Brooks and Stritch 1991; McFarland 2004). This privileged position, while not absolute (Macdonald 2007), is a function of interdependence between business and government (Brooks and Stritch 1991; Hessing, *et al.* 2005). While democratic governments have historically depended on business for economic benefits such as jobs and growth, they are increasingly looking to the private sector for information production, environmental monitoring, and mobilization of finances (Falkner 2008; Hessing, *et al.* 2005; Newell 2005). The fundamental role played by business in capitalist economies means that business is usually viewed as a legitimate actor insofar as firms generally follow accepted rules of behavior, and the broader public consent to the role that business is playing (Beetham 2013).

Regulatory relationships between government and industry enable elite-level access to decision-makers and facilitate lobbying (Ribot and Peluso 2003). Significant financial resources facilitate lobbying, funding of scientific or policy research, and threats of legal action (Falkner 2008). Influential firms can forestall or subvert government regulation through private rule setting, certification schemes or corporate social responsibility initiatives (Auld and Gulbrandsen 2013; Clapp and Meckling 2013). For global economic interests, including the kinds of multi-national natural resource industry firms featured in this study, this privilege includes the ability to operate across borders and exert substantial influence on governments, private, and civil actors at scales from the local to the global (Cerny 2010). For modern democratic societies, capitalist socioeconomic structures and neoliberal trends toward decentralization shape the degree to which governments are willing and able to engage in restrictive environmental policy making (Brooks and Stritch 1991; Hessing, *et al.* 2005).

Neopluralism describes the relationship between actors influencing policy making, and the institutions and ideas that define the capitalist socioeconomic structure within which decision-making takes places. However, how the state undertakes policy-making itself can be modeled in a number of different ways (e.g., public choice, institutional-ideological models). Howlett and Ramesh's (1995) five stage policy cycle model, presented in Figure 3.1, provides a relatively simple framework for organizing analysis of the actions and motivations of the state relative to collaboration through a power lens. This framework is useful in studying highly complex policy contexts by disaggregating the policy process into discrete analytical stages (Hessing, *et al.*

2005). While the model has been criticized for requiring a relatively transparent decision-making arena for analysis, the specific focus on both visible and hidden power in this study mitigates this limitation. Effective use of policy cycles must also explicitly account for the ideas and institutions that define the policy context, in this case characterized by neopluralism and business privilege, in order to provide a complete analysis of empirical policy making. The use of this model by other studies addressing business and environmental policy making provides a basis for the generation of both insights and comparisons (e.g., Hessing, *et al.* 2005; Macdonald 2007).

Figure 3.1:   The policy cycle model (after Howlett and Ramesh 1995)
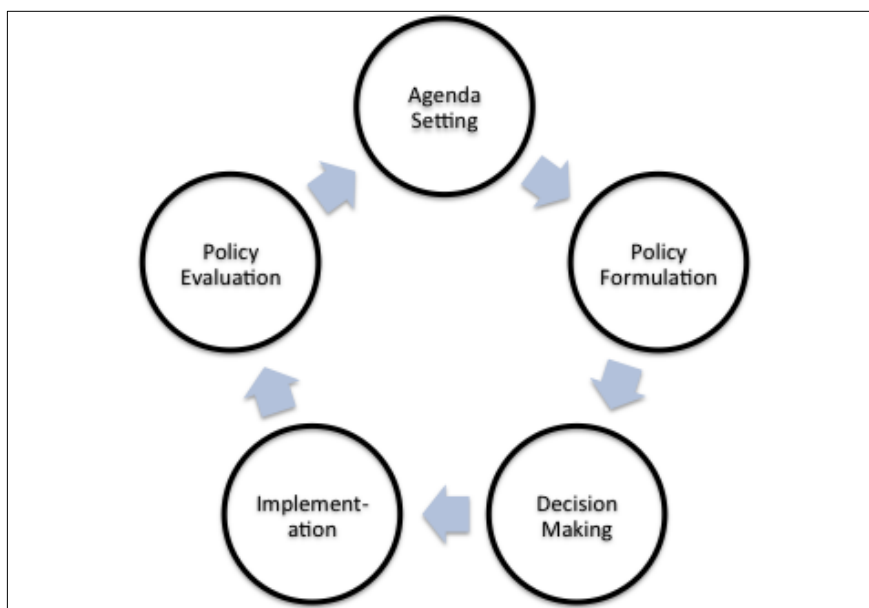
In the first stage of the policy cycle model, the problem is defined and the agenda is set. In the process, the range of solutions that will be available to address the now defined problem is constrained (Hessing, *et al.* 2005). In the second stage, potential solutions, or policy options, are fleshed out. A particular course of action, or inaction, is selected from the range of options in the third stage. Policy implementation takes place fourth, followed by an evaluation phase. The model represents an idealized, rational cycle. However, in application, it is iterative and often short-circuited or interrupted by the irrational actions of policy actors (Howlett and Ramesh 1995). As a model of political process, it is also fundamentally defined by power (as per Dahl 1957; Lukes 2005).

Studying power in political processes involves adopting perspectives from a diverse and often contested literature. This study follows Haugaard and Clegg (2009) in viewing different

perspectives on power not as contradictory, but as different ways of viewing social phenomena, dependent upon the context under study. Lukes' (2005) three dimensions of power are often used to study environmental policy making processes (e.g., Falkner 2008; Fuchs 2007) because they are particularly effective at describing political contexts where power decides "what is known, what is emphasized and who prevails" (Zeitoun and Allan 2008:9).

Lukes (2005) provides a domination-based description of power as the ability of one actor to prevail over others in achieving desired goals in contested political settings. Power is interpreted as a fluid, multi-dimensional relationships between actors or groups, not a quantity that can be possessed (Baldwin 1989; Lukes 2005). The framework used by Lukes (2005) describes power through conceptually overlapping instrumental, structural and discursive dimensions that reveal different ways that power can be interpreted, exerted, and addressed.

The first dimension, instrumental power, reveals influence by examining the overt and measureable use of force, or of financial, technical and social resources, in competition with others (Dahl 1957; Lukes 2005). Instrumental power is relatively easy to study in the context of collaboration because it manifests as clearly observable expressions of direct influence.

Structural power, the second dimension, reflects the socioeconomic and political context within which decisions and actions are embedded. It is primarily concerned with how political agendas are set (Lukes 2005). Emphasis is placed on those actions and decisions that constrain or remove certain issues from public consideration, usually to the benefit of dominant, hegemonic interests (Bachrach and Baratz 1962). Even absent visible action by "powerful" actors, dominant structural conditions can privilege these interests, for example, when governments independently make business-friendly decisions in order to promote jobs and economic growth. Structural perceptions of power also highlight the absence, or effective absence, of potentially important actors because of a lack of capacity to effectively participate, or a lack of trust in the ability of a process to address their goals (Gaventa 1980; Lukes 2005). Decisions with respect to the purpose, problem frame and location of collaboration in the political process are frequently decided by the state (Koontz, *et al.* 2004) and thus strongly implicate governments in the mediation and exercise of structural power.

The final dimension, discursive power, focuses on the ability of actors to shape social norms, values and identities in ways that favour their interests (Lukes 2005). For example, access to financial resources can allow an actor to actively exert power by purchasing advertising that reinforces specific values and ideas (Fuchs 2007). Dominant cultural framings, without added effort on the part of the powerful, may also prevent actors from recognizing that a given outcome

will be harmful to their wellbeing or interest, or that they will be able to make a difference to outcomes (Freudenburg 2005; Gaventa 1980). Due to its subversive nature, discursive power can be very difficult to study empirically, requiring time-intensive discourse analysis methodologies (e.g., Fairclough and Fairclough 2012). However, there are some examples that are relatively easy to identify and these were used for identification of discursive power in the conceptual framework.

Table 3.1 presents this framework, organized into a format suitable for a power theory-based examination of state actions, decisions and motivations relative to collaborative processes addressing water. Lukes (2005) three dimensions of power were first used to organize analysis (Column 1). Theory on collaboration, neopluralism and business involvement in environmental policy making was then used to populate a list of indicators for identifying power in collaborative approaches to water governance (Column 2). These indicators were applied and refined through inductive coding and analysis. As noted by Lukes (2005), there is frequently overlap between categories and interpretation is inherently subjective. These issues are addressed throughout the text where appropriate. Theory on political process and policy cycles was used as an organizing framework for the presentation of results in Section 3.4.

3.3 Methods

Cross case study methods are particularly suited to examining power because the relationships between context, how context is interpreted, and the exertion of power are mutually constitutive (Flyvbjerg 1998b). Case studies allow for in depth examination of context in ways that are often impossible with broader studies (Gerring 2007; Yin 2009). This depth is required for effective power analysis (Flyvbjerg 1998b). A qualitative, cross case study analysis (Yin 2009), guided by an interpretivist paradigm (Guba and Lincoln 2005), was used to ground examination of power theory in empirical contexts in order to examine the involvement of the state in collaboration for water governance. The use of cases where major natural resource industries are active allowed potentially revelatory investigation into situations that are of broad interest and relevance (Yin 2009). The cross case approach allowed some degree of generalizability (Gerring 2007) while isolating a small number of independent variables and minimizing variability in order to support the development of inferences about causal patterns (Druckman 2005).

3.3.1 Cases

Four criteria were used to select two cases with analytical levels at both provincial and regional, watershed scales. First, situations were sought where a state body had instigated regional or

Table 3.1:   A conceptual framework for the examination of power in collaborative envi-
ronmental policy making

Key Dimension from Power Theory	Specific Concern for Collaborative Water Governance
Instrumental Power: Behaviour, decision-making, key issues, observable conflict, subjective interests (seen as policy preferences revealed by political participation) (Lukes 2005:29)	Coercion, co-optation, diversion, manipulation, misinformation
	Facilitation or bridging actors who mediate power
	Imbalance of financial resources
	Unequal capacities (technical, social, institutional, etc.) to participate
Structural Power: Decision-making and non decision-making, issues and potential issues, observable (overt or covert) conflict, subjective interests (seen as policy preferences or grievances) (Lukes 2005:29)	Who instigated collaboration?
	Problem definition or framing and/or agenda setting
	Background of representatives (e.g., evidence of revolving doors)
	Decision making power residing with, or being retained by, the state
	Governments initiating tokenistic processes that exist to generate legitimacy instead of to influence decisions
	Limits of consensus
	Inclusion or exclusion of important actor groups
	Appropriate/inclusive use of knowledge
	Elite level relationships
	Lobbying external to the collaborative process
	Control over information production and use
	The structural bias of capitalism or implications thereof
	Governments favouring business interests
	Governments favouring non-business interests
	Collaboration being influenced by external political contexts
Discursive Power: Decision-making and control over political agenda (not necessarily through decisions), issues and potential issues, observable (overt or covert) and latent conflict, subjective and real interests (Lukes 2005:29)	Efforts to control discourse
	Prescription of a "language" of collaboration
	Groups having to self-censor to participate
	Dominant, hegemonic themes or values related to capitalism influencing collaboration
	Who is, or is not, favoured by the dominant discourse

watershed level collaborative processes under a provincial or territorial framework in order to address issues of water governance. The nested approach was used to ensure that analysis captured both the dynamics of on-the-ground instances of collaboration, and the broader socioeconomic and political context within which collaboration was taking place. Second, the

presence of one or more major, publically traded, natural resource industries as process participants at the watershed level was required. Third, the presence of the state at the provincial, territorial or federal level as a major actor at the watershed or regional level was also required. Finally, cases were sought that enabled some degree of geographical diversity in order to enrich the cross case analysis. The two cases selected are described below and summarized in Table 3.2.

Figure 3.2:   Athabasca River Watershed, Alberta, Canada

The Athabasca Watershed Council (AWC) in the Canadian province of Alberta was selected as the first case (Figure 3.2). The AWC is one of eleven Watershed Planning and Advisory Councils (WPACs) in the province, mandated under the 2003 *Water For Life* (WFL) strategy. *Water For Life* is a broad, strategic document aimed at achieving "safe, secure drinking water; healthy aquatic ecosystems; and, reliable, quality water supplies for a sustainable economy" through Government of Alberta actions and policies (Alberta Environment 2003:7). All WPACs are intended to be broadly representative of watershed interests and to "engage

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watershed residents in their work and seek consensus on solutions to watershed issues" (Alberta Environment and Sustainable Resource Development 2014). Their responsibilities include the development of State of the Watershed Reports that characterize environmental conditions, the creation of a Watershed Management Plan for the basin, and promotion of public education and awareness. These committees are advisory in nature, although they are encouraged to "[s]eek adoption of these plans by the jurisdictions (municipal, provincial and federal) and stakeholders with the appropriate legislated authority to implement recommendations" (Alberta Environment 2005:10). They function according to the principles of collaboration outlined above including broad representation, consensus focus, deliberation, and knowledge integration (Alberta Water Council 2008c). The AWC was created in 2009 and was the last WPAC in the province to be officially designated.

The Athabasca River watershed is notable as the home of the Athabasca oil sands. This area of intensive oil and gas extraction is economically lucrative for the Governments of Alberta and Canada, but also highly controversial due to its environmental impacts (Jordaan 2012). The province of Alberta has a history of dependence upon agriculture, forestry and energy resources; it is defined by a strongly neoliberal political economy. This economic philosophy is apparent in the decisions and actions of the provincial government, particularly with respect to promotion of the oil and gas industry (Clancy 2014b; Cohen and Bakker 2014; Smith and Barr 1984).

The second case, the Thames-Sydenham Source Protection Region, is located in the Canadian province of Ontario (Figure 3.3). In 2006, Ontario enacted the *Clean Water Act* (CWA) in response to fatal contamination of a public water supply in Walkerton, ON (Government of Ontario 2006; O'Connor 2002b). The CWA made recommendations based on an inquiry into the conditions that allowed the contamination incident to occur. It included a recommendation for the creation of locally organized Source Protection Committees (SPCs). The 19 SPCs in the province function according to collaborative principles of deliberation, inclusion, knowledge sharing, learning and consensus focus. They are populated by a mix of provincial, municipal, and civil government representatives, and commercial, industrial, agricultural and non-voting First Nations members. These committees are mandated to develop Terms of Reference, conduct Technical Assessment Reports of municipal drinking water sources, and to create Source Protection Plans that address vulnerabilities and ensure source water protection. These plans, following negotiation with the Ministry of Environment, receive regulatory approval and become law (Government of Ontario 2006).

Figure 3.3:   Thames-Sydenham and Region Source Protection Region, Ontario, Canada

In addition to intensive agricultural development, the Thames-Sydenham Source Protection Region is home to a dense concentration of petrochemical industries, informally referred to as "Chemical Valley", located at the lower end of the watershed in Sarnia, ON. Significant water contamination issues have been documented with respect to Chemical Valley (International Joint Commission 2006). Attention to water and other environmental concerns has largely been a function of the ideological stance of the governing party. Left-leaning ruling parties have tended to make and enforce more stringent regulations. Ontario has had a rotation of right, centre and left leaning ruling parties and the province has been the subject, by turns, of both praise and

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condemnation for its position on various environmental issues (Winfield 2012). The Liberal party presiding over the development and implementation of the *CWA* represents a centrist ideology.

Table 3.2:   **Case study characteristics**

Case Characteristics	Thames-Sydenham Source Protection Committee, Ontario	Athabasca Watershed Council, Alberta
Provincial legal or policy framework	*Clean Water Act* (2006)	*Water For Life* (2003)
Regional case size	10,826 km^2	159,000 km^2
Regional population	717,000	152,097
Collaborative group history	Committee appointed in 2007, Mission Statement and Guiding Principles confirmed in 2008	Council created in 2009
Group size	22 voting members – 7 municipal, 7 business and industry, 7 "other", 1 Chair – as well as 3 First Nations and 3 non-voting government liaisons	18 elected directors – 3 from each of 5 sectors: government, non-governmental organizations, Aboriginal, industry, and other – as well as the past President
Outputs to date	Terms of Reference; State of the Watershed report: 3 phases	Terms of Reference; Four technical and assessment reports; Draft Source Water Protection Plan
Decision-making structure	Consensus-focused	Consensus-focused
Major natural resource industries present in regional case	Agriculture, oil and gas and petrochemical industry	Oil and gas and related industry, forestry, agriculture, coal mining, pulp and paper, sand and gravel extraction

[1]http://www.sourcewaterprotection.on.ca/downloads/sp_plan/SupDocs/AR/ST.%20Clair%20Approved%20AR/Appendices/A5-WC_Summary/StClair-Summary.pdf
[2]http://awc-wpac.ca/content/athabasca-watershed

3.3.2   Data Collection and Analysis

The conceptual framework (Table 3.1) guided data collection and analysis of semi-structured interviews, documents and personal observations over a period from July 2013 to December 2014. Analytic induction was used throughout the entire process to reflexively refine the conceptual framework and methodological approach in response to emergent findings (Bloor and Wood 2006). Purposeful and snowball sampling techniques were used to recruit 41 individuals for interviews from a pool of current and former government officials at provincial and municipal levels, collaborative process staff and actors, industry actors, and key political informants with

insights on both collaboration and the cases studied. Twenty interviews were conducted in Alberta and 21 in Ontario. Ten Alberta interviewees were selected from the local level and ten from the provincial level. In Ontario, 12 interviews occurred at the local level and nine at the provincial level. In both provinces, many local actors had experience or insights at the provincial level and vice versa.

Interviews questions explored the relationship between concerns identified in Table 3.1 and the empirical contexts in question. For example, interviewees who were collaborative participants were asked to define the full range of policy influence options available to them. Responses revealed a range of methods from attempts to apply media pressure for many civil society interviewees, to elite access through direct lines to provincial premiers for some industry interviewees. Although interviews were semi-structured, participants were free to address topics they considered relevant. This was done in order to ensure that results were not unduly constrained by the conceptual framework or researcher bias (Bloor and Wood 2006). Following accepted conventions in qualitative research (Carlson 2010), interviews were transcribed verbatim and returned to interviewees for review. Where necessary, follow-up interviews were conducted to clarify or expand upon key issues.

Documents provided a second key source of data and 92 documents were collected for analysis. These included government policy documents, policy intervention records, promotional materials, draft and finalized plans, emails, interpersonal communications, collaborative group publications, websites, industry reports, and industry promotional materials. Personal observations provided a third source of data. Observations were collected during participation at one collaborative organization board meeting in each province, during interviews, and during site visits in each watershed.

Interview transcripts, documents and observations were coded and analyzed using QSR NVivo 10. Analysis reflected a combination of both inductive and deductive approaches (Berg 2009). While the conceptual framework focused on specific themes, data sources were also coded openly to reveal insights not predicted by the framework. Successive rounds of axial coding identified emergent themes, patterns and relationships (Berg 2009; Strauss and Corbin 1998). Triangulation amongst data sources was used to construct validity of findings and helped determine subject saturation (Yin 2009).

3.4 Results

Results are organized around the stages of Howlett and Ramesh's (1995) policy cycle (Figure 3.1). Within each policy cycle stage, the results presented reflect those instrumental, structural and discursive power considerations noted in the conceptual framework that emerged as relevant to the analysis of power in the cases examined. Not all concerns identified in the conceptual framework were apparent in the cases examined. Where appropriate, emergent findings revealed through open coding that were not predicted or explained by the conceptual framework are also presented. When cited for quotations, interviewees are referred to by codes in order to preserve confidentiality (e.g., AB1, ON3). Key findings, organized by case and policy-cycle stage, are presented at the end of this section in Table 3.3.

3.4.1 Stage One: Agenda Setting

Agenda setting is the first stage of the policy cycle and shapes the range of options available to address a given situation. It is the primary focus of structural views on power but also reflects instrumental and discursive dimensions. Interviews, documents and observations revealed how a number of power issues shaped this policy stage. Specific power concerns, identified in Table 3.1, included government control over agenda setting, and preferential patterns of influence that reflect structural privileging of organized economic actors.

In Ontario, the agenda was set at the provincial level, prior to the initiation of collaboration. The provincial government's framing of the problem restricted the scope of Source Water Protection to only municipal drinking water supplies. Early *CWA* documents had recommended a broad approach to source water protection that would include non-municipal water sources. Interviews and documents did not provide insight into the internal Ministry decision to restrict the focus although the restricted scope was problematized by many interviewees and by reviewers of the draft and final *CWA* (e.g., Canadian Environmental Law Asssociation 2004; Environmental Commissioner of Ontario 2007; Legislative Assembly of Ontario 2006). These sources indicated that the way vulnerable areas were defined meant that the zones within which committees had legal power to restrict activities did not encompass many significant threats to drinking water. In effect, by only protecting municipal drinking water supplies, drinking water quality impacts that were controversial in nature, such as those cause by natural resource industry firms, were very rarely affected because they lay outside the most vulnerable municipal supply areas. For example, four provincial government, industry and environmental group interviewees identified gaps

related to drinking water threats that they believed were deliberately created by the province to protect industry:

> the way the Ministry structured how you assess the vulnerability of a Great Lakes water intake, you could never, ever, find a threat to be significant. So it really didn't matter. You could have 100,000,000 tons of methyl ethyl death stored on the shore line right beside an intake and it could never be classified as a significant drinking water threat which meant we didn't have any mandatory powers to deal with it…it wasn't an oversight. It was deliberately done. (ON19)

In the case of threats on the Great Lakes, committees were able to make recommendations for addressing threats but could not create requirements that were legally binding. The Auditor General of Ontario problematized this in her December (2014:411-412) report: "There is a high likelihood that spills from industrial and commercial facilities may also pose a significant threat to intakes in the Great Lakes, but plans do not currently address them".

The Ministry also pre-defined 21 possible threats to drinking water that could be identified by committees. Eleven Ontario interviewees were concerned that the designation of these "prescribed threats" prevented committees from addressing some water issues that had potentially significant impacts but were more political in nature. As one interviewee noted, "If we had a public meeting or something and citizens brought issues forward, most often we would be stuck saying we really can't do anything about it because it's out of our area" (ON16). For example, four interviewees and several other Source Protection Committees across the province specifically stated that many people would have liked to have addressed aggregate quarries as potential threats to drinking water. However, by actively restricting what activities could be identified as "threats", the Ministry prevented committees from using regulatory tools to limit aggregate activities (e.g., Lake Erie Region Source Protection Committee 2014). Although mechanisms did exist within the *CWA* for committees to petition for the inclusion of "local threats", these petitions were often not successful. In the case of aggregate, petitions were repeatedly denied.

Provincial control also extended to restricting the use of specific words that were considered problematic due to their political nature. For example, committees were ordered to omit words such as "compensation" from their Terms of Reference (e.g., Ontario Soil and Crop Improvement Association 2007; Smith 2009). In an letter from the Ministry to committees attempting to address financial compensation for actors making changes required by Source Protection Plans,

"the Minister has directed amendments to the language specific to compensation" (Smith 2009). Seven interviewees, and the Ontario Auditor General in her 2014 report, expressed concern that the scope of the *CWA* has been restricted such that it will not affect very many people or significant issues, and that the province has resisted influence on policies (Office of the Auditor General of Ontario 2014). The specific power concern with respect to both municipal supplies and prescribed threats relates to non-transparent control over the agenda setting process by the Ministry. Decisions that protected the interests of industry also point to potential structural bias is favour of economic interests.

Because data on high level lobbying are difficult to obtain, it was not possible to determine if the province's agenda setting decisions were the product of specific industry interventions, of proactive government decisions to protect industry interests, or of both. In the first example, power would have been actively exerted by industry. In the second, government actions to protect industry, even absent action on the part of industry, would reflect structural power resulting from broader hegemonic socioeconomic contexts. Providing evidence to support the structural argument, documents and all provincial government interviews revealed that the Source Water Protection agenda, consistent with current government philosophy, was defined by the need to retain jobs and promote industrial development, and by threats from industry to move to another jurisdiction if the regulatory regime became too restrictive.

The inputs, process and outcomes of the agenda setting process also provide insight into power exerted by the state and industry. For example, hearings on the *CWA*, used to facilitate consultation on a draft White Paper for the *CWA* (Ontario Ministry of Environment 2004), highlighted concern on the part of industry with respect to the prohibitionary powers to be granted to non-elected Source Protection Committees, the potential for inconsistent regulations across the province, and potential restrictions on growth. While data are not available for the internal Ministry justifications used to ultimately refine the agenda, industry concerns were largely addressed in the final *CWA* (Government of Ontario 2006; Legislative Assembly of Ontario 2006). In Alberta, issues of power affecting the agenda setting stage were a product of underlying structural bias in favour of the energy industry, and of non-decisions and inaction at the provincial level – both reflective of the second dimension of power. Contrary to the situation in Ontario, almost all interviewees in Alberta commented that the government did not provide *enough* support and direction. Most interviewees inside and outside government, reinforced through observations and a 2008 Ministry review (Alberta Water Council 2008a), noted that WPACs were unable to operate effectively without clearer definition, boundaries, direction, focus

and feedback from the province. The hands-off approach to WPACs was a product of the broader government agenda setting strategy for water policy creation. Interview, document and observational evidence provide support for the position that the Alberta government's lack of support for WPACs reflects a broader structural strategy whereby, as noted by a WPAC participant, government actions and decisions are taken to

> aligns its decision-making, its policies, its activities, its budget, to protect the energy sector in Alberta, and to enhance it, and to promote it, and to ensure that that activity is carried out and profits are made. (AB5)

All 20 Alberta interviews identified the significant impact of the energy industry on provincial politics. One government interviewee noted preferential access for industry actors in setting water policy agendas: "there are certain key stakeholders that we will brief on the side, before the public opportunity for engagement and feedback is entertained" (AB1). Since the Alberta WPACs produce voluntary watershed management plans, allowing WPACs relative freedom on collaborative agenda definition did not create a danger that the WPACs would produce plans requiring changes to broader government policy trends. This position was reinforced by an industry interviewee who noted that "you still need to be able to say, 'Okay, you've made your decision but we're going to overrule it because we're the government and we get to do that.'" (AB3).

Coding for themes related to discursive power revealed further support for the structural bias of the provincial government. Strongly business-focused language was internally used to describe government operations in both interview and documents. Government officials referred to their "larger corporate priority plan", the "value proposition" of WPACs, and the "business planning process" of the Ministry. One government interviewee, and various Government of Alberta documents (e.g., Alberta Energy 2014; Alberta Innovates 2014), made specific reference to the fact that the Government of Alberta needs to build and maintain its social license to operate (AB1). This type of language was not evident in Ontario.

Provincial non-decisions and inaction also allowed more visible manifestations of instrumental and structural power to play out at the watershed scale in ways not apparent in the highly facilitated Ontario process. Specifically, a lack of formal state structure and support allowed opportunities for intimidation, action defined by resource constraints, and structural bias reflecting the dominance of the energy industry in Alberta. For example, weak provincial involvement resulted in visible contestation over agenda setting at the watershed level. One

interviewee identified both watershed scale conflict, reflective of instrumental power, and structural constraint over issue definition at this stage:

> Members of the board would say that that [issue is] against their sector or they're afraid that the government will be displeased and actually you have to be careful what you say because they are our funders. (AB19)

A provincial government interviewee (AB15) reinforced this sentiment, noting that the willingness to fund WPACs is dependent upon the performance of resource industries, and that this constrains the ability of WPACs to address issues that will harm the profitability of industry.

3.4.2   Stage Two: Policy Development

Policy options are developed and refined in the second policy cycle stage. Across the two cases, issues of instrumental and structural power that reflect concerns noted in the conceptual framework dominated. In Ontario, issues of power were relatively easy to identify because the government actively shaped proposed policies by exerting instrumental and structural control over rules of operation and Source Protection Plan content, controlling language, and restricting knowledge production and use.

The province actively exerted instrumental power through "Liaison Officers" on committees in order to retain control over the content of Source Protection Plans. These individuals acted as resources and would intervene – sometimes using aggressive methods – if committees attempted to operate outside their approved Terms of Reference. Interviews and documents also revealed provincial exertion of structural power through attempts to control representation by selecting sector representatives that the government felt would be easier to work with (Ontario Farm Environmental Coalition 2013).

Throughout the process, the Ontario Ministry of the Environment continued to exert influence by issuing evolving Director's Technical Rules that shaped operations and topics of focus at the watershed level, and ultimately in the approved Source Protection Plans (Ontario Ministry of Environment 2009). According to five interviewees, the justification for these rules was not necessarily transparent and "the net result of some of these rules were [sic] to, I think, circumscribe what we wanted to do at the local level" (ON19). A template was provided to structure plans, and there were specific mandatory prescribed methodologies for the production and presentation of scientific information (Ontario Ministry of Environment 2009). These structures significantly shaped the format and content of the information used to make final

policy decisions and plans. Eleven interviewees expressed concern over the use of set rules for assessing vulnerability of water supplies, and the mandatory use of designated tools to address threats. The prescriptive nature of the process was also concerning for other committees (e.g., Casgrain-Robertson 2013). As a result of this active exertion of power by the provincial government in controlling plan structure and content, the final Ontario plans appear quite similar across the province, consistent with industry and government actors' stated desires to avoid a patchwork of regulations.

In Alberta, in-process involvement of the government in policy development was relatively passive, consistent with the province's broader hands-off approach. There were interventions at the watershed scale through provincial government representatives to inform, but not necessarily restrict, WPAC operations. Fourteen interviewees, along with documents critical of the WPAC process, problematized the lack of provincial support (e.g., Alberta Water Council 2008c; Unger 2009). For example, interviewees, corroborated through observations, noted that the lack of government oversight has made it possible for committees and processes to be co-opted by higher capacity interests through the exercise of instrumental and structural power. These concerns have played out in the AWC through particularly vitriolic interpersonal and professional conflict, as evidenced by email and interpersonal communication records gathered from interviewees.

3.4.3   Stage Three: Policy Selection

In both cases, the policy selection stage reflected activities occurring largely at the provincial level and was characterized by structural power issues described in the conceptual framework. Open coding also revealed a number of emergent themes not directly predicted by the conceptual framework but nonetheless relevant to the examination of state actions and motivations.

In Ontario, although provincial government interviewees were reluctant to speak of examples of direct influence on Source Protection Planning, they were willing to speak of broader government trends. All these interviewees acknowledged that, despite the apparent commitment to collaborative Source Protection Planning, important water policy decisions are usually made through established patterns of elite-level access with economic interests,. As one interviewee, referencing Source Protection Planning, stated:

> in many instances industry reserves the right to go behind the conversation and have a
> follow up conversation. Just as key stakeholders will reserve the right to phone the
> premier and say, 'Well, that was all great. But, here is my bottom line.' So if you're all
> into a [collaborative] process, you have to turn off that backdoor because otherwise

you're not really into it, right? You're just into a token, consultative or joint decision-making and I think rarely do governments turn off that backdoor (ON7)

For watershed scale interviewees, this provincial stance was reflected in a widespread sense that Source Protection Committees have been able to influence a number of policies, but that it is unlikely that Source Protection Plans will produce substantive changes in either provincial policies or environmental conditions.

This position also reflects a theme not directly identified in the conceptual framework that emerged through open coding: that of a persistent command-and-control decision-making culture at the provincial level. According to one Ontario participant, government officials have been "raised in an era where: 'I am the keeper of the water and if I want the water to improve, I'll make a regulation'" (ON1). Consistent with this approach, and reflecting the ongoing structural theme of government control over decision-making, all Source Protection Plans require the final signature of the Minister of Environment. Plans were submitted by committees, reviewed by the province, and then returned to committees with required changes identified (e.g., Thames, Sydenham and Region Source Protection Committee 2014a). Committees were required to either agree to changes, or to attempt to achieve the same outcome through other approved mechanisms. Throughout this process, the province actively exerted power over the final policy despite a commitment to collaborative policy making embodied by statements such as the following from Conservation Ontario (2013), the provincial institution rolling out the *CWA*, "communities will be required to create and carry out a plan to protect the sources of their [municipal] drinking water supplies".

Amongst three provincial government interviewees, there was also acknowledgement that the high costs of collaboration make it easier to revert to traditional command-and-control decision-making patterns, which also allow them to respect their perceived obligations to economic interests. One senior provincial interviewee noted that, "

[we] don't have the resources or the forum to have this truly consultative, so it's comfortable to go back to that current model of, 'we'll post it on [the government comment website]. We'll take phone calls and comments from people, and we'll make the best decision we can. And, oh by the way, because we care about the jobs, we'll keep the back door open.' Moving to that consultative [process], it requires care and feeding, and people have expectations of actually having real power. And to do that takes a lot more of our energy. (ON7)

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State retention of control over water policies was also a dominant theme in interviews and documents in Alberta. However, a lack of effective communication resulted in considerable confusion amongst both government and non-governmental interviewees over the degree to which the province would allow influence on water policies. As one government interviewee noted, "we used the word 'advisory' from a departmental perspective without maybe being as clear to the organizations themselves that advisory simply was that" (AB15). This directly relates to concerns identified in the conceptual framework that collaboration has the potential to be used as a "token" process. To illustrate, government interviewees and email records revealed a lack of process for receiving and reviewing the State of the Watershed Reports and Watershed Management Plans. A government interviewee revealed particular confusion upon receiving one plan: "What do I do with this [watershed] plan? What's my obligation as a Ministry to respond to this plan?" (AB1). This position indicates a lack of provincial commitment to honouring WPAC policy inputs, contrary to the stated expectations of WPAC participants. As an example of those expectations, one Athabasca WPAC participant stated that "the [province is] spending a quarter of a million dollars a year, or a little more, to get the information to get us to do this, so it has to go somewhere" (AB20). Individuals with experience on other WPACs expressed frustration with the response they had received from the province:

> It took a year. [The Ministry] came back and said, 'Well, we've looked at this [plan] and we don't want you to construe that anything in our response constitutes a commitment to do anything that you've recommended.' (AB8)

The consequence of the province's exertion of control over water policies, and subsequent failure to effectively communicate with WPACs regarding potential policy influence, shaped WPAC participant perceptions of the process at the watershed scale. From nine non-government interviewees, there was worry that the collaborative process was "just window dressing" (AB9). Participants were clearly frustrated with the process:

> I think the [committee] become jaded because they'll say, "the water is blue" but by the time it gets rolled into the big policy, well, "the water could be blue"… So the substance of what they were saying is either watered down or diluted to the point where it's ambiguous…there's no transparency. There's no discussion on that. There is not that accountability where, okay, you've mandated us to make all these recommendations, we've made all them, where are they and if they are in there, why are they watered down or why are they construed into a different format than when we

told you, very clearly and concisely, what we wanted and recommended to you based on the science? (AB14)

Consistent with findings in Ontario, data from Alberta also supported the position that the province exerted power through decisions and non-decisions in response to a perceived need to protect interests of industry. Civil, industry and government interviewees all referred to the need for the government to make policy decisions in the interests of the energy sector because of their dependence on industry taxes and royalties for social programs. This was expressed in a comment from a staff member, who explained that,

> if you are an elected official you have social programs to worry about, you have education, you have healthcare off the top. You've got all these issues and they're big buck issues and they've got the money. The elected people have to go after the money. (AB4)

Six government and civil actors indicated that elite industry interests are able to shape decisions at the upper levels of government where WPACs have very little influence. The end result of the exertion of state power in Alberta was to prevent WPACs from meaningfully impacting water policy, while maintaining a position that allowed WPAC participants to believe they would be afforded influence.

3.4.4   Stages Four and Five: Policy Implementation and Evaluation

At the time the research was completed, neither the Thames-Sydenham nor the Athabasca plan had reached the implementation or evaluation stages. However, interviewees did have expectations for these stages that largely reflect structural power concerns identified in the conceptual framework. Most Ontario interviewees at the watershed scale highlighted the moderate changes to municipal source water protection and positive community and relationship-building experiences they have experienced through the process. There were ongoing concerns about capacity for implementation (e.g., Thames, Sydenham and Region Source Protection Committee 2014b) but these concerns were at least partially being addressed by the province (i.e., Ontario Ministry of the Environment 2013).

In Alberta, interviewees expressed concern that WPACs have no established accountability mechanisms that formalize the relationship between WPACs and the province with respect to input into provincial water policies. The Alberta Water Council's *Strengthening Partnerships* (2008c) document states that "a formal, hierarchical reporting relationship is not required". This

Table 3.3   **Key results organized by case, policy cycle stage and type of power**

Policy Cycle Stage	Case	
	Ontario	Alberta
Agenda Setting	*Structural Power* • Control of the agenda and consequent restriction of ultimate outcomes and affected actors by the Ministry of Environment • Perception, supported by evidence, that structural control restricted impacts on resource industry firms *Discursive Power* • Exercise of control over specific words or topics	*Instrumental Power* • Significant conflict at the watershed level due to a lack of state participation (see below) *Structural Power* • Lack of state direction and support (e.g., funding allocation, inability to effectively address issues with potential negative economic consequences, lack of facilitation) *Discursive Power* • Evidence of discursive bias as revealed through language
Policy Formulation	*Instrumental Power* • State control over processes through Liaison Officers *Structural Power* • State control through issuance of evolving Director's Technical Rules, use of prescribed tools, methodologies, and knowledge types and formats	*Instrumental Power* • Significant conflict at the watershed level due to a lack of state participation (see below) *Structural Power* • Lack of state involvement (e.g., lack of facilitation)
Decision Making	*Structural Power* • Some evidence of positive environmental outputs • Ongoing state control over decisions and evidence of accommodation of economic interests *Emergent Findings* • Retention of state control is also a function of command-and-control culture	*Structural Power* • Provincial retention of control leading to disempowerment and perceptions of WPACs as token participatory processes under a government that structurally favours the energy sector *Emergent Findings* • Prevailing institutional confusion at the provincial level
Implementation and Policy Evaluation	*Structural Power* • Expectations of moderate impacts based on the defined agenda	*Structural Power* • Limited expectations of impact at the watershed scale due to a lack of provincial support for implementation *Emergent Findings* • Prevailing themes of "hope" in response to perceptions that processes won't make a difference

reflects a broad perception, related once again to the structural theme of state retention of control, that WPACs will not be "listened to". Of all the government officials interviewed, none were willing to acknowledge any provincial responsibility for achieving outcomes. Three government interviewees emphasized that they were extremely open to WPACs coming up with their own funding, and that they hoped that municipal and industry actors would step up and voluntarily implement the recommendations made for them. More positive hopes for policy influence through the AWC were based on expectations of long-term change as a result of relationship building, and influence and education of voters. However, these outcomes, should they occur, are more likely to reflect an abdication of state responsibility toward WPACs rather than active support of collaboratively developed water policies – a result that is consistent with the predominantly neoliberal orientation of the province, if not with its stated intentions to WPAC participants.

A final emergent theme in Alberta at the watershed scale was that of "hope". In general people kept participating, "I guess because you have to hope. I mean, at least there's a conversation going on but several of us were saying… is this worth our time or not?" (AB9). Participants also "hope" that the government is going to listen (AB12), "hope" that they will be able to sit at some tables with real influence (AB11), and "hope" that someone will pick up their recommendations down the line when pro-energy political conditions change (AB19). The same theme was not present in Ontario where interviewees tended to focus on the changes to municipal drinking water protection that are legislated to occur through collaboration. Key results are summarized in Table 3.3.

3.5 Cross Case Analysis and Discussion

This study investigated the roles, actions and motivations of the state in achieving, or failing to achieve, desired outcomes from collaborative approaches to water governance at the watershed scale. The following section analyzes and discusses the ways that the governments of both Ontario and Alberta exerted control over the collaborative policy cycle, albeit through different mechanisms, in ways that had significant impacts on collaborative processes and outcomes – both environmental and social. Mechanisms of control are then examined as a function of both conditions predicted by the conceptual framework and emergent findings. This is followed by a summary of implications, and a series of recommendations for governments.

3.5.1 The collaborative policy cycle

The importance of issue definition arose frequently in both cases despite the fact that the two provinces adopted different approaches. Exerting power over agenda setting, as the Province of Ontario did, tightly controls the scope of the problem, the range of actors to be affected and included, the tools that can be used and, ultimately, the range of outcomes that can be produced (Howlett and Ramesh 1995). Issues related to structural power, namely elite level access, non-transparent Ministry decisions, a command and control culture, and neopluralist government positioning, controlled the scope of issue definition. The end result was a process that impacted few influential actors and was perceived to have avoided politically contentious but critical issues. These restrictions have been problematized in other research on Ontario's Source Water Protection process (Baird, *et al.* 2014; Hania 2013).

In the case of Alberta, the interplay of power at the agenda setting stage was more complex. Through more open agenda setting, the provincial government both allowed WPACs more flexibility and set the stage for the interplay of divisive instrumental power amongst actors at the watershed scale. Structural and discursive issues of implicit agenda control also arose in situations where participants did not feel comfortable or able to introduce issues. These illustrate Bachrach and Baratz's (1970:42-46) "rule of anticipated reactions" whereby a less powerful actor "decides not to make a demand upon [a more powerful actor], for fear that the latter will invoke sanctions against him". Other studies into collaboration in Alberta have reported problems in bringing contentious issues into the problem frame (Clare, *et al.* 2013; Schmidt 2014). Reinforcing these findings, Lockwood et al (2009), studying community-based natural resource management in Australia, found that processes were most effective when states were supportive rather than either controlling or absent.

The hands-off approach adopted by the Alberta government contrasts with the highly involved role assumed by the Ontario government. Careful attention to the facilitation of policy development and both financial and technical resources in Ontario avoided much of the blatant power imbalance, conflict and exertion of instrumental power that was present in the Athabasca during policy development and selection. The emphasis on facilitation and resourcing in Ontario reflects current best practices for dealing with power in the literature on collaboration (e.g., Ansell and Gash 2007) but was unable to address structural and discursive power issues that transcended the watershed scale and remain unaddressed in current literature on collaborative approaches to water governance (see Chapter Two).

In both provinces, the provincial government asked for, but did not adequately and transparently integrate, input and feedback from committees. There was a widespread feeling in Ontario that committees have been able to affect policy but that the actual impact of the process was quite limited in scope. The moderate expectations for outcomes in Ontario reflect structural power exerted by the government at the agenda setting and policy development stages. While those interviewed felt satisfied they have influenced policy selection, they have also accepted that the process will have limited impact through implementation because it has been so tightly scoped and controlled. Acceptance of outcomes that do not necessarily coincide with the wishes or interests of those impacted can occur because affected actors either recognize the body in power as a legitimate authority (Lukes 2005), or because the political costs of pushing for a different outcome outweigh the benefits that have been achieved (Clegg 1989).

Amongst non-government actors in Alberta, there was little expectation of policy influence, along with a mix of despair and hope that the efforts put into WPAC processes would generate change based on the time, effort and money that had been put into the process. The emphasis on "hope" potentially reflects a cognitive bias observed by other researchers. In these cases, participants are disproportionately positive about the outcomes of collaborative processes in order to justify the time and resources they have committed (Benson, *et al.* 2014; Koontz and Thomas 2006).

The Government of Alberta exerted the most obvious structural power at the policy selection stage by refusing WPACs input into policy decisions. The lack of government commitment to effective integration of WPAC outputs, contrary to the stated expectations of those putting time and effort into collaboration, resulted in widespread concern that processes represented token consultation and that the WPAC process is simply, "a way of balancing but also quieting your skeptics while just doing what you always do" (AB14). This coincides with Foucault's notion of "shallow conflict" whereby forms of resistance that are promoted by existing power structures often have the effect of preventing other, more effective forms of resistance to manifest (Foucault and Gordon 1980; Haugaard 2006). Concern about WPACs as token processes – an issue identified in the conceptual framework – emerged directly from this study and is consistent with other research on WPAC processes (Cohen and Bakker 2014; Schmidt 2014). The issue of token participation did not emerge as a concern in Ontario.

3.5.2   Motivations of state actions

There appear to be two main reasons why the governments examined in this study felt the need to retain control over processes. The first, an emergent finding not captured by the conceptual framework, was cultural path dependency tilted towards traditional command-and-control models within rigid bureaucratic structures. These issues of state organization and culture, reflected in the empirical case descriptions, can themselves be examined as a function of historical socioeconomic and political influence over time. For example, Howlett and Brownsey (2008) examine the influence of colonization, and the nation's historical focus on resource extraction, on the modern political economy of Canada. As such, political culture, observed through a broader problem frame than is used in this study, is a product of power relations over time (Engelstad 2009). Regardless, bureaucratic states tend to change slowly and the meaningful and transparent inclusion of non-government actors into decision-making processes represents a significant shift in cultural practice (O'Leary and Bingham 2009). The study also revealed constraints, such as democratic accountability and legal responsibility, which partly explain why the inclusion of collaborative processes into existing governance systems has been challenging. The challenge of meaningful inclusion of deliberative processes and outcomes into larger representative democratic systems is an ongoing theme in literature on both collaborative environmental governance (e.g., Koontz, *et al.* 2004), and deliberative democracy (e.g., Goodin and Dryzek 2006). As such, retention of ultimate decision-making authority is often viewed as justified (Fish, *et al.* 2010; Gunningham 2009).

While the formal justification for retaining decision-making power is clear, state control over collaborative processes went beyond ensuring that democratic accountability and fiduciary responsibility were met. Both governments acted through autonomous, neopluralist positions with respect to collaboration, reproducing the type of domination-based power described by Lukes (2005) and largely exercised through the structural dimension. State actions and decisions were strongly influenced by dependence upon economic actors for jobs, growth, royalties, and support for social programs.

In both cases, the state responded to pressures exerted sometimes far beyond the regional, watershed level. In many collaborative processes, powerful actors are able to mobilize resources and exert power at scales transcending the individual, watershed and global (Holley, *et al.* 2012; Pares 2011). In both provinces, there was evidence of elite-level influence at the provincial level, apparent through control over agendas and information, and decision-making consistent with the structural privileging of economic interests (as discussed by Brooks and Stritch 1991; Hessing, *et*

al. 2005). At the same time, in order to produce better, more enforceable local solutions, collaborative processes require a balancing of interests at the watershed scale (Ansell and Gash 2007). In the cases examined, civil and environmentally focused collaborative actors were unable to exert equivalent countervailing influence upon the state at the scale where decisions were made. Civil and environmental groups with the capacity to influence at higher scales do exist in other contexts but were not present in this study and generally do not occupy the same privileged position as business interests. While countervailing power is enhanced when the issues in question have broad public salience, powerful civil and environmental groups tend to be the exception rather than the rule (as per Cerny 2010). This means that governments using collaborative processes to address environmental issues face a potentially fundamental issue in committing to honour collaboratively made watershed-scale decisions that must be nested in the broader provincial political and socioeconomic context. There is a significant likelihood that watershed scale recommendations will reflect priorities that conflict with the powerful interests normally involved in elite-level policy making. The local appetite for addressing aggregate operations, evidenced by the attempts of committees to include aggregate as a threat to drinking water, is one example of this.

3.5.3   Implications

The nature of state participation in collaboration has a number of implications for collaborative processes and outcomes. Control over issue definition is fundamental to the study of both power and policy cycles. Power theory in particular emphasizes that the party with control over problem definition also has the ability to keep other issues off the table, thereby achieving at least superficial quiescence (Bachrach and Baratz 1970; Gaventa 1980; Lukes 2005). A collaborative process that truly aims at equitable representation of interests should thus seek to collaboratively define issues in order to avoid the privileging of certain interests (Pares 2011; Shilling, *et al.* 2009). However, collaborative agenda setting faces practical constraints. It can be difficult for democratically and legally accountable governments to justify resource expenditures on processes with uncertain outcomes (Irvin and Stansbury 2004). Committees in both Ontario and Alberta tried to address issues that were beyond the jurisdiction of the lead Ministry or Department; in neither case were they successful. Collaborative issue definition thus has the potential to introduce challenges to existing institutionalized government structures, especially in Canada where jurisdictional responsibilities for water are split between the provincial and federal governments (Nowlan and Bakker 2010). Also, not all collaborative committees want the responsibility of agenda setting. For example, participants in a study of collaboration in British

Columbia preferred process pre-design in order to expedite the collaborative process (Frame, *et al.* 2004). While stated preferences with respect to agenda setting can mask hidden structural or discursive issues, addressing power operating at the agenda setting stage thus requires careful consideration of context and constraints.

In both provinces, but especially in Alberta, many interviewees felt that their concerns were not adequately represented or taken seriously. Collaborative governance scholars frequently highlight the social benefits of collaboration in situations where the achievement of environmental outcomes has failed (e.g., Innes and Booher 2010; Leach and Sabatier 2005). However, findings revealing participant frustration, anger and hopelessness provide evidence that the lack of state commitment to collaborative process and integration in Alberta is actually serving to disempower civil and environmental actors. Regardless of whether or not collaboration is used, strong civil and environmental advocates are essential to a healthy democracy. In situations where there are significant power imbalances, collaboration that does not adequately account for power can represent an exercise with disproportionately high social and financial costs relative to the benefits achieved (Kallis, *et al.* 2009) .

For many scholars, collaborative processes represent a way to address unproductive societal power imbalances while moving toward a healthier environment (Emerson, *et al.* 2012). From this perspective, it is important to note that, in the cases examined, collaboration seems to be largely reproducing entrenched power structures (as in Fish, *et al.* 2010; Kallis, *et al.* 2009; Pares 2011). Controlled participation, processes and outcomes in Ontario have done very little to shift decision-making patterns with respect to many of the most significant environmental impacts in the province. Decision-making remains similarly unchanged in Alberta. Schmidt (2014:1138), in his examination of norms and transitions in WPAC processes, emphasizes that "the 'procedural turn' can further entrench inequities if the existing practices of democratic institutions insufficiently address inequity". The implication is that the government of Alberta will need to address real and perceived bias toward the energy industry at a provincial level in order to ensure that WPACs generate positive social outcomes. While the exercise of power was relatively visible and obvious in Alberta, the much more subtle exercise of power in Ontario was perhaps just as concerning by virtue of the fact that it was hidden and therefore harder to identify, oppose and address.

Finally, collaboration in other settings has demonstrated significant value in terms of integrating different types and forms of knowledge, and allowing shared learning to occur (Emerson, *et al.* 2012; Taylor and de Loë 2012). While actors in both provinces did point to some

forms of knowledge integration and learning, control over policy development affected the emergence of these benefits. Tight process control in Ontario resulted in initiatives that failed to address politically difficult issues. This meant that one of the major potential benefits of collaboration, the opportunity to enable participants to re-examine deep-seated values and beliefs through the deliberative process, was undermined because those values and beliefs were never challenged. In Alberta, shared learning was hampered by the degree of instrumental power and visible conflict at the WPAC level. Any shared knowledge and learning that were able to manifest under existing conflict conditions were unlikely to be effectively utilized because of a lack of formalized integration of WPAC products. In both cases, the potentially significant benefits from collaboration were not fully realized because of actions and control by the state.

3.6 Conclusion

While the governments of both Alberta and Ontario exerted significant control over collaboration, they did so through different mechanisms, using different forms of power, and at different stages in the policy cycle. The contrast between strict agenda control in Ontario and a lack of support in Alberta indicates that realistically accounting for power under current socioeconomic conditions requires striking a balance between transparent agenda setting and pre-design. Defining the middle ground in this terrain can become complicated because interpreting the expectations and interests of the public is inextricably linked to hegemonic norms that are continually reproduced by those in power (Clegg 1989; Haugaard 2006). Nonetheless, the study suggests that states can begin by being transparent about which interests are included, and which excluded, through decisions made by the state at agenda setting, problem definition and implementation stages of the policy cycle.

In both cases, the examination of state involvement and use of collaboration through a power lens revealed that current state positions with respect to collaboration are not necessarily allowing those processes to achieve purported collaborative benefits including better, more enforceable environmental policies, empowered citizens, and shared learning and knowledge. In both cases, collaboration appears to be exacerbating the conditions of exclusion and inequity they were designed to address. These findings have been disparately addressed by other scholars on collaborative environmental problem solving (e.g., Holley, *et al.* 2012; Innes and Booher 2010; Taylor and de Loë 2012). This study builds upon their work by linking together the factors potentially affecting the success of collaborative outcomes through a power framework. Given that power can be lessened, or at least henceforth require continual justification, through exposure

(Zeitoun and Allan 2008), examining power sheds light upon potential areas of focus for entities attempting to improve the collaborative efforts of states.

The Province of Ontario did attempt to design a collaborative process based on best practices in the literature to date. However, the literature on collaboration itself has not adequately addressed the issue of power, especially when power operates at scales beyond the regional, watershed level. It is perhaps unsurprising then that even the highly scripted Ontario process largely failed to address issues of power beyond instrumental or visible structural dimensions. It is thus clear that examining power with respect to collaboration is a theoretical gap to be addressed. Studies of the ways that actors and institutions with influence at provincial, national, and global scales affect collaboration will go a long way toward ensuring more effective processes and outcomes in the future.

Chapter 4

Natural resource industry involvement in collaboration for water governance: influence on processes and outcomes

4.1 Introduction

Private interests and corporations are increasingly significant actors in environmental decision-making. Often possessing vast institutional and technical capacity, the private sector has an important role to play in "new" governance strategies such as public-private partnerships, private-social partnerships and collaboration (Holley, *et al.* 2012). Such new governance strategies are increasingly being employed to address complicated and intractable environmental problems (Ansell and Gash 2007; Lubell and Lippert 2011). This paper addresses a theoretical gap related to the nature of natural resource industry firm participation in collaborative approaches to water governance, and the potential consequences of that participation. The purpose is to examine the implications of major resource industry participation for watershed scale collaborative processes addressing water by revealing power dynamics.

Collaborative approaches to environmental problem solving are characterized differently in different disciplines from public administration (Sabatier, *et al.* 2005a) to collaborative planning (e.g., Innes and Booher 2010) to environmental management (e.g., Campbell, *et al.* 2011). Addressing commonalities across disciplines, collaboration can be characterized as the sharing of resources among interdependent actors to address problems that cannot be solved individually (Gray 1985). Collaborative processes addressing water are often, but not always, designed to be broadly inclusive of all actors with an interest in the issue at hand. Problem solving is typically based on respectful, often facilitated, deliberation and debate amongst actors who are treated as relative equals (Ansell and Gash 2007). Consideration of all interests is intended to allow joint learning and understanding to develop as actors commit to share knowledge and examine their own assumptions (Kallis, *et al.* 2009). Participants often strive for consensus or near-consensus (Emerson, *et al.* 2012). The decisions that result from collaboration are supposedly representative of different knowledge and information types, and are more implementable by virtue of being agreed to by the affected parties ahead of time (Lubell and Lippert 2011; Margerum 2008).

Collaboration that involves natural resource industry firms is complicated by overlapping social, political and economic variables operating at multiple scales. The current global economic system is based on capitalism and depends on the extraction and distribution of natural resources (Hessing, *et al.* 2005). This means that those countries possessing abundant resources are faced with the challenge of facilitating resource extraction to maintain economic growth while simultaneously protecting the environment. As a result, natural resource industries are typically privileged actors with respect to environmental decision-making (Falkner 2012; Fuchs 2007) – a position supported by this research. Environmental regulations in countries built upon resource economies often reflect a desire to enable resource extraction rather than to restrict it; this has created a legacy with lasting impacts on modern environmental regulations (Hessing, *et al.* 2005). Dependence on the economic benefits of resource extraction means that governments often favour resource industry interests in order to protect jobs, growth, royalties, and tax revenues (Falkner 2012). Collaborative governance models that are mediated by the state and depend on the relative equality of actors in contributing to, and accepting, solutions can be challenged by the presence of resource industry actors (Holley, *et al.* 2012).

Many collaborative processes take place at local or regional watershed scales, where diverse mixes of actors exist (Ansell and Gash 2007). This study specifically focused on watershed scale collaboration in the context of large, publically traded, natural resource industries. While systemic privileging of resource industries with respect to environmental policy is not restricted to publically traded companies, these companies are usually able to operate at scales far beyond the watershed level (Falkner 2008), and are primarily oriented toward generating profits of behalf of their shareholders (Levy and Newell 2005b). Firms are also motivated to undertake actions, such as collaboration, that legitimize their behaviour, bolster their reputation, and facilitate further profit maximization (MacDonald 2007). These characteristics have potentially important implications for local or regional collaborative processes.

Many of the ways in which privilege is expressed occur behind closed doors through lobbying or elite connections, or implicitly, through actions and decisions taken by governments (Fuchs 2007; Macdonald 2007). Hence, an analytical approach rooted in power theory was used to unpack the visible and invisible ways in which resource industries both shape, and are shaped by, collaborative processes and outcomes. This approach revealed that resource industries were able to shape collaboration, and the issues collaborated upon, at multiple analytical levels both internal and external to the collaborative process in ways usually not available to other actors. Analysis also revealed that resource industry participation in collaboration did not reflect a

commitment to engage in shared learning and the reexamination of values and interests as presupposed by collaborative theory.

The next section develops a conceptual framework based on power. The framework was used to guide two empirical case studies designed to investigate if, how, and in what ways, major natural resource industries affect collaboration for water problem solving occurring at regional scales. A comparative case study approach is outlined and results are presented, analyzed and discussed.

4.2 Power Theory, Collaboration and Natural Resource Industries

In presenting a conceptual framework for the analysis of resource industry firm involvement in collaborative approaches to water governance, a clear definition of "power" is required. This section establishes the definition used and presents relevant theory related to power and business involvement in environmental policy making. Table 4.1, iteratively constructed through both inductive and deductive insights (Bloor and Wood 2006), organizes this theory into a coherent framework that guided the data collection and analysis process.

Power can be defined in multiple ways and the interpretation best used depends upon study context (Haugaard and Clegg 2009). This study draws primarily on Lukes' (2005) three dimensions of power. Many other definitions and power frameworks exist, but Lukes' is particularly suited to researching policy contexts where power decides "what is known, what is emphasized and who prevails" (Zeitoun and Allan 2008:9). According to Lukes (2005:25), "*A exercises power over B when A affects B in a manner contrary to B's interests*". Power is not a discrete quantity but rather a multi-dimensional, fluid relationship between actors (Baldwin 1989; Lukes 2005).

The first dimension, instrumental power, focuses on overt, observable power, use of force and obvious resource imbalances (Fuchs 2007; Lukes 2005). In the context of collaboration, strategies such as intimidation, coercion and manipulation reflect the exertion of instrumental power (Culley and Hughey 2008). These influence strategies are easily observable and can often be effectively addressed through careful process design and facilitation (Innes and Booher 2003).

Structural power, Lukes' second dimension, reflects the ability to set and control policy-making agendas. It is concerned with who has influence over decision-making, control over conversations, and the ability to block issues from the policy arena by either making, or failing to make, decisions. Of fundamental concern are the socioeconomic and political contexts that define who is able to participate in decision-making (Bachrach and Baratz 1962; Lukes 2005). Structural

approaches highlight that conflicts of interest may never become visible if marginalized actors do not possess sufficient financial, technical or institutional resources to effectively defend their interests, or if they decline participation because they do not trust a given process to fairly and effectively address their interests (Gaventa 1980). Structural power may be a function of actions taken by actors to exert power, or of dominant ideological contexts that mean privileged actors often see their interests realized without a need to directly take action. As such, examining the second face of power seeks to bring hidden power to light (Fuchs 2007).

Under the capitalist socioeconomic institutional structure present in many nations, control over political agendas is profoundly shaped by the interdependence of business and government. Because of the dominant ideological and institutional contexts that legitimize the profit seeking interests of business, governments often privilege economic actors in pursuit of economic well-being (Falkner 2012; Macdonald 2007). Neoliberal trends toward decentralization enhance this privilege as governments increasingly rely on business and industry for essential baseline monitoring and reporting, mobilization of capital, and institutional resources (Gunningham 2009; Hessing, *et al.* 2005). Access to substantial financial resources means that economic actors can disproportionately fund influence strategies such lobbying, legal action, and scientific or policy research (Finger and Svarin 2012; Levy 2012). Social and institutional connections between business and political elites, and the existence of regulatory relationships between government agencies and industries, further enhance lobbying efforts (Falkner 2008; Macdonald 2007). Industries, or industry coalitions that are sufficiently influential, are able to set their own rules and standards in order to avoid or subvert government regulation (Auld and Gulbrandsen 2013; Clapp and Meckling 2013). Threats to relocate if faced with restrictive environmental regulations provide additional leverage (Newell 2012b). Combined, these factors present a challenge to the equitable representation and consensus pursued in collaboration.

Lukes' (2005) third dimension, characterized by discursive power, speaks to the ability of some actors to frame political contests by actively shaping societal values, norms and identities. This can take place through the reinforcement of specific values in the media and popular discourse, preferential use of value-laden language that favours specific, hegemonic ideals, and the requirement to use specific language to be viewed as legitimate (Pares 2011). Financial resources can enhance discursive influence because money enables access to the public consciousness through the purchase of media and advertising (Fuchs 2007). Dominant ideological conditions can also privilege some actors even absent direct action once hegemonic structures become entrenched. The exercise of this type of power can prevent some actors from recognizing

Table 4.1: A framework for the analysis of power in collaboration for water governance in the context of natural resource industry involvement

Key Parameter from Power Theory	Key Concern Related to Business Involvement in Environmental Policy Making	Specific Concern for Collaborative Water Governance
Instrumental Power: Behaviour, decision-making, key issues, observable conflict, subjective interests (seen as policy preferences revealed by political participation) (Lukes 2005:29)	Evidence of, or attention to, coercion, co-optation, diversion, manipulation, misinformation (Falkner 2008; Lindblom 1977; Newell 2005)	Coercion, co-optation, diversion, manipulation, misinformation
		Facilitation or bridging actors who mediate power
	Unbalanced resources (Falkner 2008; Fuchs 2007; Levy and Newell 2005a; Macdonald 2007)	Imbalance of financial resources
		Unequal capacities (technical, social, institutional, etc.) to participate
Structural Power: Decision-making and non decision-making, issues and potential issues, observable (overt or covert) conflict, subjective interests (seen as policy preferences or grievances) (Lukes 2005:29)	Influence over agenda setting and problem framing (Hessing et al; Guber and Bosso 2007)	Who instigated collaboration?
		Problem definition or framing and/or agenda setting
		Governments initiating token processes that exist to generate legitimacy instead of to influence decisions
		Inclusion or exclusion of important actor groups
	Knowledge production, control and use (Dür and De Bièvre 2007; Falkner 2008; Macdonald 2007; Levy 2012; Williams 2012)	Appropriate/inclusive use of knowledge
		Control over information production and use (Levy 2012)
	Preferential access to decision-makers (Falkner 2012; Fuchs 2007; MacDonald 2007)	Lobbying external to the collaborative process (Falkner 2012;
		Elite level relationships (Falkner 2012; Fuchs 2007)
	Constraints on actions and decisions broadly resulting from socio-political and economic factors (Falkner 2008; Fuchs 2007; Kraft and Kamieniecki 2007; Levy and Newell 2005a; Macdonald 2007)	Limits of consensus
		Decision making power residing with, or being retained by, the state
		The structural bias of capitalism or implications thereof
		Governments favouring specific interests
		Collaboration being influenced by external political contexts
Discursive Power:	Restrictions on participation or	Who is, or is not, favoured by the

Decision-making and control over political agenda (not necessarily through decisions), issues and potential issues, observable (overt or covert) and latent conflict, subjective and real interests (Lukes 2005:29)	allowable views as a result of discursive control (Kraft and Kamienecki; Falkner 2008; Torgerson 2005; Newell 2005)	dominant discourse
		Implications for consensus
		Efforts to control discourse
		Prescription of a "language" of collaboration
		Groups having to self-censor to participate
		Dominant, hegemonic themes or values related to capitalism influencing collaboration

that a given situation or outcome is contrary to their interests, thus preventing visible conflict from manifesting (Gaventa 1980).

Empirical study of discursive power can be challenging because it is often subversive. Researchers often use intensive discourse analysis methodologies that are beyond the scope of this study (e.g., Fairclough and Fairclough 2012). Nevertheless, it is possible to reveal some discursive issues through empirical analysis, as highlighted in Table 4.1.

In constructing Table 4.1, Lukes (2005) three dimensions of power were first used to provide structure (Column 1). Theory on business involvement in environmental policy making, power and political process was then used to identify potential ways that power is present or can be expressed in environmental policy making processes (Column 2). Column 3 represents integration of the theory present in Column 2 with theory on collaboration to determine a set of potential indicators for the identification of power in collaborative approaches to water governance.

4.3 Methods

Interpreting power is inherently subjective and dependent upon context (Flyvbjerg 1998a; Lukes 2005). A cross-case study approach, appropriate when understanding depends on context, was used to provide enough situated depth for power analysis, and to facilitate generalizability (Stake 2005; Yin 2009). Cases were selected, using criteria outlined below, in order to facilitate the examination of industry actions, roles and motivations as independent variables. This allowed the establishment of causal patterns and the development of study findings (Druckman 2005).

4.3.1 Cases

Two Canadian examples of collaboration addressing water were investigated: the Athabasca Watershed Council (AWC) in Northern Alberta, Canada (Figure 4.1), and the Thames-Sydenham and Region Source Protection Committee in Southwestern Ontario, Canada (Figure 4.2). Both cases represent state-led, collaborative processes organized at the watershed scale. This nested approach captured both state-level political and socioeconomic contexts, and on-the-ground analyses of power. Both cases are characterized by the active participation of both provincial government representatives, and of at least one major natural resource industry actor. State-led collaborative processes characterized by resource industry involvement are relatively common in other geographical settings (e.g., Baird, *et al.* 2014; Holley, *et al.* 2012; Sabatier et al. 2005) and application of these criteria allows increased generalizability. The two cases chosen are described below and summarized in Table 4.2.

4.3.1.1 Athabasca Watershed Council

The Athabasca River Watershed is home to diverse industrial interests, the most significant of which is oil sands development north of Fort McMurray, Alberta. Oil sands activity is extremely profitable but also highly controversial because of its vast environmental impacts (Jordaan 2012). Many of the companies operating in the oil sands have significant international reach and are regularly listed as some of the largest and most profitable in the world (e.g., Exxon Mobil, Chevron, BP) (Fortune Magazine 2013). The population of the Athabasca River watershed is largely concentrated upstream of oil sands activity. The downstream area is sparsely populated, mainly by Indigenous communities (Athabasca Watershed Council 2014).

The province of Alberta has been historically defined by the exploitation of natural resources and a neoliberal political economy. The province has faced significant domestic and international criticism for this political philosophy, particularly with respect to the facilitation and promotion of energy industry activities (Clancy 2014b; Cohen and Bakker 2014; Smith and Barr 1984). In 2003, the Alberta *Water For Life* strategy mandated the creation of collaborative bodies known as Watershed Planning and Advisory Councils (WPACs). *Water For Life* (2003:7) established goals of achieving "safe, secure drinking water; healthy aquatic ecosystems; and, reliable, quality water supplies for a sustainable economy". The Government of Alberta assigned multi-actor WPACs the task of characterizing watershed health through State of the Watershed Reports, producing non-regulatory Watershed Management Plans, and fostering public

Table 4.2:   Case study characteristics

	Thames-Sydenham and Region Source Protection Committee[1]	Athabasca Watershed Council[2]
Major Basins	Upper Thames River Watershed, Lower Thames River Watershed, Sydenham River Watershed including Canadian portions of the St. Clair River Watershed	Athabasca River Watershed
Size	10,826 km[1]	159,000 km[2]
Regional population (All data from the 2001 census)	107,000 (Lower Thames), 472,000 (Upper Thames), 167,000 (Sydenham and St. Clair)	152,097
Primary regional resource industry activity	Agriculture, petrochemical, oil and gas	Oil and gas, forestry, pulp and paper, agriculture, coal mining, sand and gravel extraction
Provincial policy on collaboration	*Clean Water Act* (2006)	*Water For Life* (2003)
Committee milestones	Appointed in 2007, Declaration of Guiding Principles, Mission Statement and Terms of Reference in 2008	Appointed in 2009, Declaration of Terms of Reference in 2009
Size and composition of collaborative group	1 Chair, 7 municipal government, 7 business and industry, 7 "other", 3 non-voting government liaisons, 3 First Nations	1 past-president, 3 municipal government, 3 non-government, 3 industry, 3 Aboriginal, 3 other
Output to date	Terms of Reference 3 State of the Watershed Report phases (1 of which has been withheld)	Terms of Reference 3 Technical Assessment and Vulnerability Reports Draft Source Water Protection Plan
Decision-making format	Consensus focused	Consensus focused

[1]Thames-Sydenham Source Protection Region. (n.d.). Retrieved December 16, 2014, from http://www.sourcewaterprotection.on.ca
[2]Athabasca Watershed Council. (n.d.). Retrieved December 16, 2014, from http://www.awc-wpac.ca

engagement and education (Alberta Environment 2005). Some broad guidelines were provided

for the process (Alberta Environment 2008a; Alberta Water Council 2008b). Although WPACs

are advisory in nature, the Government of Alberta formally acknowledges a responsibility to "review and take into consideration the recommendations put forward in a water management plan" (Alberta Environment 2005:10).

WPACs were intended to be broadly representative of watershed interests including government, non-governmental organizations, industry, Indigenous actors and other civil society representatives. They meet the general criteria for collaborative governance outlined above, including a focus on consensus, broad inclusion, deliberation, shared knowledge, emergent learning, and pooling of resources (Alberta Water Council 2008c). The AWC is one of 11 WPACs in the province.

Figure 4.1:   Athabasca River Watershed, Alberta, Canada
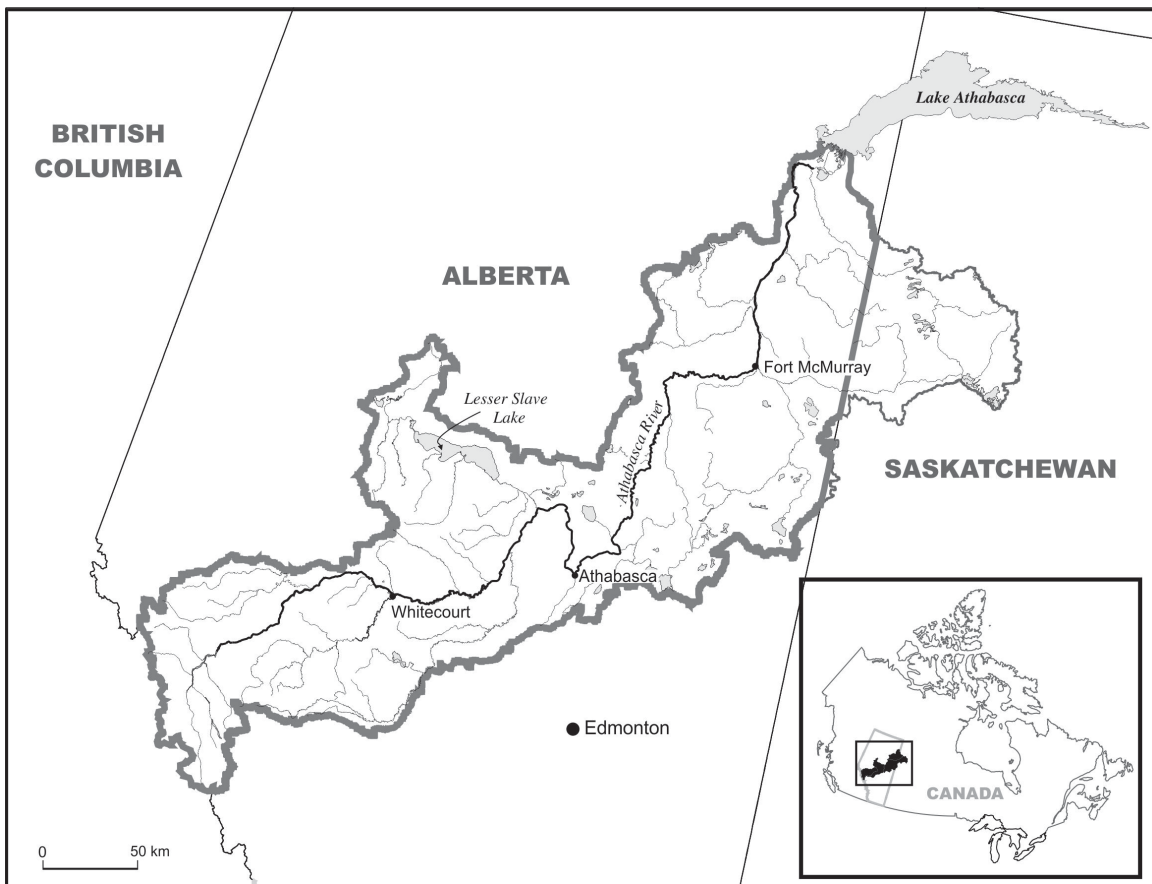
4.3.1.2   Thames-Sydenham Source Protection Committee

The Thames-Sydenham and Region Source Protection Committee operates in a region that is largely agricultural, but is also home to several population centres, and an intensive concentration

Figure 4.2:   Thames Sydenham and Region Source Protection Region, Ontario, Canada
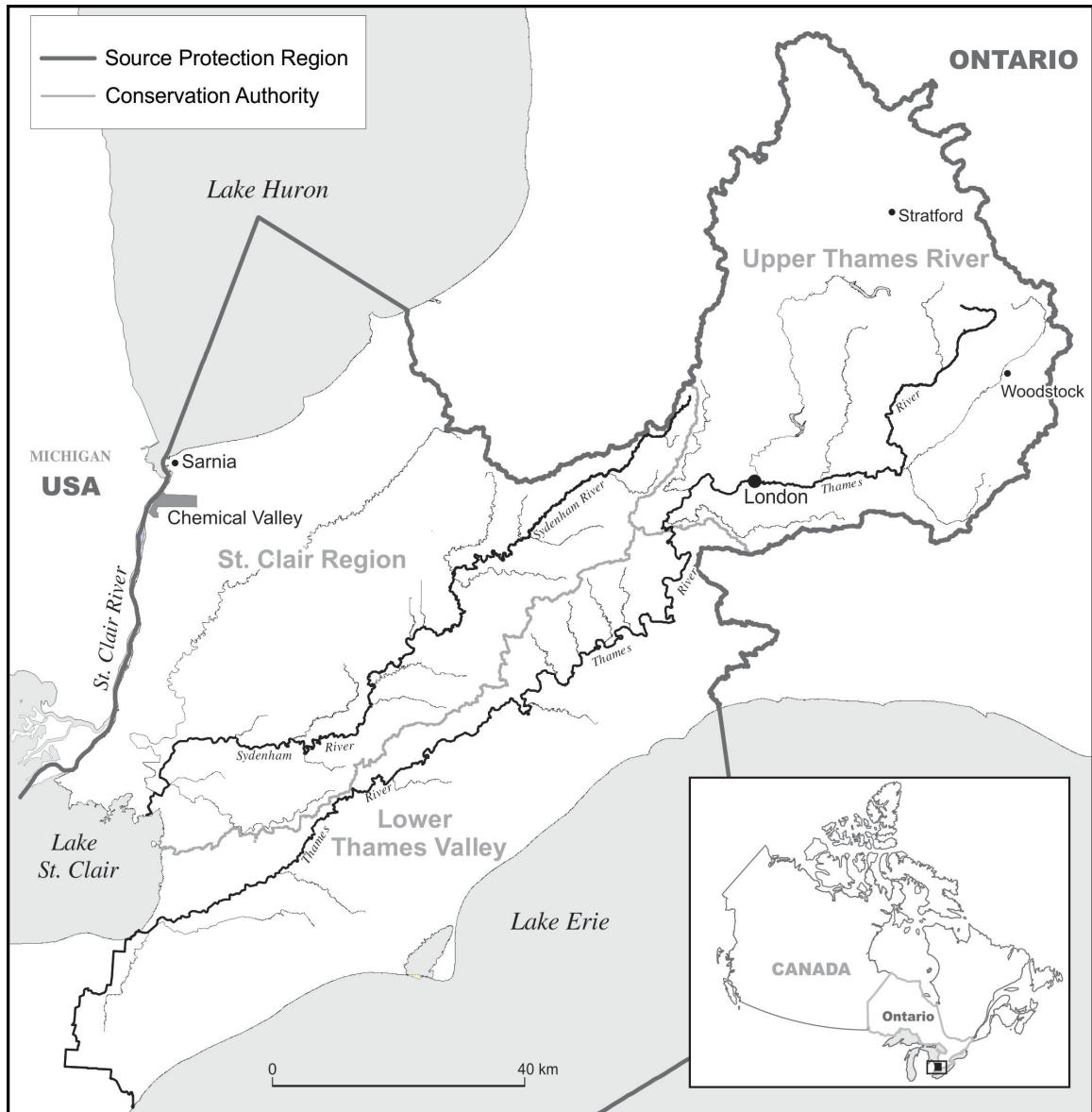
of petrochemical industries in Sarnia, Ontario. This area is informally known as "Chemical Valley" and is an ongoing area of significant environmental concern (International Joint Commission 2006; Luginaah, *et al.* 2010). Petrochemical industries in Ontario are heavily regulated; nonetheless, serious, well-documented problems with regulatory enforcement and compliance exist (Environmental SWAT Team 2005). The severity of regulation and enforcement has historically reflected the political ideology of the ruling political party. These parties have been, by turns, right, centrist and left with left leaning parties tending to be more

enthusiastic with respect to environmental regulation (Winfield 2012). The ruling party presiding over collaboration examined in this paper is a centrist Liberal government.

The Thames-Sydenham Source Protection Committee is one of 19 Source Protection Committees created under the (2006) Ontario *Clean Water Act (CWA).* This legislation was enacted as a response to an inquiry into thousands of illnesses and 7 deaths in 2000 resulting from contamination of a public water supply in Walkerton, Ontario (O'Connor 2002a). Following the inquiry, the provincial government convened expert committees to provide recommendations on how collaboratively developed, watershed scale Source Protection Plans could be created to contribute to the safety of drinking water supplies (Government of Ontario 2004; Ontario 2004). Pre-existing, watershed-based Conservation Authorities led the collaborative processes. All Source Protection Committees were required by the *CWA* to establish rules of procedure to be approved by the lead Conservation Authority in their region. These rules reflected best practices identified in theory on collaboration and include consensus-focus and deliberation with an emphasis on knowledge sharing and learning (Thames-Sydenham and Region Source Protection Committee 2008). Collaboration was intended to be broadly inclusive of commercial, industrial, agricultural, municipal, civil, provincial and Indigenous actors. Committees were required to produce Terms of Reference, assess and map threats and vulnerability of municipal drinking waters supplies, and develop Source Protection Plans to be submitted to the Minister of Environment, run through an approvals process, and eventually signed into law (Government of Ontario 2006).

4.3.2   Data Collection and Analysis

Data were collected between July 2013 and December 2014 using document analysis, personal observations and semi-structured interviews. Documents were collected from a wide range of sources for analysis. The 92 documents analyzed included collaborative group policy documents and technical reports, educational materials, websites, draft and final watershed plans, government policy documents, government publications, policy intervention records, records of interpersonal communications, email records forwarded by interviewees, relevant media articles, and industry technical, policy and promotional materials. Observations were gathered at two board meetings and during interviews and site visits.

Interviewees were recruited through purposeful and snowball sampling techniques. Forty-one participants were drawn from municipal and provincial government, collaborative group staff and participants, industry, and individuals with relevant insights on the collaborative process. In

Ontario, 12 interviews addressed the local level and nine addressed the provincial level. In Alberta, 10 interviewees addressed the local level and 10 addressed the provincial level. In both cases, interviewees at the provincial scale were often involved with or well informed of activities at the local scale, and vice versa.

The conceptual framework (Table 4.1) was used to guide development of interview questions in order to investigate the consequences of resource industry involvement in collaborative processes for water governance. For example, interviewees were asked if they felt that all relevant topics were "on the table" in the collaborative process. Interview results highlighted issues of agenda setting, control over discourse, information control, intimidation and elite access.

Data collection was initiated using deductive insights from theory. Throughout the process, analytic induction was used to iteratively refine the conceptual framework and interview questions by incorporating inductive findings (Bloor and Wood 2006). Throughout interviews, participants were encouraged to address any issues they thought relevant to the study and its objectives. This was done in order to address bias built into the framework and interviewer worldview. Following verbatim transcription, interview transcripts were returned to interviewees for clarification and validation (Carlson 2010). Where required, follow-up interviews were used for clarification or further investigation.

QSR NVivo 10 was used to code and analyze all observations, documents and interview transcripts. Data collection was guided by the major themes identified in the conceptual framework. Resulting data were then analyzed using open coding followed by several round of axial coding in order to identify patterns, emergent themes, and relationships (Strauss and Corbin 1998). The resultant data set reflects a combination of both deductive and inductive findings. Validity and subject saturation were determined using triangulation among the three data sources (Yin 2009).

4.4 Results

Findings are organized around themes of access to decision-makers; resources and capacity; industry motivations for participation; and, the impact of collaboration on industry and their commitment to the process. These themes emerged inductively through the coding process and reveal the most significant ways that resource interests both shape, and are shaped by, participation in collaborative processes. Where quotations are used, codes identify individuals in order to ensure confidentiality. Key results are summarized at the end of the section.

4.4.1   Access to decision-makers

The means available to actors to pursue their policy goals outside of collaboration were investigated in order to determine the potential for influence on both agenda setting and on ultimate outcomes. In both Ontario and Alberta, the resource industries present in the Oil Sands and in Chemical Valley have strong working relationships with government departments because they are heavily regulated entities and are often legally entitled to consultation on water issues (e.g., Province of Alberta 2000a; Province of Ontario 2001). These relationships both enable the exertion of power by industry, and demonstrate structural relationships whereby governments often act in the interests of industry even absent specific industry actions. Government and industry interviewees in both provinces highlighted the existing lobbying activities of firms at multiple levels, and use of elite level access to exert pressure on government in ways that are not usually available to civil or environmental actors. To illustrate, an Ontario government official, in reference to the *CWA,* noted that,

> you're going to jump a little higher, and a little faster, and a little farther when some
> industry association comes pounding on the Minister's door saying, 'What the hell?'
> As opposed to three members of the public that show up, and as much as they might
> be impacted, [the three members of the public] might be impacted even more (ON4)

Similarly, all interviewees in Alberta, except those in the energy sector and one government actor, identified the long-standing preferential access to policy makers that is available to resource industries. Illustrating this perspective, a watershed level interviewee, referring to the WPAC process, stated that,

> They don't have to work here at this level. They just go the back door, straight through
> the cocktail party shmooze circuit. And they talk to all the decision makers at [that]
> level. They don't need to function down here with us, the great unwashed. There's
> always been this open door policy to corporate power (AB16)

All government interviewees in both cases suggested that government will almost always favour big industries over smaller civil or public actors in the Athabasca watershed whether the issues in question are subject to collaboration or not.

In contrast, avenues of influence for civil society interviewees engaged in collaborative water governance processes were much more limited. In Alberta, three interviewees referred to media pressure as the most effective way to address their concerns and discussed using media

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pressure to motivate provincial action on a recent mine tailings pond breach in the watershed despite their concurrent positions on the AWC (The Canadian Press 2014). One government interviewee noted that, "the strongest advocates of Alberta are often the most poorly resourced to really do a job of effective management. So they may be limited to providing that critical commentary – the media pressure" (AB20). In Ontario, civil society interviewees explained that they relied on writing letters to Ministers or trying to lobby through environmental groups. One provincial government interviewee in Ontario (ON4) noted that collaboration may have "leveled the playing field" a little bit by granting more people direct access to government employees and policy advisors who regularly attended Source Protection Committee meetings.

4.4.2 Technical, financial and institutional capacity

Issues of capacity in the context of collaboration were most likely to play out with respect to differences between individual collaborative actors at the watershed scale rather than at the provincial level. Differences in financial capacity amongst actors are usually relatively easy to assess. Related issues of technical and institutional capacity can be less obvious. In Ontario, the Source Water Protection process was designed to level in-process imbalances in financial and technical capacity, especially as related to poorly resourced citizens as opposed to actors backed by organizational resources. For example, board members received honoraria to subsidize participation at meetings and there were significant efforts to provide education on technical issues and present technical information in plain language formats (Ontario Ministry of the Environment 2009). This enabled these members to make more substantive contributions to the final policy plans. However, interviewees without technical expertise still expressed reservations about capacity.

In Alberta, board member participation was also subsidized (Alberta Water Council 2008b) but there was less focus on the technical training of participants. Resource imbalances were prominent and contentious and resulted in a process that was marked by tension and overt conflict. As a result, power issues within the collaborative process, rather than in the context of integrating general collaborative group output into provincial policy, became a significant focus. Interviewees from across all sectors, and personal observations during meetings attended, indicated that better resourced actors were able to exert instrumental power in this setting in ways that facilitated representation of their interests in developing watershed management plans. This was often directly attributed to financial resources. For instance, interviewees referred to the fact that organized interests are paid to be there: "they're working for Suncor or Alpac or whatever and they're getting a big salary …and then you've got volunteers like us who are on our own time

and we have very little resources backing us up" (AB10). In another example demonstrative of technical capacity, participation at a technical committee meeting directing State of the Watershed reporting – the information used to inform watershed management plans – included two resource industry representatives, a staff member, and a civil society member with limited technical knowledge. Clear imbalances in facility with technical content were present. This is especially important given that discussion addressed the scientific data to be included in the reports, as well as what industry considered to be an inappropriate "anti-industry" tone in information presented to date.

Interviews and observations in Alberta also revealed structural and discursive power issues internal to the collaborative process related to implicit restrictions on knowledge use and conversation. This has consequences for ultimate WPAC outputs since actors finding their interests restricted are less able to ensure that ultimate policy plans represent their interests. An industry interviewee acknowledged this concern: "they'll hear the science and right away think, well, I'm not a scientist and I didn't go to college or university so I'm not going to participate in this part of the conversation" (AB15). A civil society interviewee explained that sometimes those lacking technical knowledge are "intimidated by some of the group. Not intentional intimidation, just the way it is" (AB11).

Knowledge and information in the Athabasca watershed were generally contested, sometimes aggressively. One interviewee, in reference to the oil sands, noted that "there is always a lot of [industry] influence on information production and sharing" (AB12). Interviews and email records directly addressing the Athabasca WPAC identified perceived bias in technical information and reporting as being pro-environment (from five interviewees), and, at the same time, pro-energy industry (from another five interviewees).

There were also perceptions that not all information control within the Athabasca WPAC was implicit or unintentional. Three interviewees, in claims corroborated by records of email conversations between board members, referred to the use of coercive or discursive "intimidation tactics" on the part of industry or pro-industry interests to control the release of information. These same sources revealed concerns over information control in the AWC State of the Watershed Reports, referenced above. People who identified this issue pointed to industry concerns over perceived pro-environment bias in the reports. Industry interviewees confirmed that they viewed the tone of the reports as problematic. In another example, staff members prepared technical fact sheets for a number of water quality issues in the basin but were not permitted to release all of them. Four interviewees noted that industry tried to control the release

of this and other information because otherwise "[the public] will get ideas" (AB18). At the time of writing, the AWC's State of the Watershed Phase 3 had been completed but not yet posted by the AWC staff on their website because of conflict related to perceived bias and information control. If power in its first dimension is identified as "who prevails", the delayed release of the State of the Watershed report indicates that those industry actors interested in controlling information have, at least so far, succeeded in exerting instrumental power.

Capacity issues in Alberta were also inductively linked to geographic and demographic factors specific to the Athabasca Watershed. According to seven interviewees, the differences in capacity and resources between the energy industry and the dispersed and traditionally marginalized First Nations populations downstream of the oil sands strongly affects the nature of collaboration in the basin, and the ability of collaborative plans to effectively represent the interests of all actors. Interviewees and documents indicated that WPACs operating in watersheds where capacity levels are more balanced have been able to work more effectively to produce watershed plans with significantly less conflict (e.g., North Saskatchewan Watershed Alliance 2012). These issues did not inductively emerge in analysis of the Thames-Sydenham group but may be present if specifically investigated.

4.4.3   Industry motivations for participation

The motivations for industry participation in collaboration were investigated to determine if any power imbalances present would necessarily be detrimental to the achievement of collaborative process goals. In Ontario, interviews, records of policy interventions into the development of the *CWA*, and personal observations, indicated that the driving motivations for resource industry participation were overwhelmingly defensive (e.g., Legislative Assembly of Ontario 2006). Six interviewees cited the protection of business interests, and prevention of restrictions on industrial growth, development and expansion as the main motivators of industry. According to one industry interviewee, "I didn't want to see an overly restrictive regime of regulation or policies put in place that would hamper development" (ON18). Opportunities to gather information, to get ahead of the game, to build relationships with other actors in a non-confrontational setting, and to ensure that industry was fairly represented were also cited by industry and government interviewees as important motivations. Two industry interviewees, and industry reports and promotional materials, identified maintenance of a social license to operate, and a corporate ethos of social responsibility, as further motivations (Sarnia Lambton Environmental Association 2011).

In Alberta, seven interviewees asserted that industry participated to protect their interests, to defend the status quo, to minimize costs and to prevent restrictions on development. Seven interviewees, as well as meeting notes, also referenced the pursuit and maintenance of a social license to operate. One industry interviewee remarked on positive returns from being able to use the AWC logo in firm sustainability materials (AB15). He also noted that the company gets more out of participation in the AWC than the AWC does out of the company. Two interviewees referred to collaboration as an opportunity to gather information and get ahead of the game in pursuing policy goals outside of the WPAC. Three industry interviewees viewed collaboration as a chance to influence and teach other stakeholders, and to correct misinformation regarding the highly controversial oil sands region: "for those with a limited technical capacity, you're teaching them – teaching is a strong word, that's not even the right word – but you're helping them to understand the basis for whatever the issue is" (AB17). Three interviewees also indicated that industry appreciates the chance to build relationships with other actors, and to engage with environmental non-governmental organizations in a less hostile forum.

The non-regulatory nature of the Alberta WPAC process did lead eight interviewees to focus on the challenges presented by a collaborative process depending solely on the buy-in of involved actors. All industry interviewees emphasized that it would be much easier to justify the expenditure of resources for a real commitment to collaboration to shareholders if participation was legislated, or if collaboration had the potential to threaten their business. Five Alberta interviewees highlighted that a process with more potential impact would draw people with the power to actually make decisions.

4.4.4 Industry impact and commitment to collaboration

The impact of collaboration on industry operations was examined to determine if powerful actors were fully committing to the collaborative process. Another function of this query was to assess the degree to which it may be assumed that collaboratively-made policy recommendations or decisions would impact industry operations or profitability. In the Thames-Sydenham Source Protection Region, collaboration has had little impact on resource industry operations. The restriction of collaboration to only municipal source water protection meant that major resource industries were largely defined out of the process because most industrial activities are not located within municipal water intake zones. The exception to this includes several municipal intakes on the Great Lakes. In these cases, the province provided special instructions for Great Lakes intakes that precluded the use of regulatory prohibitions by committees. All Ontario industry interviewees, and four other government and staff interviewees, emphasized that Source

Water Protection has not imposed anything on industry that is more restrictive than the regulatory regime already in place: "we would have [had meetings with Ministers] if the stakes were higher and it would have had a more direct influence on our industry" (ON10). When asked about industry's response to potentially restrictive regulations resulting from the Clean Water Act, an industry interviewee responded, "force us to do it and we'll leave. And that's the way all industry is now because there's so little industry left in Ontario" (ON17). A provincial government interviewee further reinforced this position, and the type of structural power highlighted above: "[these industries are] recalcitrant, don't work with the government, generally a subsidiary of a US conglomerate, could care less about the political climate. They've basically got us over a barrel, and collaboration with them? Not going to happen" (ON14).

In Alberta, there was recognition from six government and industry interviewees that industry does not need to participate in collaboration because processes are unable to impose anything that will significantly alter or affect industry operations. Six government and industry actors made reference to the fact that industry does not need to be there. For example,

> they don't need to be at the table of the WPAC. They can go straight to the province based on the fact that they've got agreements that give them permission to do that. If they are at the table it's because it's at their discretion. They choose to be, they appreciate the social license they get by being there because they're together with other groups and they're showing up as being constructive, maybe being restorative, being supportive of progressive change and that's helpful to them. (AB13)

Coding for emergent themes also identified the importance of the degree to which industry representatives in collaborative processes were able to actually impact the decisions and operations of the corporations they were representing. In Ontario, two government interviewees noted that major corporations often send representatives from their public relations or sustainability departments who do not have any influence on decision-making:

> It might be a public relations matter of, 'Send Bill because Bill can manage these people and make them go away.' The CAO may never know that the corporations bought into this collaborative governing structure and that there's a public expectation. (ON14)

Furthermore, when individuals are sent to represent a sector, there is no guarantee that they are important, or accountable, to their sector. For example, 19 major industry interests in Chemical Valley (Figure 4.2) participate together through a single industry association, the Sarnia Lambton

Table 4.3   Key results organized according to case and emergent theme

	Case	
	Ontario	Alberta
Access to decision-makers	• Evidence of preferential elite level access and industry lobbying • Structural bias of the province toward industry interests	• Evidence of preferential elite level access • Structural bias of the province toward energy industry interests
Technical, financial and institutional capacity	• Process design, honoraria and facilitation were used to promote equitable interaction • Education on technical issues partly addressed issues of technical capacity	• Significant resource imbalances resulted in a conflict laden setting at the watershed scale • Participation was restricted due to technical knowledge constraints • There was apparent coercive control over the release of information perceived as biased
Industry motivations for participation	• Resource industries are motivated to participate in collaboration to protect their business interests, prevent restrictions on growth, get ahead of the game, build relationships, ensure industry is fairly represented, and to maintain a social license to operate	• Resource industries are motivated to participate in collaboration to protect their interests, defend the status quo, minimize costs, prevent restrictions on growth, build relationships, gather information, get ahead of the game, and influence other stakeholders • Motivation to participate is negatively affected by the voluntary nature of the WPAC process
Industry impact and commitment to collaboration	• Most major resource industries were defined out of the process in the Thames-Sydenham Region and the province more broadly • Government and industry both acknowledge structural barriers to creating restrictive regulations • Industries are not committing people with decision-making capacity as collaborative group participants • Industry is willing to commit resources to collaboration but has not demonstrated a commitment to change practices based on collaboration	• Industry does not need to participate in collaboration because WPACs lack the strength to require changes • Industries are not committing people with decision-making capacity as collaborative group participants • Industry is willing to commit resources to collaboration but has not demonstrated a commitment to change practices based on collaboration. Majority privately-owned companies may be an exception to this trend

Environmental Association (Sarnia Lambton Environmental Association 2013). One staff interviewee noted that Chemical Valley companies participate through a single representative but that the individual firms often have different interests and it is therefore difficult for one person to speak for all of industry.

In Alberta, six interviewees from government and industry similarly noted that industry representatives do not have the authority to make decisions for their entire sector. This also arose with respect to representatives of large corporations, especially, as pointed out by two industry and two other interviewees, where industry representatives are expected to toe the company line:

> they send the lowest common denominator person to sit at the table and just be there
> as a presence to say, "Well, we were there." But there's no decision-making power,
> there's no real traction with moving forward. They're there in body, but not in spirit
> and in commitment. (AB16)

Industry promotional, technical and sustainability reporting documents refer to the financial, scientific and technical contributions they make to collaboration but do not make any reference to the two-way relationship expected from collaboration as defined above (e.g., Alberta Newsprint Company 2014; Sarnia Lambton Environmental Association 2011). The exception to this was Suncor Energy Inc. (2014:26), a participant in the AWC and in the Thames-Sydenham through the Sarnia Lambton Environmental Association. One of their Sustainability Reports outlines that, "Collaboration is central to our community investment strategy. We are here to connect and support, as well as learn from, our partners". However, the Suncor documents that identify the AWC only reference one way involvement such as input onto the AWC Science Technical Committee or financial support (e.g., Suncor Energy Inc. 2012). There was more evidence of collaborative representatives engaging from a position of real commitment when the industry present was not legally bound by the need to satisfy shareholder demands and to ensure profitability (e.g., Alberta Newsprint Company 2014).

4.5 Cross Case Analysis and Discussion

This section compares and analyzes findings from the cases in order to illuminate the different issues affecting, and affected by, resource industry participation in collaboration for water governance at watershed scales. Two main categories of findings emerged. The first examines how power plays out as resource industries participate in collaboration, with a specific focus on the way that scale shapes power dynamics in watershed-based collaboration. The second category identifies the consequences of resource industry participation for collaborative processes and the achievement of desired outcomes.

4.5.1   Power and the ability to influence

Results in both cases indicated clear differences in the scales at which actors were able to exert influence. Investigation into potential avenues of influence in both cases revealed that the resource industry firms involved possess established, preferential access to political decision makers. Collaboration is undermined if well organized and connected actors such as industry are able to preferentially influence high level decisions such as the definition of the problem to be collaborated upon, or the final policy decision, through avenues outside of the collaborative process (Parkins 2010; Williams 2012). When decisions are made at elite levels, they are much more likely to reflect privileged positions because they are not subject to public scrutiny (Fuchs 2007).

Power theory highlights the physical or effective exclusion of actors from the decision-making process. Potential conflicts may not be realized because those concerned do not have an effective voice, perpetuating existing power structures (Gaventa 1980). In Ontario, the exclusion of some actors with potentially relevant voices at the watershed scale has been examined and problematized by others (Baird, *et al.* 2014; Canadian Environmental Law Asssociation 2004; Hania 2013). The collaborative problem frame in Ontario, established ahead of time by the province, also meant that most major natural resource industries in Ontario were not affected, thus defining out many industrial actors and conflict-laden issues related to source water protection. In effect, there was no need for industry to attempt to exert power within the collaborative process because, through dynamics identified by Bachrach and Baratz (1962), effective participation in decisions and non-decisions prior to collaboration upheld the traditionally privileged position of industry. A lack of obvious conflict in the Thames-Sydenham case clearly does not indicate that Source Water Protection was uncontested, but rather suggests that influence was exerted out of the public eye and conflicts of interest remained invisible.

Agenda definition in Alberta, in contrast to Ontario, occurred partially at the watershed scale. Significant visible conflict and influence at this level reflected both a lack of facilitation, and significant resource imbalances among participants. The ability to mobilize resources is integral in determining who will prevail in contested settings (Clancy 2014a). In both provinces, resource industries possessed greater technical, financial and institutional capacity than other actors and were able to bring those resources to bear both inside and outside of collaborative processes. Both collaborative groups attempted to address barriers to participation by providing financial compensation for participants. However, equity with respect to technical and institutional resources, and the connections backing actors participating on behalf of industries or

well-organized interests, cannot be (Clancy 2014a), and were not (Baird, *et al.* 2014; Hania 2013), addressed at the watershed scale in either case.

In Alberta, it was obvious that the unequal distribution of technical and institutional resources, and the lack of attention to this, prevented some actors from being able to effectively participate or defend their interests. This included the ability to engage in, or resist, both implicit and explicit attempts to control information. Exertion of power over information reflects contested views of the knowledge used to inform WPAC plans and documents, thus shaping public perceptions and eventual policies in the interests of those with greater capacity (Williams 2012). Differences in capacity arose far less frequently in Ontario, despite the fact that capacity issues have been identified in other studies examining Source Water Protection (e.g., Baird, *et al.* 2014; Hania 2013). This reflects the fact that issues with a significant impact on industry actors were defined out through problem pre-definition. In such situations, these issues are not subject to contestation within the process itself (Parkins 2010), as they were in Alberta.

Major natural resource industries that are able to mobilize resources to influence at higher scales also have the ability to work outside of the process as collaborative groups develop and implement solutions. Consensus or collaboratively made decisions mean little if some actors are able to undermine the process by also either actively or passively exerting influence to shape ultimate outcomes (Emerson, *et al.* 2012; Pares 2011; Parkins 2010). Neither the Thames-Sydenham Source Protection Committee nor the AWC have yet attempted to implement plans and it is thus too early to effectively assess if or how this is happening. However, Clare *et al* (2013) document attempts to build a Wetlands Policy in Alberta through collaboration and consensus that were undermined at the last minute by powerful energy sector interests through elite level connections. It is therefore prudent to consider this possibility for the collaborative processes examined in this study.

4.5.2   Consequences of resource industry participation

Industry did not *need* to participate in collaboration in either province. Despite this, their voluntary presence in both contexts indicates that they were able to identify benefits to participation that justify the expenditure of resources on collaboration. In the cases examined, collaboration represented an opportunity for resource industries to proactively defend their interests. It was a chance to build social license and legitimacy, and to influence information and knowledge (Gunningham 2009). Collaboration in both cases was thus viewed by industry largely as a public relations exercise, not, as collaborative theory would propose, as a credible

commitment to reexamine assumptions and share learning in pursuit of improved environmental outcomes (e.g., Innes and Booher 2003; Kallis, *et al.* 2009).

According to power theory, the actions of a given actor will be more readily accepted if that actor occupies a position viewed as legitimate (Beetham 2013; Clegg 1989; Lukes 2005). The increasingly integral role of industries with respect to state functioning already means that the authority of industry is becoming more widely accepted, especially with respect to information production and self-regulation (Falkner 2012). The facilitation of industry participation in collaboration by government, and the actions taken by industry with respect to collaboration in the cases examined thus served to further increase the discursive power of industry. In Ontario, the relatively passive participation of industry in collaboration directly helped to establish legitimacy because it contributed to perception of industry as a community player (Austin and Seitanidi 2012) and a sense that industry was playing by the rules (Beetham 2009). In Alberta, legitimacy building efforts were not necessarily directed towards the Athabasca WPAC, where the process was contested and vitriolic, but instead toward broader company shareholders. This is reflected in comments made by an industry interviewee about the benefits his company receives from being able to use the AWC logo (AB5). In both cases, the effect is even greater influence over public perceptions and values, and enhancement of the ability of industry to pursue policy goals in contested settings. This is entirely antithetical to collaborative governance theory that emphasizes the emancipatory, equalizing effects of collaboration.

Theory on collaboration often emphasizes potential benefits related to shared knowledge and learning (Ansell and Gash 2007; Innes and Booher 2003). Achieving these benefits requires that actors have the capacity to change their perspectives based on their evolving knowledge and understanding. When corporations send representatives to collaborative groups who are unable to concomitantly influence industry or group operations, as was the situation in both cases, many of the potential relationship building, shared learning and problem solving benefits of collaboration are lost.

4.6 Conclusion

Findings from both provinces indicated that resource industries were able to exert direct influence on government policy makers through existing elite level relationships and lobbying activities outside of the collaborative forum. Furthermore, they were able to do so in ways that were not necessarily available to environmental or civil actors. This runs directly counter to the power balancing ideals of collaborative theory (e.g., Ansell and Gash 2007). Industry privilege was

strengthened by the fact that the governments of both provinces operate from positions defined by obligations to ensure the profitability of industry, often at the expense of better environmental policies and outcomes (as per Falkner 2012). Findings indicated that collaboration did not address water issues in ways that industry viewed as significant or threatening to their operations. Collaboration is thus not changing the way that water policy decisions with potentially significant impacts for natural resource industries are made.

In both Ontario and Alberta, there was no need for industry to participate in collaboration. Consistent with research that identifies the integral role of business and industry to the political economy of governments, the resource industries in question possessed structural power that allowed elite level access to policy makers, the mobilization of significant financial, technical and institutional resources, and some degree of control over information production and use relative to collaboration (as in Falkner 2012; Fuchs 2007; Williams 2012). Large, corporate resource industries are able to exert significant influence at scales from the local to global, including at the watershed and provincial scales examined in this study. While local civil and environmental actors are able to mobilize to exert influence at higher scales, these instances are the exception rather than the rule (Fuchs 2007) and did not appear prominently in the cases studied.

Effective participation in collaboration for water governance, as here defined, depends upon a genuine commitment to the principles of mutual acceptance of problem definition, shared learning, and examination of assumptions that are presupposed by theory (Ansell and Gash 2007; Innes and Booher 2003; Kallis, *et al.* 2009). In processes where major corporate natural resource industries are active participants, it is unclear whose interests collaboration is serving. If the end goal of collaboration is better, more legitimate, social and environmental outcomes, then the pursuit of time and resource intensive collaborative processes that have little ability to influence the scale at which important decisions are made is problematic.

Collaboration in situations of significant power imbalances has been identified as unlikely to succeed by other scholars (Holley, *et al.* 2012; Lubell and Lippert 2011). This study goes further to indicate that collaboration in such situations, in addition to failing to achieve better social and environmental outcomes than traditional command-and-control models, may also be exacerbating the very conditions they are designed to address. In the Athabasca River Watershed, where power imbalances are extreme and agenda definition did not define out powerful interests as it did in Ontario, it is unsurprising that the collaborative process has been marked by significant conflict. Collaboration in such circumstances should only be undertaken with a careful

eye toward the exercise of influence both within and external to the collaborative process, if it is undertaken at all.

Using power theory to examine the impacts of natural resource industries on collaborative processes reveals a number of pathways and methods of influence that are not immediately visible because of their subversive nature. Some of these pathways only become visible when political and socioeconomic contexts are examined at provincial, federal or international scales. Others pathways require delving into the factors shaping cultural ideals and values. In most cases, power is more "powerful" when practiced in secret (Fuchs 2007). By engaging in power analyses, scholars are able to reveal power, expose it to scrutiny, and potentially lessen the degree to which privileged actors are able to dominate environmental policy making processes.

Chapter 5

Conclusion

Research findings have thus far been presented as a collection of individual research manuscripts. The goal of this chapter is to synthesize the overall significant, original contribution to knowledge made through this research. The study purpose and objectives are first reviewed. Salient findings from the previous three chapters are then presented and synthesized into a set of broad, overarching conclusions related to the involvement of natural resource industry firms in collaboration for water governance as assessed using a power-based approach. Significant, original, and interesting contributions to knowledge are then summarized. These are followed by findings and recommendations relevant to collaborative water governance participants and practitioners. The chapter concludes with a review of the limitations of the study and a proposal for potential areas of future research.

5.1 Purpose and Objectives

The purpose of this research was to critically examine the roles of the state and industry in collaborative water governance processes through a power lens. Research emphasized the ways in which interrelationships between these two key actors impact collaborative processes and outcomes, and the overall feasibility of using collaboration in water policy-making contexts where industry is a critical player. A systematic review was first used to establish the existence of, and map out, a gap in academic thought related to the application of theory on power to collaboration for water governance. Two empirical cases were then used to gain insights into the implications of resource industry firm involvement in collaboration through a power lens.

The study pursued four specific objectives:

1. To draw on existing literature to create a conceptual framework for examining power and its implications for collaborative approaches to water governance;
2. To apply the framework developed in Objective One to determine the extent to which relationships of power are explicitly or implicitly identified and addressed in literature on collaborative approaches to water governance;

3. Building upon findings from Objective Two, to empirically examine the positions of the state and industry in Canada with respect to power in collaboration for water governance, and;

4. To determine if, or under which conditions, as revealed by analysis grounded in power theory, collaborative approaches to governance for water can achieve desired social and environmental outcomes.

5.2 Major Findings

Findings from this research were presented in three interrelated manuscripts. Chapter Two examined the extent to which research on collaboration for water governance addresses and accounts for power and power related issues. Chapters Three and Four built directly upon findings from Chapter Two and used a power lens to guide empirical analysis of two comparative cases. Chapter Three addressed the nature and implications of state actions and decisions with respect to collaborative processes addressing issues of water governance that involve major natural resource industries. Chapter Four shifted focus to the natural resource industries themselves and the motivations and implications of their participation for both collaborative water governance processes and their outcomes. The remainder of this section briefly summarizes each chapter and highlights key findings.

Chapter Two presented findings from a study that used a systematic review methodology (Petticrew and Roberts 2006) to examine literature on collaborative approaches to water governance (e.g., Fish, *et al.* 2010; Lubell and Lippert 2011; Pares 2011). The review applied the conceptual framework established in Chapter One to determine how, and to what extent, literature on collaborative approaches to water governance addressed issues of power. Power is particularly relevant to the study of collaborative approaches to water governance because theoretical constructions of collaboration rest upon the key assumption that collaborative actors will be able to participate with relative equity within processes (Ansell and Gash 2007; Barry 2011; Echeverria 2001; Gray 1989; Innes and Booher 2010; Koontz, *et al.* 2004; Margerum 2007; Memon and Weber 2010). Many of the espoused benefits of collaboration (e.g., representative outcomes, knowledge sharing, shared learning, etc.) depend on this presumed equity to emerge (Ansell and Gash 2007; Innes and Booher 2010; Memon and Weber 2010). Theory used to construct the conceptual framework that guided the systematic review was drawn from literature on power (e.g., Clegg 1989; Flyvbjerg 1998a; Foucault and Gordon 1980; Gaventa 2006; Haugaard and Clegg 2009; Lukes 2005), global governance (e.g., Cerny 2010; Falkner 2008;

Falkner 2012; Fuchs 2007; Levy and Newell 2005b; Newell 2012a), and political science and state theory (e.g., Brooks and Stritch 1991; Hessing, *et al.* 2005; Howlett and Ramesh 1995; Kraft and Kamieniecki 2007; Macdonald 2007; Wu, *et al.* 2010). Results revealed that while power-related concerns were commonly present in the literature analyzed through the systematic review, the majority of articles did not fully recognize or account for power beyond more visible and obvious expressions (e.g., Benson, *et al.* 2013; Dewulf, *et al.* 2011; Huffman 2009; Mandarano and Paulsen 2011; Parker, *et al.* 2009; Van Buuren, *et al.* 2012; Van Riper 2012; Weible 2011). As a result, many of the factors shaping collaborative processes and their outcomes remained unaccounted for.

Those issues of power most frequently identified tended to reflect visible instrumental or structural faces of power (e.g., inclusion or exclusion of specific stakeholder groups, unequal capacities to participate, retention of decision-making power by the state). Hidden issues of structure and discourse (e.g., who was or was not favoured by the dominant discourse, control over information production and use) received comparatively little attention. Exceptions included scholarship addressing large, well-studied instances of collaboration (e.g., Gambert 2010; Pares 2011; Shilling, *et al.* 2009), and traditionally marginalized communities (e.g., Memon and Kirk 2012) There was frequent recognition that collaboration is fundamentally shaped by the socioeconomic and political conditions within which it is nested (e.g., Abers and Keck 2009; Benson, *et al.* 2013; Cutts, *et al.* 2010; Fish, *et al.* 2010; Hardy 2010; Lubell and Lippert 2011; Marshall, *et al.* 2010; Neef 2009; Robinson, *et al.* 2011), but attention to the specific ways that relationships of power manifest was rare. This is significant because the manifestation of these power issues has the potential to prevent collaborative processes from achieving desired outcomes.

Many issues of hidden structure and discourse remain so because they reflect actions and decisions that take place at scales beyond the local or regional unit of analysis. Using power to analyze the factors affecting collaborative processes and their success thus revealed the necessity of examining both internal process characteristics, and the ways that external conditions and activities at different scales shape collaboration and its outcomes. Chapter Two thus established a need to examine collaboration through the lens of power to reveal a fuller picture of the factors shaping collaborative processes and outcomes. This reflects specific calls in the literature to address the impact that power has on collaborative processes in literature on collaborative approaches to environmental governance (e.g., Ansell and Gash 2007; Blackstock, *et al.* 2012; Emerson, *et al.* 2012; Taylor and de Loë 2012),

The key contributions from Chapter Two were the identification of a gap largely related to the understanding and treatment of hidden power in literature on collaborative approaches to water governance, and initial work towards filling that gap. The identified gap has consequences for the potential achievement of desired social and environmental outcomes. Chapter Three was the first of two chapters to empirically address a gap related to the nature of these consequences through a cross case analysis of two instances of collaboration focusing on water governance: the Athabasca Watershed Council (AWC) in Alberta, Canada, and the Thames-Sydenham and Region Source Protection Committee in Ontario, Canada. Guided by the conceptual framework established in Chapter One and refined in Chapter Two, Chapter Three examined the role of the state in mediating outcomes from collaborative approaches to water governance defined by the presence of major natural resource industry firms. Governments often initiate and host collaborative processes, and play a role in implementation of outputs. Hence, they control many aspects of collaboration (Bidwell and Ryan 2006; Gunningham 2009; Hardy 2010; Koontz and Thomas 2006; Margerum 2007; Reed and Bruyneel 2010) and are thus important nodes for the study of power.

Analysis of the two cases revealed that provincial governments in Alberta and Ontario exerted significant control over collaborative outcomes, although they did so at different stages of the policy cycle, using different mechanisms, and through different forms of power. Both governments, to varying degrees, acted in response to cultural path dependency, institutional fragmentation, and significant pressures exerted by a dominant, capitalist socioeconomic system favouring the interests of economic actors over others. In Ontario, processes were tightly controlled from agenda setting, through deliberation, information production and use, to final approval of collaboratively developed Source Protection Plans. In Alberta, processes were not as strictly controlled, but outputs were also not integrated into provincial decision-making in a meaningful way. In both cases, state mechanisms of control have limited the ability of processes to achieve desired social and environmental outcomes.

Using power theory to examine state actions and decisions with respect to collaboration in situations where major resource industry firms are participants revealed three significant implications for collaborative water governance scholarship. All three implications at least partially challenge the benefits proposed by many collaborative theorists. In concert with growing voices from the collaboration literature (e.g., Gunningham 2009; Koontz and Thomas 2006; Lubell and Lippert 2011; McClosky 2000; Newig and Fritsch 2009), they also question whether collaboration has the ability to produce improved environmental conditions.

First, collaborative approaches to water governance that do not adequately account for power inequalities existing both within and outside of collaborative processes have the very real potential of providing the appearance of democratic participation while simultaneously acting to entrench existing power structures and reinforce the status quo (Fish, *et al.* 2010; Lubell and Lippert 2011; McClosky 2000; Pares 2011; Schmidt 2014). Second, the lack of ability to impact actions and decisions related to important political or economic issues has the potential to disempower actors. This occurs despite participation in processes intended to empower local action and participation (Lubell 2004a; Lubell and Lippert 2011; Shilling, *et al.* 2009). Finally, retention of state control over processes can prevent collaborative benefits such as shared knowledge and learning from either emerging, or being effectively integrated into policy decisions. While state control over final decisions is often required to fulfill legal and democratic obligations, this finding offers a nuanced challenge to the assertion by many collaborative scholars that state control is required for effective and successful collaborative processes (e.g., Fish, *et al.* 2010; Gunningham 2009; Holley, *et al.* 2012; Murray 2005). The finding suggests a need to more clearly analyze the influences on state actions and decisions in exercising that control in order to realize the proposed benefits of collaboration.

Where Chapter Three identified the key finding that the state fundamentally shapes the nature, process and outcomes of collaboration through actions and decisions external to the collaborative process, Chapter Four shifted the analytical lens away from the state and delved more deeply into how the actions, motivations and decisions of a prominent set of influential actors, natural resource industry firms, impacted collaborative processes and outcomes. The goal of Chapter Four was to examine the implications of major resource industry firm participation on regional or watershed scale collaborative processes aimed at achieving improved social and environmental outcomes. This chapter also used empirical data from the Ontario and Alberta cases.

Key findings from Chapter Four revealed that natural resource sector firms were able to mobilize significant resources to exert influence at institutional scales from the individual to the global, including at the collaborative group and provincial levels, in ways that are usually not available to other actors. Firms had multiple avenues of influence for achieving their policy goals outside of collaborative processes and viewed collaboration largely as a public relations exercise. This view contradicts the conditions for collaboration identified by other scholars with respect to a commitment to work interdependently to produce shared outcomes (e.g., Ansell and Gash 2007;

Blackstock, *et al.* 2012; Gray 1985; Koontz, *et al.* 2004). The collaborative process also provided firms with the opportunity to shape knowledge and information at the watershed scale.

Collaboration, in both Alberta and Ontario, has done little to change the way that important decisions with respect to industry activities and water are being made. This finding directly addresses Objective Four, which sought to assess the potential of collaborative processes to achieve desired social and environmental outcomes relative to water. If water issues important to the objectives of collaborative groups cannot be addressed by those groups, regardless of the mechanisms through which this occurs, then collaborative processes are unlikely to achieve desired outcomes. Chapter Four also reinforced findings reported in Chapter Three that suggested that collaboration appears to be perpetuating the status quo with respect to the way that important decisions about water are being made, further entrenching hegemonic decision-making patterns.

The power analysis in Chapter Four also revealed the importance of examining the exertion of influence at stages from problem definition through to implementation. The Ontario case revealed that an absence of visible in-process conflict did not necessarily represent an equitable or conflict free process. Processes that reach agreement are often viewed as "successful" processes (Connick and Innes 2003; Emerson, *et al.* 2009; Leach, *et al.* 2002). However, sites of conflict often occur out of the public eye and, despite having a significant impact on collaborative processes and outcomes, are only revealed by an examination of where and how influence is exerted. Thus, a major finding from this research is that imbalances in power were not, and cannot be, addressed at the watershed scale. Collaborative processes must be studied and designed with an understanding that power and influence exerted external to processes profoundly shapes both the processes themselves, and their outcomes.

5.3 Contributions

5.3.1 Academic Contributions

This study responds to two significant research questions noted in the academic literature. It first addresses growing criticism from literature on collaborative approaches to environmental governance that collaboration is not necessarily returning expected improved social and environmental outcomes (e.g., Gunningham 2009; Koontz and Thomas 2006; Lubell and Lippert 2011; McClosky 2000; Newig and Fritsch 2009). In pursuit of the four identified study objectives, research examined the factors affecting the achievement of desired outcomes using a power theory-based approach, and the influence of those factors on achieving desired outcomes. The study also responds to comments that power represents an understudied area with respect to

collaboration (Frame, *et al.* 2004; Gunningham 2009; Taylor and de Loë 2012) despite broad acknowledgement that power strongly influences processes (e.g., Ansell and Gash 2007; Blackstock, *et al.* 2012; Emerson, *et al.* 2012).

Research was guided by a theoretical framework that integrated insights from literature on collaborative environmental governance (e.g., Ansell and Gash 2007; Connick and Innes 2003; Emerson, *et al.* 2012; Holley, *et al.* 2012; Innes and Booher 2010; Margerum 2007; Margerum and Robinson 2015; Memon and Weber 2010; Sabatier et al. 2005), global governance (e.g., Cerny 2010; Falkner 2008; Falkner 2012; Fuchs 2007; Levy and Newell 2005; Newell 2012), state theory (e.g., Brooks and Stritch 1991; Hessing, *et al.* 2005; Howlett and Ramesh 1995; Kraft and Kamieniecki 2007; Macdonald 2007; Wu, *et al.* 2010), and power (e.g., Clegg 1989; Flyvbjerg 1998; Foucault and Gordon 1980; Gaventa 2006; Haugaard and Clegg 2009; Lukes 2005). Findings from the systematic review and the case studies will be relevant to literature on collaborative approaches to water governance (e.g., Innes, *et al.* 2007; Koontz and Newig 2014; Margerum and Robinson 2015; Memon and Kirk 2012; Sabatier et al. 2005) and collaborative approaches to environmental governance (e.g., Emerson, *et al.* 2012; Gerlak and Heikkila 2011; Holley, *et al.* 2012; Innes and Booher 2010; Newig and Fritsch 2009). Findings specific to industry firm involvement in collaborative water governance processes may also be of use to researchers studying corporate social responsibility (e.g., Auld, *et al.* 2008; Pearce II and Doh 2005) and business and environmental policy (Kraft and Kamieniecki 2007; Macdonald 2007; Newell 2012a).

Five significant contributions to the literature can be identified. First, a potential gap related to the application of power theory to theory on collaboration for water governance was confirmed and characterized through the application of the conceptual framework to literature on collaborative approaches to water governance through a systematic review. The review established that, while many researchers are aware that power is an important variable (Ansell and Gash 2007; Blackstock, *et al.* 2012; Cutts, *et al.* 2010; Emerson, *et al.* 2012; Innes and Booher 2010), the majority of that literature does not fully account for power beyond that which is easily visible and is exercised at the watershed scale (e.g., Benson, *et al.* 2013; Dewulf, *et al.* 2011; Huffman 2009; Mandarano and Paulsen 2011; Parker, *et al.* 2009; Van Buuren, *et al.* 2012; Van Riper 2012; Weible 2011). Notable exceptions include Pares (2011), Gambert (2010), Memon and Kirk (2012), and Shilling *et al.* (2009). At the same time, many researchers, without necessarily identifying power, have called for studies that examine the influence of external contexts and institutional frameworks on collaborative processes (e.g., Abers and Keck 2009;

Benson, *et al.* 2013; Cutts, *et al.* 2010; Emerson, *et al.* 2012; Fish, *et al.* 2010; Hardy 2010; Lubell and Lippert 2011; Marshall, *et al.* 2010; Neef 2009; Robinson, *et al.* 2011). The framework itself makes clear that power has potentially far-reaching and significant impacts on collaboration for water governance, beyond those that are normally observed (e.g., control over discourse, control over the information used). The review findings and proposed power proxies represent a starting point for a more systemic approach to the study of collaboration that accounts for power and the tangible effects it has across scales. Findings advance scholarship such that it is no longer sufficient to view power as an external condition that can be superficially identified or ignored. Instead, power must be accounted for in the study of collaborative approaches to water governance because of its fundamental impact on outcomes. There is some literature examining collaboration in environmental governance fields beyond water that does address power (e.g., Parkins 2010; Takeda and Ropke 2010). This work could be of use in furthering the application of power theory to research on collaborative approaches to water governance.

In order to empirically examine the issues of power identified in Chapter Two, examples of collaboration were sought that were characterized by significant and extreme imbalances in capacity, influence and power. For this reason power relative to collaboration was examined in the context of the involvement of major natural resource industry firms. The second major contribution is this empirical characterization of the ways that power is being exerted relative to collaborative governance processes addressing water by both state and influential industrial actors. While collaborative researchers have identified and, in some cases, addressed, a number of the individual power issues that the conceptual framework predicted would shape collaborative processes and outcomes, this study organized and linked these individual concerns through the conceptual framework. Issues such as exclusion (Borisova, *et al.* 2012; Judkins and Larson 2010), retention of state control (Holley, *et al.* 2012; Koontz, *et al.* 2004), and the ability of actors to exert influence at different scales (Emerson, *et al.* 2012; Gambert 2010) are often examined in relative isolation. Study findings make clear that examining these issues as interdependent can provide a clearer picture of the potential for a given collaborative process to generate desired social and environmental outcomes.

A third contribution is the finding that collaboration for water governance is fundamentally shaped by power exerted outside of collaborative processes, significantly at the agenda setting and implementation stages. This represents an initial attempt to fill a gap in theory, the existence of which was confirmed in Chapter Two, related to the examination of power in collaborative approaches to water governance. This finding also presents a challenge to those scholars who

emphasize the necessity of state control for effective and successful collaborative processes (e.g., Fish, *et al.* 2010; Gunningham 2009; Holley, *et al.* 2012; Murray 2005). While ultimate state control is often legally required and can be one of the most effective ways to regulate industry, the study identified a number of potential ways that states mediate power that can negatively affect the ability of processes to produced desired social and environmental outcomes. Revealing the existence and strength of these power relationships (e.g., elite level access, control over agenda setting, privileging of economic interests) can enable a better assessment of the types of collaborative outcomes that can feasibly be accomplished through collaboration.

This leads to a fourth contribution, a stronger rationale for the incorporation of power into scholarship on collaborative approaches to water governance, and broader environmental governance. Despite the fact that much research on collaborative approaches to water governance identifies power as fundamental to collaborative processes (e.g., Blackstock, *et al.* 2012; Innes and Booher 2010; Lubell and Lippert 2011; Taylor and de Loë 2012), it has not yet been explicitly characterized. Empirically examining collaborative processes through a power lens, it became obvious that a wide range of factors that shape collaborative processes and outcomes are often not accounted for including, for example, the positioning of the state with respect to collaboration as a function of broad socioeconomic pressures, the availability of multiple avenues of influence for powerful actors, and the shaping of collaborative agendas through closed problem definition processes.

Finally, the study provided insights into the motivations of industry firms with respect to collaboration for water governance through analysis of the nature of their participation. Motivations and characterizations with respect to the behavior of industry on environmental issues have been extensively studied in a number of disciplines (e.g. Falkner 2008; Fuchs 2007; Gunningham, *et al.* 2003; Hessing, *et al.* 2005; Levy and Newell 2005b; Macdonald 2007; Parsons and Moffat 2014). However, with a few exceptions (e.g., Gunningham 2009; Holley, *et al.* 2012; Parkins 2010), this area has remained understudied with respect to collaboration for water or environmental governance. Findings revealed that, in the presence of multiple avenues of influence external to collaborative processes, industry participation represented a desire to build relationships and legitimacy, influence knowledge and opinions, and gather information. Given that collaboration presupposes that participation indicates at least some level of commitment to "two-way communication and influence between agencies and stakeholders" (Ansell and Gash 2007:546; Blackstock, *et al.* 2012; Koontz, *et al.* 2004), the motivations of

these influential actors have the potential to significantly shape the ability of collaboration to achieve desired outcomes.

5.3.2   Recommendations for Practice

Collaborative approaches to water governance are widely used around the globe in situations where major natural resource industry firms are active. Within the provincial contexts studied in this doctoral research, a number of other watersheds are characterized by the presence of significant industries (e.g., Bow River Basin Council 2015; Lake Erie Source Protection Committee 2015; North Saskatchewan Watershed Alliance 2015; Trent Conservation Coalition Source Protection Committee 2015). Across Canada more broadly, resource industry firms are also active in sites of collaborative governance in British Columbia (Frame, *et al.* 2004; von der Porten and de Loë 2013a), New Brunswick (van Tol Smit, *et al.* 2015) and the territories (de Loë and Morris 2014). In Australia, national water policy strategies guide water planning through watershed-based collaborative groups, including in regions where industries are active (Gunningham 2009; Holley, *et al.* 2012). Collaborative processes are also common in the United States, Mexico and Europe (e.g., Gambert 2010; Judkins and Larson 2010; Pares 2011; Sabatier et al. 2005). The study generated a number of recommendations for those designing, hosting or participating in collaborative approaches to water governance in contexts where resource industry firms are active. They are particularly relevant for government actors but will also be useful for those in other sectors. These recommendations are directly derived from empirical findings

1. *Be aware of the visible and invisible ways that power can manifest in collaboration, especially in situations where power imbalances are significant.*

Table 2.2 in Chapter 2 provides a useful starting point for identifying tangible ways that power can affect collaborative approaches to water governance. Many best practices in collaboration already reflect acknowledgement of concerns related to the visible exertion of power. For example, facilitation is a common process characteristics used to address issues of misinformation, manipulation, coercion, and co-optation (Ansell and Gash 2007; Parkins and Mitchell 2005). However, collaboration is more likely to achieve desired social and environmental outcomes if practitioners address all aspects of power, including those that are hidden or occur at scales that transcend the watershed level. Recently, there have been calls for more investigation into the impact of the political and socioeconomic conditions within which collaboration is situated (Emerson, *et al.* 2012; Koontz and Newig 2014). As the findings of Chapters 3 and 4 make clear, these conditions, and the ways they shape and mediate the exercise

of power, have profound impacts on collaboration. As such, practitioners who delve into issues of power in a critically reflexive manner have the potential to design more effective collaborative processes. These issues include, but are not limited to, control over and production of knowledge; privileging of specific views by dominant discourses; influence over agenda setting and implementation (to be discussed in more detail below); government constraints due to economic or other obligations; and patterns of access to important decision-makers. When power imbalances are significant, care should be taken to ensure that collaboration does not disempower populations, exacerbate conflict (Barry 2011) or reinforce existing unequal power structures (Fish, *et al.* 2010).

2. *Pay careful attention to how agenda setting, problem definition and implementation are conducted, and what interests are favoured in this processes.*

Agenda setting and problem definition are contestable social processes shaped by the preferences of those with control over this stage of the policy cycle (Hessing, *et al.* 2005; Howlett and Ramesh 1995; Torgerson 2005a). The way problems are defined will bound the range of solutions possible for a given problem (Torgerson 2005b). If collaboration occurs after a policy agenda is set, as was the case in Ontario, the problem in question may already have been framed according to a specific bias (Bingham, *et al.* 2005; Howlett and Ramesh 1995). In this way, other interests or perspectives may be denied access to decision making, even when deliberative processes are used, because those interests will not necessarily have a legitimate stake in the issue as it has been defined (Freudenburg 2005).

In order to account for power exercised at this stage in the policy cycle, those setting up collaborative processes have two main options. The first, and the preferred method, is to collaboratively set the agenda. Empirical research has shown that collective agreement on problem definition enables effective collaboration (Heikkila and Gerlak 2005; Koontz, *et al.* 2004; Wondolleck and Yaffee 2000). In general, if this phase is broadly accessible and run with attention to power, there is a greater likelihood that the eventual agenda will better reflect the diverse perspectives and emergent understanding expected of collaboration. However, collaborative agenda setting is time consuming and can be undesirable to participants who would rather devote time to addressing an identified problem instead of debating what the problem is (Frame, *et al.* 2004). It can also result in problem definitions that are either politically uncomfortable or ineffective if, for instance, they contradict government priorities, or if decisions do not yield robust environmental protections (Koontz, *et al.* 2004; McClosky 2000). Finally,

collaborative agenda setting may also be difficult for states grounded in command and control culture, or for those bodies constrained by limits on time or resources.

In situations where collaborative agenda setting is currently viewed as unfeasible, the next best option is based on increasing openness and transparency at the agenda setting stage. Those designing processes can acknowledge influences on agenda setting and reflect upon what interests are favoured by proposed problem framings, which interests are defined in or out of processes, and why. For instance, problem framing in Ontario limited attention to municipal source water protection, effectively defining out many water problems caused by industry. Consultation and public participation, even if it is not collaborative, will be useful in this regard.

3. *Collaboration that does not account for power can disempower some actors*

Results from Chapters Three and Four indicate that implementation that does not respect the time and effort put in to collaborative processes has the potential to actually disempower actors and destroy trust. States proposing and promoting collaboration but maintaining tight control over implementation need to be aware of, and responsive to, this potential. Respecting the collaborative process in implementation may require closing back doors into policy decisions that are normally available to more influential actors. This has the potential to be politically uncomfortable but is also necessary. Transparency and openness at this stage are once again key to achieving effective socially and environmentally beneficial outcomes.

4. *Ensuring effective collaboration may require mandated participation with binding outcomes*

Findings in Chapter Four revealed that the voluntary nature of the process made it possible for major resource industry firms to superficially participate in collaboration without committing to the outcomes. This is a somewhat predictable outcome since the industries in question have a number of other policy influence venues that are more effective than the collaborative process (as per Ansell and Gash 2007). The voluntary nature of collaboration has two significant implications with respect to resource industry firm participation. First, theory on collaborative governance highlights transformative potential when participants are open to reexamining their positions and values based on new information and emergent learning (Fish, *et al.* 2010; Kallis, *et al.* 2009). If firms are able to send representatives who do not have decision-making power, any transformative or emergent learning that occurs is unlikely to translate into company-wide actions and decisions. Second, firms in these situations are able to reap benefits related to the maintenance of their social license, opportunities to influence knowledge, and the collection of information without necessarily incurring any costs with respect to improved environmental

performance. Mandated participation, either alone or in combination with binding outcomes, would ensure that those individuals with the power to make decisions are at the table and authentically participating in collaborative decisions (Gunningham 2009).

5. *Collaboration may not be appropriate in all situations*

Collaboration is not appropriate in all situations (Innes and Booher 2010; von der Porten and de Loë 2013a). Under conditions of extreme power imbalance, collaboration is unlikely to succeed in producing better, more implementable social and environmental outcomes (Gunningham 2009). Extreme power imbalances are more likely in situations where differences in capacity are significant, where non-institutionalized interests are dispersed and unorganized (Ansell and Gash 2007; Buanes, *et al.* 2004), and where governments themselves are likely to favour some interests over others. These conditions are more likely in places where major natural resource industry firms are involved. Under such conditions, the use of strong, well-enforced government regulations may be more effective in achieving improved environmental outcomes.

6. *A committed, long-term investment in collaboration may have the potential to slowly create the conditions for improved environmental conditions.*

Results also supported the position that collaboration has the potential to change environmental conditions over the long term. Findings from both cases supported the view that long-term relationship and awareness building through collaboration have the potential to shift the priorities of society. Interestingly, hope for substantial change was not viewed as achievable through the collaborative process itself, but rather through shifts in voter preferences leading to changes in traditional electoral systems. Given that many government decisions in Canada correspond to four year electoral cycles, long term planning is often challenging (Harrison 1996; Howlett 2009). Current investment in highly normative processes such as collaboration indicates that there is some appetite for a more normative approach to environmental policy making, despite the fact that many collaborative processes are undertaken for largely instrumental reasons (Emerson, *et al.* 2012). As such, continued use of collaboration under appropriate conditions, preferably with a better accounting of power, is recommended as a strategy for long term, lasting change.

5.4   Study Limitations and Ideas for Future Research

This study was grounded in an interpretation of power based on Lukes. The three dimensions of power used by Lukes (2005), commonly applied in contexts related to environmental issues and business interactions (Falkner 2008; Falkner 2012; Fuchs 2007; Macdonald 2007; Parkins 2010; Takeda and Ropke 2010; Zeitoun and Allan 2008), represent one conceptualization of power

within a vast and contested literature (Barnett and Duvall 2005; Haugaard 2002; Haugaard and Clegg 2009). Many other forms and frameworks of power have been developed beyond the instrumental, structural and discursive dimensions identified here. These other interpretations have the potential to expand upon the findings presented above. For example, examining power as legitimacy, as per Arendt (1970) or Parsons (1963) could generate insights that are not revealed through an examination of power as domination. At the same time, approaching power as legitimacy could miss some of the insights that were captured by the domination view of power used in this thesis. There is also still significant work to be done examining power using Lukes' (2005) ideas in the context of collaborative approaches to water governance. The systematic review and empirical cases presented in this dissertation have provided a start in this direction.

Efforts were made throughout the data collection process to engage with First Nations and Métis actors. This reflected an attempt to incorporate perspectives with which I have limited first hand experience. In the Athabasca basin, conflict within the AWC resulted in a reluctance of First Nations actors to participate in the study. First Nations and Métis groups who had chosen not to participate in the AWC from its inception were also contacted and also declined interviews. In Ontario, three First Nations members sit on the Thames-Sydenham and Region Source Protection Committee; none responded to interview requests. As a result, this thesis is missing their very important perspective. While not a replacement for First Nations and Métis participation in this study, work by my colleague, Sue von der Porten, extensively addresses issues relating to First Nations actors and collaboration for water governance in Canada (von der Porten and de Loë 2013a; von der Porten and de Loë 2013b; von der Porten and de Loë 2014).

Several interesting issues were raised throughout the study process that were beyond the scope of the manuscripts presented in Chapters 2, 3 and 4. Collaborative agenda setting has been proposed as a potential strategy to balance power more effectively within collaborative processes (Heikkila and Gerlak 2005; Koontz, *et al.* 2004; Wondolleck and Yaffee 2000), and is recommended above. However, other studies have found that participants are not necessarily interested in spending the time or resources necessary to undertake this process (e.g., Frame, *et al.* 2004). Further investigation into collaborative agenda setting would be helpful in determining the feasibility of strategies to address power within collaborative approaches to water governance.

Almost all interviewees in Alberta noted that the voluntary and non-regulatory nature of collaborative process goals defined by *Water For Life* affected the impact of the process and the types of people and interests that were involved, especially with respect to resource industry

firms. The question of voluntary versus forced collaboration has also been raised by others (e.g., O'Leary and Bingham 2009). Examining which factors are required to attract industrial firm representatives with the authority to actually change industry operations has the potential to improve collaborative processes and their outcomes. The study also revealed significant differences in motivation and behavior between industry representatives from publically traded companies and from majority privately owned companies. Investigating the impact of these company characteristics on collaboration will also help determine the potential for collaboration to influence industry operations.

Government interviewees in Alberta occasionally made reference to the need for the Province of Alberta to maintain its social license to operate. This is a term generally applied to business or industrial interests and their need to maintain the support of communities or populations affecting their capacity to operate (Parsons and Moffat 2014). Without a more thorough review of the literature, it is not possible to determine if the perception that states need to hold and maintain a social license to operate is a gap to be addressed, but it is an interesting question with respect to democratic theory. Under democratic systems, governments tend to be viewed as legitimate by virtue of the fact that they have been elected (McClosky 2000). The perception that the Province of Alberta needs to maintain a social license could indicate that the democratic electoral system in that province is not producing a government that effectively responds to the interests of its population. Further investigation would be interesting.

Finally, the membership of the Thames-Sydenham and Region Source Protection Committee was almost entirely male. At the time of publication, 20 of the 21 sector representatives, and the committee chair, were male. Of the three non-voting First Nations representatives, one was female. Of the 11 Committee members interviewed, ten were male. The one female committee member interviewed had left the committee several years prior. While other Source Protection Committees within Ontario have more balanced representation, the role of gender in shaping collaborative group processes and outcomes has the potential to present interesting findings with respect to collaborative environmental governance. This issue was well beyond the scope of this study because of the focus on industry involvement in collaborative approaches to water governance, but seems worthy of further investigation. The Thames-Sydenham and Region Source Protection Committee presents a prime case for investigation.

5.5 Research Reflections

5.5.1 Reflections on Transdisciplinarity

This is a thesis that owes its existence to transdisciplinarity for a number of reasons. First, my background as a hydrologist and ecosystem scientist prevented my acceptance in many of the departments that house individuals with expertise in governance, water and power. The approach adopted by the Department of Environment and Resource Studies both allowed me access to these experts, and valued the knowledge I brought with me to the program. I can't claim that learning an entirely new intellectual language, research format and epistemological approach was painless but it was ultimately rewarding and it is an experience for which I am grateful.

Second, my theoretical framework represents an amalgamation of theories and thinking that fit with my research questions. They are not bound by discipline. This was both liberating and occasionally problematic, as when I found myself searching for examples of scholarly precedence for which very little could be found (e.g., collaborative environmental governance scholars explicitly using neopluralist theory). However, this enabled me to make use of the frameworks and knowledge that were most relevant to my work and ultimately produced a thesis that better represents the way I view the world.

Finally, transdisciplinarity is an approach that emphasizes critical consciousness, dialogue, and the transformation of social and political structures (Hirsch Hadorn, *et al.* 2006). While this thesis does not necessarily wholly fulfill those functions (an issue addressed below), it does identify and address their importance throughout. As the transdisciplinary doctoral program, and both institutional support and comfort with its implications, evolves, I do think that future theses in Environment and Resource Studies at the University of Waterloo will do a better job of being truly trandisciplinary than those of us at the vanguard.

5.5.2 Personal Reflections

I began this doctoral process thinking that the privileging of economic interests in environmental policy making could not possibly be as bad as I thought. I had witnessed significant injustices in other countries but for inexplicable reasons still believed that my home country and province were somehow immune. This, combined with the belief that all humans, regardless of position or political status, are able to relate to each other on some level, inspired me to investigate the potential of collaboration to address environmental problems. In the end, I've discovered that economic privileging is often just as bad, if not worse, than I thought, especially in the cases

examined. In conversations with academics, elders and peers, I've learned that this knowledge should not be surprising but that has still not made the realization any less jarring.

The cases selected purposefully represented some of the largest and most powerful economic interests in Canada. They were excellent examples of exacerbated power imbalances. At the same time, their nature meant that there was scant evidence of collaboration actually functioning effectively. It may thus be somewhat counter-intuitive that my findings have not wholly discouraged me with respect to the potential of collaboration. Dialogue, readings and conversations in the field have convinced me that the type of community building that collaboration represents, when power and contextual factors are effectively recognized and accounted for, does have the ability to create better social and environmental outcomes in the long term. Whether or not provincial governments are able to design collaborative processes that effectively recognize and account for power is still a question to be explored. I am more hopeful for the potential of collaboration at the community scale.

Finally, after a substantial commitment to the study of water at the graduate level, this research has led me to realize that the issues that manifest in water governance are rarely issues inherent to water itself. It has become increasingly clear that the structural privileging of powerful economic interests is at the heart of the vast majority of current environmental and social issues. It has only been through a great deal of experiential and academic learning that I have been able to clearly recognize prevailing hegemonic norms and societal myths as the product of profoundly unfair global power structures instead of as universal truths. While recognizing power in the world is a useful precursor to creating change, I have often been concerned throughout the doctoral process that my work is critical at the expense of being productive. Moving forward, I find myself less drawn to addressing individual environmental issues from theoretical perspectives. I am instead motivated to work to disaggregate entrenched power centres, either through research or practice, in ways that are empowering, socially productive and action-based.

Appendix 1

List of Articles in Systematic Review Study Pool

Abers, R. N. and Keck, M. E. 2009. Mobilizing the state: The erratic partner in Brazil's participatory water policy. *Politics & Society* 37(2): 289-314.

Allen, W., Fenemor, A., Kilvington, M., Harmsworth, G., Young, R. G., Deans, N., Horn, C., Phillips, C., Montes de Oca, O., Ataria, J. M., and Smith, R. 2011. Building collaboration and learning in integrated catchment management: the importance of social process and multiple engagement approaches. *New Zealand Journal of Marine and Freshwater Research* 45(3): 525-539.

Benson, D**.**, Jordan, A., Cook, H., and Smith, L. 2013. Collaborative environmental governance: are watershed partnerships swimming or are they sinking? *Land Use Policy* 30(1): 748-757.

Berke, P., Spurlock, D., Hess, G., and Band, L. 2013. Local comprehensive plan quality and regional ecosystem protection: the case of the Jordan Lake watershed, North Carolina, U.S.A. *Land Use Policy* 31: 450-459.

Borisova, T., Racevskis, L., and Kipp, J. 2012. Stakeholder analysis of a collaborative watershed management process: A Florida case study. *Journal of the American Water Resources Association* 48(2): 277-6.

Campbell, J., Koontz, T. M., and Bonnell, J. E. 2011. Does collaboration promote grass-roots behavior change? Farmer adoption of best management practices in two watersheds. *Society and Natural Resources* 24: 1127-1141.

Cutts, B. B., Muñoz-Erickson, T. A., Darby, K. J., Neff, M., Larson, E. K., Bolin, B., and Wutich, A. 2010. Ego network properties as a way to reveal conflict in collaboration's clothing. *Procedia Social and Behavioural Sciences* 4: 93-101.

Deason, J. P., Dickey, G. E., Kinnell, J. C., and Shabman, L. A. 2010. Integrated planning framework for urban river rehabilitation. *Journal of Water Resources Planning and Management* 136(6): 688-696.

Dewulf, A., Mancero, M., Cardenas, G., and Sucozhanay, D. 2011. Fragmentation and connection of frames in collaborative water governance: a case study of river catchment management in Southern Ecuador. *International Review of Administrative Sciences* 77: 50-75.

Fish, R. D., Ioris, A. A. R., and Watson, N. M. 2010. Integrating water and agricultural management: collaborative governance for a complex policy problem. *Science of the Total Environment* 408(23): 5623-5630.

Floress, K., Stalker Prokopy, L., and Broussard Allred, S. 2011. It's who you know: Social capital, social networks, and watershed groups. *Society and Natural Resources* 24(9): 871-886.

Fuller, B. W. 2009. Surprising cooperation despite apparently irreconcilable differences: Agricultural water use efficiency and CALFED. *Environmental Science and Policy* 12: 663-673.

Gambert, S. 2010. Territorial politics and the success of collaborative governance: local and regional partnerships compared. *Local Environment* 15(5): 467-480.

Golet, G. H., Anderson, B., Luster, R. A., and Werner, G. 2009. Collaborative planning fosters multiple-benefit restoration projects on the Sacramento River. *Conservation Biology* 23(6): 1634-1637.

Guehlstorf, N. and Hallstrom, L. K. 2012. Participatory watershed management: A case study from Maritime Canada. *Environmental Practice* 14(2): 143-153.

Hardy, S. D. 2010. Governments, group membership, and watershed partnerships. *Society and Natural Resources* 23(7): 587-603.

Hardy, S. D. and Koontz, T. M. 2009. Rules for collaboration: institutional analysis of group membership and levels of action in watershed partnerships. *Policy Studies Journal* 37(3): 393-414.

Hauser, B. K., Koontz, T. M., and Bruskotter, J. T. 2012. Volunteer participation in collaborative watershed partnerships: insights from the Theory of Planned Behaviour. *Journal of Environmental Planning and Management* 55(1): 77-94.

Huffman, J. L. 2009. Comprehensive river basin management: The limits of collaborative, stakeholder-based, water governance. *Natural Resources Journal* 49: 117-149.

Innes, J. E., Booher, D. E., and Di Vittorio, S. 2011. Strategies for megaregion governance: Collaborative dialogue, networks, and self-organization. *Journal of the American Planning Association* 77(1): 55-67.

Judkins, G. L. and Larson, K. L. 2010. The Yuma desalting plant and Cienaga de Santa Clara dispute: a case study review of a workgroup process. *Water Policy* 12: 401-415.

Kallis, G., Kipping, M., and Norgaard, R. 2009. Collaborative governance and adaptive management: lessons from California's CALFED water program. *Environmental Science and Policy* 12(6): 631-643.

Kellogg, W. 2009. Ohio's Balanced Growth Program: a case study of collaboration for planning and policy design. *Journal of Environmental Planning and Management* 52(4): 549-570.

Lane, M. B. and Robinson, C. J. 2009. Institutional complexity and environmental management: The challenge of integration and the promise of large-scale collaboration. *Australasian Journal of Environmental Management* 16(1): 16-24.

Larson, K. L. and Edsall, R. M. 2010. The impact of visual information on perceptions of water resource problems and management alternatives. *Journal of Environmental Planning and Management* 53(3): 335-352.

Lubell, M. and Lippert, L. 2011. Integrated regional water management: a study of collaboration or water politics-as-usual in California, USA. *International Review of Administrative Sciences* 77(1): 76-100.

Mandarano, L. A. and Paulsen, K. 2011. Governance capacity in collaborative watershed partnerships: evidence from the Philadelphia region. *Journal of Environmental Planning and Management* 54(10): 1293-1313.

Marshall, K., Blackstock, K. L., and Dunglinson, J. 2010. A contextual framework for understanding good practice in integrated catchment management. *Journal of Environmental Planning and Management* 53(1): 63-89.

Memon, P. A. and Kirk, N. 2012. Role of indigenous Maori people in collaborative water governance in Aotearoa/New Zealand. *Journal of Environmental Planning and Management* 55(7): 941-959.

Memon, A., Painter, B., and Weber, E. 2010. Enhancing potential for integrated catchment management in New Zealand: a multi-scalar, strategic perspective. Australasian Journal of Environmental Management 17(1): 35-44.

Meyer, C and Thiel, A. 2012. Institutional change in water management collaboration: Implementing the European Water Framework Directive in the German Odra river basin. *Water Policy* 14: 625-646.

Moellenkamp, S., Lamers, M., Huesmann, C., Rotter, S., Pahl-Wostl, C., Speil, K., and Pohl, W. 2010. Informal participatory platforms for adaptive management. Insights into niche-finding, collaborative design and outcomes from a participatory process in the Rhine Basin. *Ecology and Society* 15(4): 41-64.

Neef, A. 2009. Transforming rural water governance: towards deliberative and polycentric models? *Water Alternatives* 2(1): 1-8.

Norgaard, R. B., Kallis, G., and Kiparsky, M. 2009. Collectively engaging complex socio-ecological systems: re-envisioning science, governance, and the California Delta. *Environmental Science and Policy* 12: 644-652.

Pares, M. 2011. River basin management planning with participation in Europe: From contested hydro-politics to governance-beyond-the-state. *European Planning Studies* 19(3): 457-478.

Parker, J. S, Moore, R., and Weaver, M. 2009. Developing participatory models of watershed management in the Sugar Creek Watershed (Ohio, USA). *Water Alternatives* 2(1): 82-100.

Parker, K. D., Margerum, R. D., Dedrick, D. C., and Dedrick, J. P. 2010. Sustaining watershed collaboratives: the issue of coordinator-board relationships. *Society and Natural Resources* 23(5): 469-484.

Robinson, C. J., Margerum, R. D., Koontz, T. M., Moseley, C., and Lurie, S. 2011. Policy-level collaboratives for environmental management at the regional scale: lessons and challenges from Australia and the United States. *Society and Natural Resources* 24(8): 849-859.

Robinson, C. J., Taylor, B., Pearson, L., O'Donohue, M., and Harman, B. 2009. A SMART assessment of water quality partnership needs in Great Barrier Reef catchments. *Australasian Journal of Environmental Management* 16(2): 84-93.

Ruelas-Monjardin, L. A., Chavez-Cortes.J.M., and Shaw, D. P. 2009. Scarcity and conflict, key problems in water management: a Mexican case study. *Local Environment* 14(8): 765-782.

Shilling, F. M., London, J. K., and Lievanos, R. S. 2009. Marginalization by collaboration: Environmental justice as a third party in and beyond CALFED. *Environmental Science and Policy* 12: 694-709.

Sirianni, C. 2009. The civic mission of a federal agency in the age of networked governance: U.S. Environmental Protection Agency. *American Behavioral Scientist* 53(6): 933-952.

Spellecacy, R. 2009. Water resource planning for the agricultural community in Washington State. *Environmental Practice* 11: 95-104.

Springer, A. C. and de Steiguer, J. E. 2011. Social network analysis: a tool to improve understanding of collaborative management groups. *Journal of Extension* 49(6).

Tan, P. L., Bowmer, K. H., and Baldwin, C. 2012. Continued challenges in the policy and legal framework for collaborative water planning. *Journal of Hydrology* 474: 84-91.

Taylor, B. and de Loë, R. 2012. Conceptualizations of local knowledge in collaborative environmental governance. *Geoforum* 43: 1207-1217.

Taylor, K. A and Short, A. 2009. Integrating scientific knowledge into large-scale restoration programs: the CALFED Bay-Delta Program experience. *Environmental Science and Policy* 12: 674-683.

Tyson, B., Edgar, N., and Robertson, G. 2011. Facilitating collaborative efforts to redesign community managed water systems. *Applied Environmental Education and Communication* 10(4): 211-218.

Van Buuren, A., Klijn, E. H., and Edelenbos, J. 2012. Democratic legitimacy of new forms of water management in the Netherlands. *Journal of Water Resources Development* 28(4): 629-645.

van Herk, S., Zevenbergen, C., Ashley, R., and Rijke, J. 2011. Learning and Action Alliances for the integration of flood risk management into urban planning: a new framework from empirical evidence from The Netherlands. *Environmental Science and Policy* 14: 543-554.

Van Riper, L. 2012. The interagency creeks and communities strategy: Creating healthy streams and wetlands by bringing people together. *Rangelands* 34(4): 5-10.

Watson, N., Deeming, H., and Treffny, R. 2009. Beyond bureaucracy? assessing institutional change in the governance of water in England. *Water Alternatives* 2(3): 448-460.

Weber, E. P. 2009. Explaining institutional change in tough cases of collaboration: "Ideas" in the Blackfoot Watershed. *Public Administration Review* 69(2): 314-327.

Weible, C. 2011. Political-administrative relations in collaborative environmental management. *International Journal of Public Administration* 34(7): 424-435.

Weible, C and Moore, R. H. 2010. Analytics and beliefs: Competing explanations for defining problems and choosing allies and opponents in collaborative environmental management. *Public Administration Review*(5): 756.

Weible, C. M., Pattison, A., and Sabatier, P. A. 2010. Harnessing expert-based information for learning and the sustainable management of complex socio-ecological systems. *Environmental Science and Policy* 13: 522-534.

Weible, C. M. and Sabatier, P. A. 2009. Coalitions, science, and belief change: comparing adversarial and collaborative policy subsystems. *The Policy Studies Journal* 37(2): 195-212.

Appendix 2

Semi-structured interview guide

Do you represent a group, organization or interest in the collaborative process?

Follow up:

What is your role in the group, organization of interest that you represent?

What are [your goals/the goals of your organization] when participating in collaboration?

Follow up:

Do you think you are influencing policy?

Where and to whom do you go when you want to influence policy?

Are there any issues that you felt were not appropriate to bring forward in the collaborative
    process?

Follow up:

If so, how do you address those issues?

Did you feel like everything was 'on the table' or were there some issues that were already
    decided or off limits?

Follow up:

Why do you think they were off limits? Who decided them?

Do you feel that the parameters set out in the set up/legislation restricted what you would have
    liked to talk about?

How would you characterize the participation of different stakeholders in the process?

Follow up:

Did you feel that everyone was able to participate equally?

Can you explain why this occurred?

Were there people who were excluded?

(for state actors) How was the collaborative output used?

Given the study objectives, is there anything I haven't asked that you think I should know?

In light of the study objectives, can you identify other individuals I should interview?

Appendix 3

List of Documents Analyzed

Alberta Documents

Number	Name	Date	Source
1	Water Act	1991	Government of Alberta
2	Water For Life	2003	Alberta Environment
3	Enabling Partnerships	2005	Alberta Environment
4	Water For Life: A Renewal	2008	Government of Alberta
5	Water For Life: Action Plan	2009	Government of Alberta
6	Review of Value and Funding Options for Airshed Zones and Watershed Planning and Advisory Councils to Support Cumulative Effects Management	2011	Urban Systems and University of Alberta School of Business
7	AB Federation of Labour letter to Merwan Saher, Auditor General of Alberta	2011	Alberta Federation of Labour
8	Consistency and accountability in implementing watershed plans in Alberta	2009	Unger 2009 for the Environmental Law Centre
9	2014-2017 Business Plan	2014	Alberta Innovates - Energy and Environment Solutions
10	Alberta Watershed Council Member terms of reference	2013	Alberta Watershed Council
11	Lower Athabasca Regional Plan	2012	Government of Alberta
12	Alberta provincial case study: analysis of water strategies for the prairie watershed region	2005	International Institute for Sustainable Development
13	Response to interviewee email of Sept 5, 2014	2014	[name withheld due to ethics requirements]
14	Running out of steam? Oils sands development and water use in the Athabasca river watershed: science and market based solutions	2007	Munk Centre and University of Alberta
15	Strengthening Partnerships	2008	Alberta Water Council
16	What We Heard	2008	Alberta Water Council
17	Suncor Report on Sustainability Summary 2014	2014	Suncor Energy
18	Suncor Firebag 2010 ECRB Performance	2010	Suncor Energy

	Presentation Commercial Scheme Approval No. 8870		
19	Alberta Watershed Council Motion 1 September 2014	2014	[name withheld for confidentiality]
20	Alberta Watershed Council Motion 2	2014	[name withheld for confidentiality]
21	Diana McQueen, Minister of Environment, Letter to North Saskatchewan Watershed Alliance	2012	Alberta Environment and Sustainable Resource Development
22	Integrated Watershed Management Plan - Letter to North Saskatchewan Watershed Alliance	2012	Alberta Environment and Sustainable Resource Development
23	Government of Alberta review of the IWMP - Letter to North Saskatchewan Watershed Alliance	2013	Alberta Environment and Sustainable Resource Development
24	Athabasca Watershed Council	2014	Alberta Watershed Council Website
25	Atlas of the North Saskatchewan River Watershed in Alberta	2012	North Saskatchewan Watershed Alliance
26	Integrated Watershed Management Plan for the North Saskatchewan River in Alberta	2012	North Saskatchewan Watershed Alliance
27	Vermilion River Watershed Management Plan	2012	North Saskatchewan Watershed Alliance
28	Annual Report 2012-2013	2013	Alberta Watershed Council
29	Annual Report 2011-2012	2012	Alberta Watershed Council
30	Annual Report 2010-2011	2011	Alberta Watershed Council
31	Traditional knowledge overview for the Athabasca River Watershed	2011	Brenda Parlee
32	State of the Watershed Report: Phase 1	2011	Hatfield Consultants
33	State of the Athabasca Watershed 2008	2008	Keepers of the Athabasca/Canadian Parks and Wilderness Society Northern Alberta
34	Suncor Report on Sustainability Summary 2009	2009	Suncor Energy
35	Suncor Report on Sustainability Summary 2010	2010	Suncor Energy
36	Suncor Report on Sustainability Summary 2011	2011	Suncor Energy
37	Suncor Report on Sustainability Summary 2012	2012	Suncor Energy
38	Suncor Report on Sustainability Summary 2013	2013	Suncor Energy

Number	Name	Date	Source
39	Carbon Disclosure Project Request for Information	2011	Suncor Energy
40	Carbon Disclosure Project Request for Information	2012	Suncor Energy
41	Carbon Disclosure Project Request for Information	2013	Suncor Energy
42	Boreal Forest Conservation Framework 2009 Annual Action Plan	2009	Suncor Energy
43	Alberta Newsprint Company EnviroVista Progress Report	2014	Alberta Newsprint Company
44	Alberta Newsprint Company EnviroVista Progress Report	2013	Alberta Newsprint Company
45	ANC Whitecourt Star Ad	August 14, 2013	Whitecourt Star Online - p13
46	Alberta Newsprint Company EnviroVista Progress Report	2012	Alberta Newsprint Company
47	Alberta Newsprint Company EnviroVista Progress Report	2010	Alberta Newsprint Company
48	Alberta's Forest Sector Water CEP Plan	2011	Alberta Forest Products Association
49	Handbook for State of the Watershed Reporting	2008	Alberta Environment
50	Recommendations for a Watershed Management Planning Framework for Alberta	2008	Alberta Water Council
51	Report of the Auditor General of Alberta October 2014	2014	Office of the Auditor General of Alberta
52	Athabasca State of the Watershed Report: Phase 2	2012	Fiera Biological Consulting
53	Interactive Atlas	n.d.	Athabasca University

Ontario Documents:

Number	Name	Date	Source
101	Technical Rules: Assessment Report, Clean Water Act 2006	2009	Government of Ontario
102	Protecting Ontario's Drinking Water: Toward a Watershed-based Source Protection Planning Framework	2003	Advisory Committee on Watershed-based Source Protection Planning
103	Reconciling our Priorities: Annual Report 2006-2007	2007	Environment Commissioner of Ontario
104	Submission in Response to Source Protection Reports by the Implementation Committee and	2005	Canadian Environmental Law

	the Technical Experts Committee		Association
105	Clean Water Act	2006	Government of Ontario
106	Policy decision notice update: administrative changes to the technical rules	2008	Ministry of the Environment
107	Summary Report: Consultation Sessions on the White Paper on Watershed-based Source Protection Planning	2004	Government of Ontario
108	The Clean Water Act: A Plain Language Guide	2007	Ministry of Environment
109	Official Report of Debates, August 24, 2006, Clean Water Act	2006	Standing Committee on Social Policy
110	Threats related to on-site sewage (septic) systems	2011	Ministry of Environment
111	Official Report of Debates, August 21, 2006, Clean Water Act	2006	Standing Committee on Social Policy
112	Draft Drinking Water Source Protection Act	2004	Ministry of Environment
113	Watershed-based Source Protection: Implementation Committee Report to the Minister of the Environment	2004	Implementation Committee
114	A Threats Assessment Framework	2004	Technical Experts Committee
115	White Paper on Watershed-based Source Protection Planning	2004	Ministry of Environment
116	Ministry of Environment Liaison Officer Program Update	2009	Ministry of Environment
117	Memorandum: Local municipalities receive funding from the Ministry of the Environment's Source Protection Implementation Fund	2013	York Region
118	Guide to proposed terms of reference	2009	Thames-Sydenham and Region Source Protection Committee
119	Preliminary identification of data and knowledge gaps, and research needs	2006	Watershed Science Centre
120	Thames-Sydenham and Region	2014	Thames-Sydenham and Region Source Protection Region Website
121	Thames Sydenham and Region Source Protection Committee Mission Statement and Guiding Principles	2008	Thames Sydenham and Region Source Protection Committee Website
122	Environmental Compliance in the Petrochemical Area in the Sarnia Area	2005	Ministry of Environment

123	Report on Spills in the Great Lakes Basin	2006	International Joint Commission
124	Sarnia-Lambton Environmental Association Website	Accessed 2014	Sarnia-Lambton Environmental Association
125	Sarnia-Lambton Environmental Association 2011 Progress Review Technical Summary	2011	Sarnia-Lambton Environmental Association
126	A Discussion Paper on Requirements for the Content and Preparation of Source Protection Plans	2009	Ministry of Environment
127	Ontario's Approach to Drinking Water Source Protection	n.d.	Sommer Casgrain-Robertson
128	Ontario Petroleum Institute Website	n.d.	Ontario Petroleum Institute
129	Ian Smith Compensation Letter	2009	Ministry of the Environment
130	2007 Ontario Soil and Crop Improvement Association Resolutions	2007	Ontario Soil and Crop Improvement Association
131	Farm Source Water Protection: OFEC Framework	2013	Ontario Farm Environmental Coalition
132	Source Protection Planning Bulletin - Overview of Source Protection Plan Requirements	2013	Ministry of Environment
133	Source Water Protection	2014	Ontario Auditor General
134	Draft Source Protection Plan - Intro and Background	2012	Thames Sydenham and Region Source Protection Committee
135	Draft Source Protection Plan - Oxford County	2012	Thames Sydenham and Region Source Protection Committee
136	Draft Source Protection Plan - no Oxford County	2012	Thames Sydenham and Region Source Protection Committee
137	Thames Sydenham and Region Source Protection Committee Source Protection Plan Explanatory Document	2014	Thames Sydenham and Region Source Protection Committee
138	Compiled Source Protection Plan Change Logs	2014	Thames Sydenham and Region Source Protection Committee
139	Source Protection Municipal Implementation Fund Recipients	2013	Ministry of the Environment and Climate Change

References

Abers, R. N. and Keck, M. E. 2009. Mobilizing the state: The erratic partner in Brazil's participatory water policy. *Politics & Society* 37(2): 289-314.

Advisory Committee on Watershed-based Source Protection Planning. 2003. *Protecting Ontario's Drinking Water: Toward a Watershed-Based Source Protection Planning Framework*: Ontario Ministry of the Environment.

Agranoff, R. and McGuire, M. 2003. *Collaborative Public Management: New Strategies for Local Governments*. Washington, D.C.: Georgetown University Press.

Alberta Energy. Department of Energy Key Initiatives. 2014. Edmonton, Alberta, Alberta Energy.

Alberta Environment. 2003. *Water for Life: Alberta's Strategy for Sustainability*, Publication Number I/955. Edmonton, Alberta: Alberta Environment.

Alberta Environment. 2005. *Water for Life: Enabling Partnerships*. Edmonton, Alberta: Alberta Environment.

Alberta Environment. 2008a. *Handbook for State of the Watershed Reporting*, A Guide for Developing State of the Watershed Reports in Alberta. Edmonton: Alberta Environment.

Alberta Environment. 2008b. *Land-Use Framework*. Edmonton, Alberta: Alberta Environment.

Alberta Environment and Sustainable Resource Development. Watershed Planning and Advisory Councils (WPACs). 2014. Edmonton, Alberta, Alberta Environment and Sustainable Resource Development.

Alberta Innovates. 2014. *2014-2017 Business Plan*. Edmonton: Government of Alberta.

Alberta Newsprint Company. 2014. *EnviroVista Progress Report*., Whitecourt: Alberta Newsprint Company.

Alberta Water Council. 2008a. *"What We Heard": Summary Findings of the Shared Governance-Watershed Management Planning Workshops*. Edmonton, Alberta: Alberta Water Council.

Alberta Water Council. 2008b. *Recommendations for a Watershed Management Planning Framework for Alberta*. Edmonton, AB: Alberta Water Council.

Alberta Water Council. 2008c. *Strengthening Partnerships: A Shared Governance Framework for Water for Life Collaborative Partnerships*. Edmonton, AB: Alberta Water Council.

Alberta Water Portal. Learn: Agriculture and Irrigation in Alberta. 2013. Edmonton, AB.

Ansell, C. and Gash, A. 2007. Collaborative governance in theory and practice. *Journal of Public Administration Research and Theory* 18(4): 543-571.

Arendt, H. 1970. *On Violence*. New York: Harcourt, Inc.

Armitage, D., F. Berkes, and N. Doubleday (ed). 2007. *Adaptive Co-Management: Collaboration, Learning, and Multi-Level Governance*, Vancouver, BC: UBC Press.

Armitage, D. R., Plummer, R., Berkes, F., Arthur, R. I., Charles, A. T., Davidson-Hunt, I. J., Diduck, A. P., Doubleday, N. C., Johnson, D. S., Marschke, M., McConney, P., Pinkerton, E. W., and Wollenburg, E. K. 2009. Adaptive co-management for social-ecological complexity. *Frontiers in Ecology and the Environment* 7(2): 95-102.

Ascher, W. and Steelman, T. 2013. Environmental policy and science, Chapter in *The Oxford Handbook of U.S. Environmental Policy*, ed. S. Kamieniecki and M. E. Kraft, 652-676. New York: Oxford University Press.

Athabasca Watershed Council. 2014. *Interactive Atlas*. Hinton: Athabasca Watershed Council.

Auld, G., Bernstein, S., and Cashore, B. 2008. The new corporate social responsibility. *Annual Review of Environment and Resources* 33: 413-435.

Auld, G. and Gulbrandsen, L. H. 2013. Private regulation in global environmental governance, Chapter in *The Handbook of Global Climate and Environmental Policy*, ed. R. Falkner, 394-411. West Sussex: Jon Wiley & Sons, Ltd.

Austin, J. E. and Seitanidi, M. M. 2012. Collaborative value creation: A review of partnering between nonprofits and businesses. Part 2: Partnership processes and outcomes. *Nonprofit and Voluntary Sector Quarterly* 41(6): 929-968.

Bachrach, P and Baratz, M. S. 1970. *Power and Poverty:Theory and Practice*. Oxford: Oxford University Press.

Bachrach, P. and Baratz, M. S. 1962. Two Faces of Power. *The American Political Science Review* 56(4): 947-952.

Baird, J., Velaniškis, J., Plummer, R., and FitzGibbon, J. 2014. Political legitimacy and collaborative water governance: an exploratory case study. *International Journal of Water Governance* 2(1).

Baldwin, D. A. 1989. *Paradoxes of Power*. Oxford: Basil Blackwell.

Barnett, M. and Duvall, R. 2005. *Power in Global Governance*. Cambridge: Cambridge University Press.

Barry, J. M. 2011. Mobilized bias and multistakeholder protected-area planning: a socio-institutional perspective on collaboration. *Society and Natural Resources* 24: 1116-1126.

Beetham, D. 2013. *The Legitimation of Power*, 2nd. New York: Palgrave Macmillan.

Benson, D., Fritsch, O., Cook, H., and Marylise, S. 2014. Evaluating participation in WFD river basin management in England and Wales: process, communities, outputs and outcomes. *Land Use Policy* 38: 213-222.

Benson, D., Jordan, A., Cook, H., and Smith, L. 2013. Collaborative environmental governance: are watershed partnerships swimming or are they sinking? *Land Use Policy* 30(1): 748-757.

Berg, B. L. 2009. *Qualitative Research Methods for the Social Sciences*, 7th Edition. Toronto: Allyn &Bacon.

Berkes, F. 2009. Evolution of co-management: role of knowledge generation, bridging organizations and social learning. *Journal of Environmental Management* 90(5): 1692-1702.

Bidwell, R. D. and Ryan, C. M. 2006. Collaborative partnership design: the implications of organizational affiliation for watershed partnerships. *Society and Natural Resources* 19: 827-843.

Bingham, L. B., Nabatchi, T., and O'Leary, R. 2005. The new governance: practices and processes for stakeholder and citizen participation in the work of government. *Public Administration Review* 65(5): 547-558.

Blackstock, K. L., Waylen, K. A., Dunglinson, J., and Marshall, K. M. 2012. Linking process to outcomes - Internal and external criteria for a stakeholder involvement in River Basin Management Planning. *Ecological Economics* 77: 113-122.

Bloor, M. and Wood, F. 2006. *Keywords in Qualitative Methods: A Vocabulary of Research Concepts*. California: Sage.

Borisova, T., Racevskis, L., and Kipp, J. 2012. Stakeholder analysis of a collaborative watershed management process: A Florida case study. *Journal of the American Water Resources Assocation* 48(2): 277-6.

Bow River Basin Council. Bow River Basin Council. http://www.brbc.ab.ca . 2015. Calgary, AB.

Brooks, S. and Stritch, A. 1991. *Business and Government in Canada*. Scarborough: Prentice-Hall Canada Inc.

Buanes, A., Jentoft, S., Karlsen, G. R., Maurstad, A., and Soreng, S. 2004. In whose interest? An exploratory analysis of stakeholders in Norwegian coastal zone planning. *Ocean and Coastal Management* 47: 207-223.

Bulkeley, H. and Mol, A. P. J. 2003. Participation and environmental governance: consensus, ambivalence and debate. *Environmental Values* 12: 143-154.

Caine, K. J. and Krogman, N. 2010. Powerful or just plain power-full? A power analysis of impact and benefit agreements in Canada's North. *Organization & Environment* 23(1): 76-98.

Campbell, J., Koontz, T. M., and Bonnell, J. E. 2011. Does collaboration promote grass-roots behavior change? Farmer adoption of best management pratices in two watersheds. *Society and Natural Resources* 24: 1127-1141.

Canadian Environmental Law Asssociation. 2004. *Final Submissions of the Canadian Environmental Law Association to the Ministry of the Environment Regarding the White Paper on Watershed-Based Source Protection Planning*, Publication #463. Toronto, Ontario: Canadian Environmental Law Asssociation.

Carlson, J. A. 2010. Avoiding traps in member checking. *The Qualitative Report* 15(5): 1102-1113.

Carlsson, L. and Berkes, F. 2005. Co-management: concepts and methodological implications. *Journal of Environmental Management* 75: 65-76.

Casgrain-Robertson, S. 2013. *Ontario's Approach to Drinking Water Source Protection*. Manotick, ON: Mississipi-Rideau Source Protection Authority.

Cerny, P. G. 2010. *Rethinking World Politics*, A Theory of Transnational Neopluralism. New York: Oxford University Press.

Charmaz, K. 2006. *Constructing Grounded Theory: A Practical Guide Through Qualitative Analysis*. Thousand Oaks, CA: Sage.

Clancy, P. 2014a. *Freshwater Politics in Canada*. Toronto: University of Toronto.

Clancy, P. 2014b. Group politics and water, Chapter in *Freshwater Politics in Canada* 36-56. Toronto: University of Toronto Press.

Clapp, J. and Fuchs, D. 2009. Agrifood corporations, global governance, and sustainability: A framework for analysis, Chapter in *Corporate Power in Global Agrifood Governance*, ed. J. Clapp and D. Fuchs, 1-26. The MIT Press.

Clapp, J. and Meckling, J. 2013. Business as a global actor, Chapter in *The Handbook of Global Climate and Environmental Policy*, ed. R. Falkner, 286-303. West Sussex: John Wiley & Sons, Ltd.

Clare, S., Krogman, N., and Caine, K. J. 2013. The "balance discourse": A case study of power and wetland management. *Geoforum* 49: 40-49.

Clegg, S. 1989. *Frameworks of Power*. Newbury Park: Sage Publications.

Cohen, A. and Bakker, K. 2014. The eco-scalar fix: Rescaling environmental governance and the politics of ecological boundaries in Alberta, Canada. *Environment and Planning D: Space and Society* 32: 128-146.

Conley, A. and Moote, M. A. 2003. Evaluating collaborative natural resource management. *Society and Natural Resources* 16(5): 371-386.

Connick, S. and Innes, J. E. 2003. Outcomes of collaborative water policy making: applying complexity thinking to evaluation. *Journal of Environmental Planning and Management* 46(2): 177-197.

Conservation Ontario. The Clean Water Act. 2013.

Cook, B. R., Kesby, M., Fazey, I., and Spray, C. 2013. The persistence of 'normal' catchment management despite the participatory turn: exploring the power effects of competing frames of reference. *Social Studies of Science* 43(5): 754-779.

Culley, M. R. and Angelique, H. 2011. Participation, power, and the role of community psychology in environmental disputes: A tale of two nuclear cities. *American Journal of Community Psychology* 47: 410-426.

Culley, M. R. and Hughey, J. 2008. Power and participation in a hazardous waste dispute: A community case study. *American Journal of Community Psychology* 41: 99-114.

Cutts, B. B., Muñoz-Erickson, T. A., Darby, K. J., Neff, M., Larson, E. K., Bolin, B., and Wutich, A. 2010. Ego network properties as a way to reveal conflict in collaboration's clothing. *Procedia Social and Behavioural Sciences* 4: 93-101.

Dahl, R. 1957. The concept of power. *Behavioural Science* 2(3): 201-215.

Dahl, R. 1961. *Who Governs?* Clinton: The Colonial Press Inc.

de Loë, R. C. and Morris, M. 2014. Cooperative transboundary water governance in Canada's Mackenzie River Basin: status and prospects, Chapter in *The Politics of River Basin Organisations: Coalitions, Institutional Design Choices and Consequences*, ed. D. Huitema and S. Meijerink, 67-95. Cheltenham, UK: Edward Elgar Publishing Limited.

Dewulf, A., Mancero, M., Cardenas, G., and Sucozhanay, D. 2011. Fragmentation and connection of frames in collaborative water governance: a case study of river catchment management in Southern Ecuador. *International Review of Administrative Sciences* 77: 50-75.

Doern, G. B. and Phidd, R. W. 1992. *Canadian Public Policy: Ideas, Structure, Process*, 2nd edition. Scarborough, ON: Nelson Canada.

Druckman, D. 2005. Comparative case study approaches, Chapter in *Doing Research*, ed. D. Druckman, 208-227. Thousand Oaks: Sage Publications, Inc.

Dryzek, J. S. 2000. *Deliberative Democracy and Beyond: Liberals, Critics, Contestations*. New York: Oxford University Press.

Duffy, R. J. 2007. Business, Elections, and the Environment, Chapter in *Business and Environmental Policy: Corporate Interests in the American Political System*, ed. M. E. Kraft and S. Kamieniecki, 61-90. Cambridge: The MIT Press.

Duffy, R. J. 2013. Organized interests and environmental policy, Chapter in *The Oxford Handbook of U.S. Environmental Policy*, ed. S. Kamieniecki and M. E. Kraft, 504-524. New York: Oxford University Press.

Duit, A. and Galaz, V. 2008. Governance and complexity -- emerging issues for governance theory. *Governance: An International Journal of Policy, Administration and Institutions* 21(3): 311-335.

Dür, A. and De Bièvre, D. 2007. The Question of Interest Group Influence. *Journal of Public Policy* 27(1): 1-12.

Echeverria, J. D. 2001. No success like failure: The Platte River collaborative watershed planning process. *William & Mary Environmental Law and Policy Review* 25(3): 559-604.

Emerson, K., Nabatchi, T., and Balogh, S. 2012. An integrative framework for collaborative governance. *Journal of Public Administration Research and Theory* 22(1): 1-29.

Emerson, K., Orr, P. J., Keyes, D. L., and McKnight, K. M. 2009. Environmental conflict resolution: Evaluating performance outcomes and contributing factors. *Conflict Resolution Quarterly* 27(1): 27-64.

Engelstad, F. 2009. Culture and power, Chapter in *The SAGE Handbook of Power*, ed. S. Clegg and M. Haugaard, 210-238. Thousand Oaks: SAGE Publications Ltd.

Environmental Commissioner of Ontario. 2007. "Clean Water Act", Chapter in *Reconciling our Prioirities, ECO Annual Report, 2006-07* 118-124. Toronto: Environmental Commissioner of Ontario.

Environmental SWAT Team. 2005. *Report of the Environmental SWAT Team*, Sarnia Inspection Sweep 2004-2005. Toronto: Queen's Printer for Ontario.

Eversole, R. 2011. Community agency and community engagement: Re-theorising participation in governance. *Journal of Public Policy* 31(1): 51-71.

Fairclough, I. and Fairclough, N. 2012. *Political Discourse Analysis: A Method for Advanced Students*, Routledge. London

Falkner, R. 2008. *Business Power and Conflict in International Environmental Politics*. New York: Palgrave Macmillan.

Falkner, R. 2012. Business power, business conflict: A neo-pluralist perspective on international environmental politics, Chapter in *Handbook of Global Environmental Politics*, ed. P. Dauvergne, 2, 319-329. Northampton: Edward Elgar.

Finger, M. and Svarin, D. 2012. Nonstate actors in global environmental governance, Chapter in *Handbook of Global Environmental Politics*, ed. P. Dauvergne, 2, 285-297. Northampton: Edward Elgar.

Fish, R. D., Ioris, A. A. R., and Watson, N. M. 2010. Integrating water and agricultural management: collaborative governance for a complex policy problem. *Science of the Total Environment* 408(23): 5623-5630.

Flyvbjerg, B. 1998a. Habermas and Foucault: Thinkers for Civil Society. *The British Journal of Sociology* 49(2): 210-233.

Flyvbjerg, B. 1998b. *Rationality and Power*: The University of Chicago.

Fortune Magazine. 2013. *Fortune 500*., New York: Time Inc. Network.

Foucault, M. and C. Gordon (ed). 1980. *Power/Knowledge: Selected Interviews and Other Writings, 1972 - 77*, New York: Pantheon.

Frame, T. M., Gunton, T., and Day, J. C. 2004. The role of collaboration in environmental management: an evaluation of land and resource planning in British Columbia. *Journal of Environmental Planning and Management* 47(1): 59-82.

Freudenburg, W. 2005. Privileged access, privileged accounts: toward a socially structure theory of resources and discourses. *Social Forces* 84(1): 89-114.

Fuchs, D. 2007. *Business Power in Global Governance*. Boulder: Lynne Rienner Publishers Inc.

Fuller, B. W. 2009. Surprising cooperation despite apparently irreconcilable differences: Agricultural water use efficiency and CALFED. *Environmental Science and Policy* 12: 663-673.

Fung, A. and Wright, E. O. 2003. *Deepening Democracy: Institutional Innovations in Empowered Participatory Governance* The Real Utopias Project IV. New York: Verso.

Furlong, S. R. 2007. Business and the Environment: Influencing Agency Policymaking, Chapter in *Business and Environmental Policy: Corporate Interests in the American Political System*, ed. M. E. Kraft and S. Kamieniecki, 155-184. Cambridge: The MIT Press.

Gambert, S. 2010. Territorial politics and the success of collaborative governance: local and regional partnerships compared. *Local Environment* 15(5): 467-480.

Gaventa, J. 1980. *Power and Powerlessness: Quiescence and Rebellion in an Appalachian Valley*. Oxford: Claredon Press.

Gaventa, J. 2006. Finding the spaces for change: A power analysis. *IDS Bulletin* 37(6): 23-33.

Gerlak, A. K. and Heikkila, T. 2011. Building a theory of learning in collaboratives: Evidence from the Everglades Restoration Program. *Journal of Public Administration Research and Theory* 21: 619-644.

Gerring, J. 2007. *Case Study Research: Principles and Practices*. New York: Cambridge University Press.

Goodin, R. E. and Dryzek, J. S. 2006. Deliberative impacts: the macro-political uptake of mini-publics. *Politics & Society* 34(2): 219-244.

Government of Alberta. 2000. *Alberta Irrigation Districts Act*. Edmonton, Alberta: Queen's Printing.

Government of Alberta. 2012. *Lower Athabasca Regional Plan: 2012-2022*. Edmonton, AB: Government of Alberta.

Government of Alberta. Economy. http://www.albertacanada.com/opportunity/choosing/economic-economy.aspx . 2015.

Government of Canada. Canada-Alberta Oil Sands. 2013. Ottawa, ON.

Government of Ontario. 2004. *Watershed-Based Source Protection Planning. Science-Based Decision-Making for Protecting Ontario's Drinking Water Resources: A Threats*

Assessment Framework, Technical Experts Committee report to the Minister of the Environment, Queen's Printer for Ontario.

Government of Ontario. 2006. *Clean Water Act*. Toronto, Ontario: Government of Ontario.

Gray, B. 1985. Conditions facilitating interorganizational collaboration. *Human Relations* 38(10): 911-936.

Gray, B. 1989. *Collaborating:Finding Common Ground for Multiparty Problems*. San Francisco: Jossey-Bass.

Guba, E. G. and Lincoln, Y. S. 2005. Paradigmatic controversies, contradictions, and emerging confluences, Chapter in *The Sage Handbook of Qualitative Research*, ed. N. K. Denzin and Y. S. Lincoln, 3rd, 191-216. Thousand Oaks, CA: Sage Publications.

Guber, D. and Bosso, C. J. 2013. Issue framing, agenda setting, and environmental discourse, Chapter in *The Oxford Handbook of U.S. Environmental Policy*, ed. S. Kamieniecki and M. E. Kraft, 437-460. New York: Oxford University Press.

Gunningham, N. 2009. The new collaborative environmental governance: the localization of regulation. *Journal of Law and Society* 36(1): 145-166.

Gunningham, N., Kagan, R. A., and Thornton, D. 2003. *Shades of Green: Business, Regulation, and Environment*. Stanford: Stanford University Press.

Habermas, J. 1981. *The Theory of Communicative Action: Reason and the Rationalization of Socety*. Boston: Beacon Press.

Hale, G. 2006. *Uneasy Partnership*, The Politics of Business and Government in Canada. Peterborough: Broadview Press.

Hania, P. 2013. Uncharted waters: applying the lens of new governance theory to the practice of water source protection in Ontario. *Journal of Environmental Law and Practice* 24(2): 177-221.

Hardy, S. D. 2010. Governments, group membership, and watershed partnerships. *Society and Natural Resources* 23(7): 587-603.

Harrison, K. 1996. *Passing the Buck: Federalism and Canadian Environmental Policy*. Vancouver, BC: University of British Columbia Press.

Haugaard, M. 2002. Introduction, Chapter in *Power: A Reader*, ed. M. Haugaard, 1-4. New York: Manchester University Press.

Haugaard, M. 2006. Conceptual Confrontation, Chapter in *Hegemony and Power*, ed. M. Haugaard and H. H. Lentner, 3-22. Toronto: Lexington Books.

Haugaard, M. and Clegg, S. 2009. Introduction: Why power is the central concept of the social sciences, Chapter in *The Sage Handbook of Power*, ed. S. Clegg and M. Haugaard, 1-24. Thousand Oaks: Sage Publications Inc.

Healey, P. 1997. *Collaborative Planning*, Shaping Places in Fragmented Societies. Vancouver: UBC Press.

Healey, P. 1998. Building institutional capacity through collaborative approaches to urban planning. *Environment and Planning A* 30: 1531-1546.

Heikkila, T. and Gerlak, A. 2005. The formation of large-scale collaborative resource management institutions: clarifying the roles of stakeholders, science, and institutions. *Policy Studies Journal* 33(4): 583-612.

Hessing, M., Howlett, M., and Summerville, T. 2005. *Canadian Natural Resource and Environmental Policy*, Political Economy and Public Policy, 2. Toronto: UBC Press.

Hirsch Hadorn, G., Bradley, D., Pohl, C., Rist, S., and Wiesmann, U. 2006. Implications of transdisciplinarity for sustainability research. *Ecological Economics* 60: 119-128.

Holley, C., Gunningham, N., and Shearing, C. 2012. *The New Environmental Governance*. London, UK: Routledge.

Howlett, M. 2009. Policy analytical capacity and evidence-based policy-making: Lessons from Canada. *Canadian Public Administration* 52(2): 153-175.

Howlett, M. and Brownsey, K. 2008. Introduction: Toward a Post-Staples State, Chapter in *Canada's Resource Economy in Transition: The Past, Present, and Future of Canadian Staples Industry*, ed. M. Howlett and K. Brownsey, 4-18. Toronto: Edmond Montgomery Publications Limited.

Howlett, M. and Ramesh, M. 1995. *Studying Public Policy: Policy Cycles and Policy Subsystems*. Canada: Oxford University Press.

Howlett, M., Ramesh, M., and Perl, A. 2009. *Studying Public Policy*, Policy Cycles and Policy Subsystems, 3rd. New York: Oxford University Press.

Howlett, M. and Rayner, J. 2006. Convergence and divergence in 'new governance' arrangements: Evidence from European integrated natural resource strategies. *Journal of Public Policy* 26(2): 167-189.

Huffman, J. L. 2009. Comprehensive river basin management: The limits of collaborative, stakeholder-based, water governance. *Natural Resources Journal* 49: 117-149.

Huxham, C., Vangen, S., Huxham, C., and Eden, C. 2000. The challenge of collaborative governance. *Public Management: An International Journal of Reserach and Theory* 2(3): 337-358.

Imperial, M. T. 2005. Using collaboration as a governance strategy: lessons from six watershed management programs. *Administration and Society* 37(3): 281-320.

Innes, J. and Booher, D. 2004. Reframing public participation: strategies for the 21st century. *Planning Theory & Practice* 5(4): 419-436.

Innes, J., Connick, S., and Booher, D. 2007. Collaborative water management in the CALFED Bay-Delta program. *Journal of the American Planning Association* 73(2): 195-210.

Innes, J. E. and Booher, D. E. 1999. Consensus building and complex adaptive systems: a framework for evaluating collaborative planning. *Journal of the American Planning Association* 65(4): 412-422.

Innes, J. E. and Booher, D. E. 2003. Collaborative policymaking: governance through dialogue, Chapter in *Deliberative Policy Analysis: Understanding Governance in the Network Society*, ed. M. Hajer and H. Wagenaar, 51-77. Cambridge: Cambridge University Press.

Innes, J. E. and Booher, D. E. 2010. *Planning With Complexity: An Introduction to Collaborative Rationality for Public Policy*. New York: Routledge.

Innes, J. E., Booher, D. E., and Di Vittorio, S. 2011. Strategies for megaregion governance: Collaborative dialogue, networks, and self-organization. *Journal of the American Planning Association* 77(1): 55-67.

International Joint Commission. 2006. *Report on Spills in the Great Lakes Basin*, with a Special Focus on the St. Clair-Detroit River Corridor. Ottawa: International Joint Commission.

Irvin, R. and Stansbury, J. 2004. Citizen participation in decision making: is it worth the effort? *Public Administration Review* 64(1): 55-65.

Jentoft, S. 2007. In the power of power: the understated aspect of fisheries and coastal management. *Human Organization* 66(4): 426-437.

Jordaan, S. M. 2012. Land and water impacts of Oil Sands production in Alberta. *Environmental Science and Technology* 46: 3611-3617.

Judkins, G. L. and Larson, K. L. 2010. The Yuma desalting plant and Cienaga de Santa Clara dispute: a case study review of a workgroup process. *Water Policy* 12: 401-415.

Kallis, G., Kipping, M., and Norgaard, R. 2009. Collaborative governance and adaptive management: lessons from California's CALFED water program. *Environmental Science and Policy* 12(6): 631-643.

Kamieniecki, S. and M. E. Kraft (ed). 2013. *The Oxford Handbook of U.S. Environmental Policy*, Toronto: Oxford University Press.

Kellert, S. R., Mehta, J. N., Ebbin, S. A., and Lichtenfeld, L. L. 2000. Community natural resource management: promise, rhetoric, and reality. *Society and Natural Resources* 13(8): 705-715.

Kelly, E. N., Schindler, D. W., Hodson, P. V., Short, J. W., Radmanovich, R., and Nielsen, C. C. 2010. Oil sands development contributes elements toxic at low concentrations to the Athabasca River and its tributaries. *Proceedings of the National Academy of Science* 107(37): 16178-16183.

Koehler, B. and Koontz, T. M. 2008. Citizen participation in collaborative watershed partnerships. *Environmental Management* 41: 143-154.

Kollman, K. 1998. *Outside Lobbying: Public Opinion and Interest Group Strategies*. Princeton: Princeton University Press.

Kooiman, J., Bavinck, M., Chuenpagdee, R., Mahon, R., and Pullin, R. 2008. Interactive governance and governability: an introduction. *Journal of Transdisciplinary Envrionmental Studies* 7(1): 1-11.

Koontz, T. M. 2005. We finished the plan, so now what? Impacts of collaborative stakeholder participation on land use policy. *Policy Studies Journal* 33(3): 459-481.

Koontz, T. M. and Newig, J. 2014. From planning to implementation: Top-down and bottom-up approaches for collaborative watershed management. *The Policy Studies Journal* 42(3): 416-442.

Koontz, T. M., Steelman, T., Carmin, J., Korfmacher, K. S., Moseley, C., and Thomas, C. W. 2004. *Collaborative Environmental Management: What Roles for Government?* Washington D.C.: Resources for the Future Press.

Koontz, T. M. and Thomas, C. W. 2006. What do we know and need to know about the environmental outcomes of collaborative management? *Public Administration Review* 66(Supplement 1): 111-120.

Kraft, M. E. and Kamieniecki, S. 2007. Analyzing the Role of Business in Environmental Policy, Chapter in *Business and Environmental Policy: Corporate Interests in the American Political System*, ed. M. E. Kraft and S. Kamieniecki, 3-32. Cambridge: The MIT Press.

Lake Erie Region Source Protection Committee. 2014. *Meeting Agenda*: Lake Erie Region Source Protection Committee.

Lake Erie Source Protection Committee. Lake Erie Source Protection Region. http://www.sourcewater.ca/index.cfm . 2015.

Lane, M. B. and Robinson, C. J. 2009. Institutional complexity and environmental management: The challenge of integration and the promise of large-scale collaboration. *Australasian Journal of Environmental Management* 16(1): 16-24.

Layzer, J. A. 2007. Deep Freeze: How Business Has Shaped the Global Warming Debate in Congress, Chapter in *Business and Environmental Policy*, ed. M. E. Kraft and S. Kamieniecki, 93-126. Cambridge: The MIT Press.

Leach, M., Mearns, R., and Scoones, I. 1999. Environmental entitlements: dynamics and institutions in community-based natural resource management. *World Development* 27(2): 225-247.

Leach, W. D., Pelkey, N. W., and Sabatier, P. A. 2002. Stakeholder partnerships as collaborative policymaking: evaluation criteria applied to watershed management in California and Washington. *Journal of Policy Analysis and Management* 21(4): 645-670.

Leach, W. D. and Sabatier, P. A. 2005. Are trust and social capital keys to success? Watershed partnerships in California and Oregon, ed. P. A. Sabatier et al., 233-258. Cambridge: MIT Press.

Legislative Assembly of Ontario. Official Report of Debates: Clean Water Act. Standing
    Committee on Social Policy. 2006.

Lemos, M. C. and Agrawal, A. 2006. Environmental governance. *Annual Review of Environment
    and Resources* 31: 297-325.

Levy, D. L. 2012. Private actors and strategies in global environmental governance: the role of
    information disclosure, Chapter in *Handbook of Global Environmental Politics*, ed. P.
    Dauvergne, 2nd, 308-318. Northampton: Edward Elgar.

Levy, D. L. and Newell, P. 2005a. A neo-Gramscian approach to business in international
    environmental politics: An interdisciplinary, multilevel framework, Chapter in *The
    Business of Global Environmental Governance*, ed. D. L. Levy and P. Newell, 47-69.
    Cambridge: Massachusetts Institute of Technology.

Levy, D. L. and Newell, P. 2005b. Introduction: the business of global environmental
    governance, Chapter in *The Business of Global Environmental Governance*, ed. D. L.
    Levy and P. Newell, 1-20. Cambridge: The MIT Press.

Lindblom, C. E. 1977. *Politics and Markets*. New York: Basic Books Inc.

Lockwood, M., Davidson, J., Curtis, A., Stratford, E., and Griffith, R. 2009. Multi-level
    environmental governance: lessons from Australian natural resource management.
    Australian Geographer 40(2): 169-186.

Lockwood, M., Davidson, J., Curtis, A., Stratford, E., and Griffith, R. 2010. Governance
    principles for natural resource management. *Society and Natural Resources* 23: 986-
    1001.

Lubell, M. 2004a. Collaborative environmental insitutions: All talk and no action? *Journal of
    Policy Analysis and Management* 23(3): 549-573.

Lubell, M. 2004b. Collaborative watershed management: a view from the grassroots. *Policy
    Studies Journal* 32(3): 341-361.

Lubell, M. and Lippert, L. 2011. Integrated regional water management: a study of collaboration
    or water politics-as-usual in California, USA. *International Review of Administrative
    Sciences* 77(1): 76-100.

Luginaah, I., Smith, K., and Lockridge, A. 2010. Surrounded by Chemical Valley and 'living in a
    bubble': the case of the Aamjiwnaang First Nation, Ontario. *Journal of Environmental
    Planning and Management* 53(3): 353-370.

Lukes, S. 2005. *Power: A Radical View*, 2nd edition. Basingstoke: Palgrave Macmillan.

Macdonald, D. 2007. *Business and Environmental Politics in Canada*. Peterborough: Broadview
    Press.

MacDonald, D. 2007. *Business and Environmental Politics in Canada*. Peterborough: Broadview
    Press.

Mandarano, L. A. and Paulsen, K. 2011. Governance capacity in collaborative watershed partnerships: evidence from the Philadelphia region. *Journal of Environmental Planning and Management* 54(10): 1293-1313.

Mann, M. 2012. *The Sources of Social Power: A History of Power From the Beginning to AD 1760*, 2, vol. 1. New York: Cambridge University Press.

Margerum, R. D. 2007. Overcoming locally based collaboration constraints. *Society and Natural Resources* 20(2): 135-152.

Margerum, R. D. 2008. A typology of collaboration efforts in environmental management. *Environmental Management* 41: 487-500.

Margerum, R. D. 2011. *Beyond Consensus: Improving Collaborative Planning and Management*. Cambridge, MA: MIT Press.

Margerum, R. D. and Robinson, C. J. 2015. Collaborative partnerships and the challenges for sustainable water management. *Current Opinion in Environmental Sustainability* 12: 53-58.

Marshall, K., Blackstock, K. L., and Dunglinson, J. 2010. A contextual framework for understanding good practice in integrated catchment management. *Journal of Environmental Planning and Management* 53(1): 63-89.

Mason, J. 2004. Semistructured Interview, Chapter in *The Sage Encyclopedia of Social Science Research Methods*, ed. M. Lewis-Beck, A. Bryman, and T. Futing Liao, 1021-1022. Thousand Oaks: Sage Publications.

McClosky, M. 2000. Problems with using collaboration to shape environmental public policy. *Valparaiso University Law Review* 34: 423-434.

McFarland, A. S. 2004. *Neopluralism: The Evolution of Political Process Theory*. Lawrence: University Press of Kansas.

Memon, A., Painter, B., and Weber, E. 2010. Enhancing potential for integrated catchment managmenet in New Zealand: a multi-scalar, strategic perspective. *Australasian Journal of Environmental Management* 17(1): 35-44.

Memon, A. and Weber, E. P. 2010. Overcoming obstacles to collaborative water governance: moving toward sustainability in New Zealand. *Journal of Natural Resources Policy Research* 2(2): 102-116.

Memon, P. A. and Kirk, N. 2012. Role of indigenous Maori people in collaborative water governance in Aotearoa/New Zealand. *Journal of Environmental Planning and Management* 55(7): 941-959.

Moellenkamp, S., Lamers, M., Huesmann, C., Rotter, S., Pahl-Wostl, C., Speil, K., and Pohl, W. 2010. Informal participatory platforms for adaptive management. Insights into niche-finding, collaborative design and outcomes from a participatory process in the Rhine Basin. *Ecology and Society* 15(4): 41-64.

Murray, D. 2005. A critical analysis of communicative rationality as a theoretical underpinning for collaborative approaches to integrated resource and environmental management. *Environments* 33(2): 17-35.

Neef, A. 2009. Transforming rural water governance: towards deliberative and polycentric models? *Water Alternatives* 2(1): 1-8.

Nelson, P., Krogman, N., Johnston, L., and Cassady St.Clair, C. 2014. Dead ducks and dirty oil: Media respresenations and environmental solutions. *Society and Natural Resources*: 1-15.

Newell, P. 2005. Business and international environmental governance: the state of the art, Chapter in *The Business of Global Environmental Governance*, ed. D. L. Levy and P. Newell, 21-46. Cambridge: The MIT Press.

Newell, P. 2012a. *Globalization and the Environment: Capitalism, Ecology and Power*. Cambridge: Polity Press.

Newell, P. 2012b. The political ecology of globalization, Chapter in *Handbook of Global Environmental Politics*, ed. P. Dauvergne, 2, 263-274. Northampton: Edward Elgar.

Newig, J. and Fritsch, O. 2009. Environmental governance: participatory, multi-level -- and effective? *Environmental Policy and Governance* 19(3): 197-214.

Newig, J. and Koontz, T. M. 2014. Multi-level governance, policy implementation and participation: the EU's mandated participatory planning approach to implementing environmental policy. *Journal of European Public Policy* 21(2): 248-267.

North Saskatchewan Watershed Alliance. 2012. *Integrated Watershed Management Plan for the North Saskatchewan River in Alberta*. E: The North Saskatchewan Watershed Alliance Society.

North Saskatchewan Watershed Alliance. North Saskatchewan Watershed Alliance. http://www.nswa.ab.ca . 2015.

North, D. C. 1991. Institutions. *The Journal of Economic Perspectives* 5(1): 97-112.

Nowlan, L. and Bakker, K. 2010. *Practising Shared Water Governance in Canada: A Primer*. Vancouver, BC: UBC Program on Water Governance.

O'Connor, D. R. 2002a. *Report of the Walkerton Inquiry: Part One, The Events of May 2000 and Related Issues*. Toronto, Ontario: Queen's Printer for Ontario.

O'Connor, D. R. 2002b. *Report of the Walkerton Inquiry: Part One, The Events of May 2000 and Related Issues: A Summary*. Toronto, Ontario: Queen's Printer for Ontario.

O'Connor, D. R. 2002c. *Report of the Walkerton Inquiry: Part Two, A Strategy for Safe Drinking Water*. Toronto, Ontario: Ontario Ministry of the Attorney General, Queen's Printer for Ontario.

O'Leary, R. and Bingham, L. B. 2009. *The Collaborative Public Manager: New Ideas for the Twenty-First Century*. Washington, D.C.: Georgetown University Press.

Office of the Auditor General of Ontario. 2014. Source Water Protection, Chapter in *Annual Report 2014* 407-433. Toronto: Queen's Printer for Ontario.

Ontario. 2004. *Watershed Based Source Protection: Implementation Committee*, Report to the Minister of the Environment, Queen's Printer for Ontario.

Ontario Farm Environmental Coalition. 2013. *Farm Source Water Protection*, OFEC Framework. Guelph, ON: Ontario Federation of Agriculture.

Ontario Ministry of Environment. 2004. *White Paper on Watershed-Based Source Protection Planning*: Queen's Printer for Ontario (Integrated Environmental Planning Division, Strategic Policy Branch Ministry of the Environment).

Ontario Ministry of Environment. 2009. *Technical Rules: Assessment Report. Clean Water Act, 2006*. Toronto, ON: Ontario Ministry of Environment.

Ontario Ministry of the Environment. 2009. *Source Protection Plans Under the Clean Water Act, 2006*, A discussion paper on requirements for the content and preparation of source protection plans. T: Ontario Ministry of the Environment.

Ontario Ministry of the Environment. 2013. *Source Protection Municipal Implementation Fund Recipients*, Ontario Ministry of the Environment. T: =Ontario Ministry of the Environment.

Ontario Soil and Crop Improvement Association. 2007. 2007 OSCIA Resolutions. Unpublished.

Ostrom, E. 1990. *Governing the Commons: The Evolution of Institutions for Collective Action*. Cambridge: Cambridge University Press.

Palen, W. J., Sisk, T. D., Ryan, M. E., Arvai, J. L., Jaccard, M., Salomon, A. K., Homer-Dixon, T. F., and Lertzman, K. P. 2014. Consider the global impacts of oil pipelines. *Nature* 410(7506): 465-467.

Pares, M. 2011. River basin management planning with participation in Europe: From contested hydro-politics to governance-beyond-the-state. *European Planning Studies* 19(3): 457-478.

Parker, J. S., Moore, R., and Weaver, M. 2009. Developing participatory models of watershed management in the Sugar Creek Watershed (Ohio, USA). *Water Alternatives* 2(1): 82-100.

Parkins, J. R. 2010. The problem with trust: Insights from advisory committees in the forest sector of Alberta. *Society and Natural Resources* 23(9): 822-836.

Parkins, J. R. and Mitchell, R. E. 2005. Public participation as public debate: a deliberative turn in natural resource management. *Society and Natural Resources* 18(6): 529-540.

Parkinson, J. 2003. Legitimacy Problems in Deliberative Democracy. *Political Studies* 51(1): 180-196.

Parsons, R. and Moffat, K. 2014. Constructing the meaning of social license. *Social Epistemology* 28(3-4): 340-363.

Parsons, T. 1963. On the concept of political power. *Proceedings of the American Philosophical Society* 107(3): 232-262.

Pearce II, J. A. and Doh, J. P. 2005. The high impact of collaborative social initiatives. *MIT Sloan Management Review* 46(3): 30-3.

Petticrew, M. and Roberts, H. 2006. *Systematic Reviews in the Social Sciences: A Practical Guide*. Oxford, UK: Blackwell Publishing.

Plummer, R. and FitzGibbon, J. 2004. Some observations on the terminology in co-operative environmental management. *Journal of Environmental Management* 70: 63-72.

Progressive Conservative Association of Alberta. Statement of Principles. https://www.pcalberta.org/CMSArticle?name=Statement+Of+Principles . 2015.

Province of Alberta. 2000a. *Mines and Minerals Act*. Edmonton: Alberta Queen's Printer.

Province of Alberta. 2000b. *Water Act*, Revised Statutes of Alberta 2000 Chapter W-3. Edmonton: Alberta Queen's Printer.

Province of Ontario. 1990. *Conservation Authorities Act*. Toronto: =Queen's Printer for Ontario.

Province of Ontario. 2001. *Ontario Water Resources Act*. Ontario: Province of Ontario.

Rabe, B. and Mundo, P. A. 2007. Business Influence in State-Level Environmental Policy, Chapter in *Business and Environmental Policy*, ed. M. E. Kraft and S. Kamieniecki, 265-298. Cambridge: The MIT Press.

Raik, D. B. and Wilson, A. L. 2006. Planning in collaborative wildlife management: a critical perspective. *Journal of Environmental Planning and Management* 49(3): 321-336.

Raik, D. B., Wilson, A. L., and Decker, D. J. 2008. Power in Natural Resources Management: An Application of Theory. *Society and Natural Resources* 21(8): 729-739.

Reed, M. G. and Bruyneel, S. 2010. Rescaling environmental governance, rethinking the state: a three-dimensional review. *Progress in Human Geography* 34(5): 646-653.

Rhodes, R. A. W. 1996. The new governance: governing without government. *Political Studies* 44(4): 652-667.

Ribot, J. C. and Peluso, N. L. 2003. A theory of access. *Rural Sociology* 68(2): 153-181.

Robinson, C. J., Margerum, R. D., Koontz, T. M., Moseley, C., and Lurie, S. 2011. Policy-level collaboratives for environmental management at the regional scale: lessons and challenges from Australia and the United States. *Society and Natural Resources* 24(8): 849-859.

Rogers, P. and Hall, A. W. 2003. *Effective Water Governance*, TEC Background Papers No. 7, Global Water Partnership Technical Committee (TEC) Background Papers. Stockholm, Sweden: Global Water Partnership.

Rooney, R. C., Bayley, S. E., and Schindler, D. E. 2012. Oil sands mining and reclamation cause massive loss of peatland and stored carbon. *Proceedings of the National Academy of Science* 109(13): 4933-4937.

Roy, J. 2007. *Business and Government in Canada*. Ottawa: University of Ottawa Press.

Sabatier, P., Focht, W., Lubell, M., Trachtenberg, Z., Vedlitz, A., and Matlock, M. 2005a. Collaborative approaches to watershed management, Chapter in *Swimming Upstream: Collaborative Approaches to Watershed Management*, ed. P. Sabatier et al., 3-22. Cambridge, MA: MIT Press.

Sabatier, P., W. Focht, M. Lubell, Z. Trachtenberg, A. Vedlitz, and M. Matlock (ed). 2005. *Swimming Upstream: Collaborative Approaches to Watershed Management*, Cambridge, MA: The MIT Press.

Sabatier, P., Leach, W. D., Lubell, M., and Pelkey, N. 2005b. Theoretical frameworks explaining parternship success, Chapter in *Swimming Upstream: Collaborative Approaches to Watershed Management*, ed. P. Sabatier et al., 173-200. Cambridge, MA: MIT Press.

Saldaña, J. 2009. *The Coding Manual for Qualitative Researchers*. Thousand Oaks, CA: SAGE.

Sarnia Lambton Environmental Association. 2011. *Progress Review Technical Summary*., Sarnia: Sarnia Lambton Environmental Association.

Sarnia Lambton Environmental Association. 2013. *Progress Review Technical Summary*. Sarnia: Sarnia Lambton Environmental Association.

Schattschnieder, E. E. 1960. *The Semisovereign People*, A Realist's View of Democracy in America. Toronto: Holt, Rineheart and Winston.

Schindler, D. E. 2014. Unravelling the complexity of pollution by the oil sands industry. *Proceedings of the National Academy of Science* 111(9): 3209-3210.

Schmidt, J. 2014. Water management and the procedural turn: Norms and transitions in Alberta. *Water Resources Management* 28: 1127-1141.

Schmidt, V. A. 2008. Discursive institutionalism: The explanatory power of ideas and discourse. *Annual Review of Political Science* 11: 303-326.

Schrecker, T. 2005. Class, Place, and Citizenship: The Changing Dynamics of Environmental Protection, Chapter in *Managing Leviathan*, ed. R. Paehlke and D. Torgerson, 2, 125-144. Peterborough: Broadview Press.

Shapiro, I. 2006. On the second edition of Lukes' third face. *Political Studies Review* 4: 146-155.

Shilling, F. M., London, J. K., and Lievanos, R. S. 2009. Marginalization by collaboration: Environmental justice as a third party in and beyond CALFED. *Environmental Science and Policy* 12: 694-709.

Smith, I. 2009. Letter to Source Protection Committee Chairs. Unpublished.

Smith, P. J. and B. M. Barr (ed). 1984. *Environment and Economy: Essays on the Human Geography of Alberta*, Edmonton: Pica Pica Press.

Stake, R. E. 2005. Qualitative Case Studies, Chapter in *The Sage Handbook of Qualitative Research*, ed. N. K. Denzin and Y. S. Lincoln, 3rd, 443-466. Thousand Oaks: Sage Publications.

Stoker, G. 1998. Governance as theory: five propositions. *International Social Science Journal* 50(155): 17-28.

Strange, S. 1996. *The Retreat of the State: The Diffusion of Power in the World Economy*. Cambridge: Cambridge University Press.

Strauss, A. and Corbin, J. 1998. *Basics of Qualitative Research: Techniques and Procedures for Developing Grounded Theory*. Thousand Oaks, CA: SAGE Publications.

Suncor Energy Inc. 2012. *Carbon Disclosure Project 2012 Water Disclosure*., Calgary: Suncor Energy Inc.

Suncor Energy Inc. 2014. *Framing the Next Conversation: Report on Sustainability*., Calgary: Suncor Energy Inc.

Swyngedouw, E. 2005. Governance innovation and the citizen: the Janus face of governance-beyond-the-state. *Urban Studies* 42(11): 1991-2006.

Swyngedouw, E. 2006. *Power, Water and Money: Exploring the Nexus*: United Nations Human Development Report Office.

Takeda, L. and Ropke, I. 2010. Power and contestation in collaborative ecosystem-based management: The case of Haida Gwaii. *Ecological Economics* 70: 178-188.

Tan, P. L., Bowmer, K. H., and Baldwin, C. 2012. Continued challenges in the policy and legal framework for collaborative water planning. *Journal of Hydrology* 474: 84-91.

Taylor, B. and de Loë, R. 2012. Conceptualizations of local knowledge in collaborative environmental governance. *Geoforum* 43: 1207-1217.

Thames, Sydenham and Region Source Protection Committee. 2014a. *Change Logs*, Source Protection Plan Changes. London: Thames, Sydenham and Region Source Protection Committee.

Thames, Sydenham and Region Source Protection Committee. 2014b. *Source Protection Plan Explanatory Document*. London: Thames, Sydenham and Region Source Protection Committee.

Thames-Sydenham and Region Source Protection Committee. 2008. *Mission Statement and Guiding Principles*, Summary Document. London: Thames, Sydenham and Region Source Protection Committee.

The Canadian Press.2014 Groups Asky Why No Charges Have Been Laid a Year After Alberta Coal Mine Spill. *The Globe and Mail*.

Torgerson, C. 2003. *Systematic Reviews*. New York: Continuum International Publishing.

Torgerson, D. 2005a. Environmental Politics and Policy Professionalism: Agenda Setting, Problem Definition, and Epistemology, Chapter in *Managing Leviathan: Environmental Politics and the Administrative State*, ed. R. Paehlke and D. Torgerson, 171-190. Peterborough: Broadview Press.

Torgerson, D. 2005b. The Ambivalence of Discourse: Beyond the Administrative Mind?, Chapter in *Managing Leviathan: Environmental Politics and the Administrative State*, ed. R. Paehlke and D. Torgerson, 97-124. Peterborough: Broadview Press.

Trachtenberg, Z. and Focht, W. 2005. Legitimacy and watershed collaborations: the role of public participation, Chapter in *Swimming Upstream: Collaborative Approaches to Watershed Management*, ed. P. Sabatier et al., 53-82. Cambridge, MA: MIT Press.

Trent Conservation Coalition Source Protection Committee. Drinking Water Source Protection. 2015.

Unger, J. 2009. *Consistency and Accountability in Implementing Watershed Plans in Alberta*, A jurisdictional review and recommendations for reform. Edmonton, AB: Environmental Law Centre.

Van Buuren, A., Klijn, E. H., and Edelenbos, J. 2012. Democratic legitimacy of new forms of water management in the Netherlands. *Journal of Water Resources Development* 28(4): 629-645.

Van Riper, L. 2012. The interagency creeks and communities strategy: Creating healthy streams and wetlands by bringing people together. *Rangelands* 34(4): 5-10.

van Tol Smit, E., de Loe, R., and Plummer, R. 2015. How knowledge is used in collaborative environmental governance: water classification in New Brunswick, Canada. *Journal of Environmental Planning and Management* 58(3): 423-444.

von der Porten, S. and de Loë, R. C. 2013a. Collaborative approaches to governance for water and Indigenous peoples: a case study from British Columbia, Canada. *Geoforum* 50: 149-160.

von der Porten, S. and de Loë, R. C. 2013b. Water governance and Indigenous governance: Towards a synthesis. *Indigenous Policy Journal* XXIII(4): Online.

von der Porten, S. and de Loë, R. C. 2014. How collaborative approaches to environmental problem solving view Indigenous peoples: a systematic review. *Society and Natural Resources* 27(10): 1040-1056.

Wallis, P. J. and Ison, R. L. 2011. Appreciating institutional complexity in water governance dynamics: a case from the Murray-Darling Basin, Australia. *Water Resources Management* 25(15): 4081-4097.

Watson, N., Deeming, H., and Treffny, R. 2009. Beyond bureaucracy? assessing institutional change in the governance of water in England. *Water Alternatives* 2(3): 448-460.

Weber, E. P. 2009. Explaining institutional change in tough cases of collaboration: "Ideas" in the Blackfoot Watershed. *Public Administration Review* 69(2): 314-327.

Weber, E. P. and Khademian, A. M. 2008. Wicked problems, knowledge challenges, and collaborative capacity builders in network settings. *Public Administration Review* 68(2): 334-349.

Weber, M. 1978. *Economy and Society*. Los Angeles: University of California Press.

Weible, C. 2011. Political-administrative relations in collaborative environmental management. *International Journal of Public Administration* 34(7): 424-435.

Williams, M. 2012. Knowledge, power and global environmental policy, Chapter in *Handbook of Global Environmental Politics*, ed. P. Dauvergne, 443-454. Northampton: Edward Elgar.

Winfield, M. 2012. *Blue-Green Province*, The Environment and the Political Economy of Ontario. Vancouver: UBC Press.

Woll, C. 2007. Leading the dance? power and political resource of business lobbyists. *Journal of Public Policy* 27(1): 57-78.

Wondolleck, J. M. and Yaffee, S. L. 2000. *Making Collaboration Work: Lessons From Innovation in Natural Resources Management*. Washington, DC: Island Press.

Wu, X., Ramesh, M., Howlett, M., and Fritzen, S. A. 2010. *The Public Policy Primer*, Managing the Policy Process, Routledge Textbooks in Policy Studies. New York: Routledge.

Yin, R. K. 2009. *Case Study Research: Design and Methods*, 4th edition, Applied Social Research Methods Series, vol. 5. Thousand Oaks, California: Sage Publications.

Zeitoun, M. and Allan, J. A. 2008. Applying hegemony and power theory to transboundary water analysis. *Water Policy* 10(Supplement 2): 3-12.