Fisheries-related Collaboration in the Skeena River Watershed: Impacts and Implications of Historical Conflict

by

Diana Freethy

A Dissertation Submitted to the Faculty of Social and Applied Sciences

in Partial Fulfilment of the Requirements for the Degree of

Doctor of Social Sciences

Royal Roads University

Victoria, British Columbia, Canada

Supervisor: Dr. Leslie, King

April 2016

COMMITTEE APPROVAL

The members of Diana Freethy's Dissertation Committee certify that they have read the dissertation titled *Fisheries-related Collaboration in the Skeena River Watershed: Impacts and Implications of Historical Conflict* and recommend that it be accepted as fulfilling the dissertation requirements for the Degree of Doctor of Social Sciences:

Dr. Leslie King [signature on file]
Dr. Jennifer Walinga [signature on file]
Dr. Siomonn Pulla [signature on file]

Final approval and acceptance of this dissertation is contingent upon submission of the final copy of the dissertation to Royal Roads University. The dissertation supervisor confirms to have read this dissertation and recommends that it be accepted as fulfilling the dissertation requirements:

Dr. Leslie King [signature on file]

Creative Commons Statement

Author Note

Diana Freethy conducted this doctoral research while employed by the Department of Fisheries and Oceans Canada in Prince Rupert, British Columbia, Canada.

Diana Freethy now works for British Columbia's Ministry of Forests, Lands and Natural Resource Operations in Nanaimo, British Columbia, Canada.

The author's employment experiences are noted in Chapter 1 as a driver for this dissertation, and possible perceptions of bias in this research related to employment history are identified and addressed in Chapter 2.

This research was supported financially by: a Mitacs-Accelerate Graduate Research Internship Program award with partner organizations of the Pacific Salmon Foundation and the Canadian Fishing Company; the Department of Fisheries and Oceans Canada; and by the author.

This research was graciously supported by my doctoral supervisor Dr. Leslie King, and by supervising committee members Dr. Jennifer Walinga and Dr. Siomonn Pulla, as well as Dr. Marcelle DuPraw who provided thoughtful feedback as the external reviewer of this dissertation.

Correspondence concerning this dissertation can be sent to Diana Freethy via email at freethy.skeenaresearch@gmail.com

Abstract

Conflict has surrounded Skeena fisheries management on British Columbia's north coast for decades however limited Skeena-specific collaborative fisheries management research (Jones, 2006; Knox, 2008; Pinkerton, 1996, 2009b; Wood, 2001) has been conducted. The objectives of this research were to identify, from participant perspectives, collaborative successes, challenges, and associated impacts of two historical fisheries-related collaborative processes, the Skeena Watershed Committee and the Skeena Watershed Initiative, and to develop practical recommendations based on new knowledge. While communications-related benefits such as relationship building were identified, challenges such as long-standing historical conflict, collaborative process design deficiencies, and external factors (e.g. reduced commercial fishing opportunities) were found to be barriers to collaboration. Findings suggest that collaboration at a watershed scale may be inappropriate at this time due to a lack of willingness to cooperate, the historical context of conflict, the impact of external drivers, and continued participation of historical collaborative Skeena participants in ongoing fisheries-related discussions. Conflicts identified during both processes were fisheries management-focussed and led to recommendation of a tri-party collaborative governance working group as an adjunct to an existing federal advisory body, the Salmon Integrated Harvest Planning Committee. Recommendations include a Skeena leadership model and practical collaborative process-design guidance intended to address conflict and interjurisdictional issues, provide relationship-building opportunities and enhance cooperative behaviour, and support independent science-related information development to inform Skeena-specific discussions.

Keywords: Cooperation, collaboration, co-management, conflict resolution, collaborative process design, fisheries management, resource management, Skeena River

Table of Contents

List of Tables

List of Figures

Chapter 1: Introduction

For decades, Natural Resource Management (NRM) has been undergoing a shift from centralized control to more collaborative efforts (Ansell & Gash, 2007; Davies & White, 2012; Davis, 2008; Huxham 2000). Diverse, conflicting interests and overlapping governmental jurisdictions and policies, however, can make collaboration challenging. Institutional design is historically contingent (Stern, Dietz, Dolsak, Ostrom, & Stonich, 2002) and collaborative challenges can result in strained relationships, conflict, and the ultimate termination of NRM collaborative processes (Castro & Nielsen, 2001; Pinkerton, 2009b; Wondolleck & Yaffee, 2000). The potential of outcomes such as these demonstrate the importance of approaching NRM collaboration thoughtfully. Two multi-sectoral and cross-jurisdictional NRM collaborative processes in northwestern British Columbia, the Skeena Watershed Committee (SWC) and the Skeena Watershed Initiative (SWI), for example, attempted to address salmon-related conflicts and brought interested parties together to discuss annual harvest planning and fishery–related issues. The SWC operated between 1992 and 1997 (NRTEE, 1998), while the SWI began in 2008 and ended three years later (SWI, n.d.b). Both of these processes, however, failed to stand the test of time and conflict has remained prevalent and highly publicized in this watershed for decades (Pinkerton, 2009b). Detailed examination and analysis of these processes provide an opportunity to learn from past Skeena experiences as conflict surrounding salmon resources in the watershed remains prevalent (M. Kotyk, personal communication, August 7 2013).

My primary driver for this work was to investigate historical Skeena collaborations and use findings as a basis to develop recommendations for practical solutions to address ongoing fisheries-related issues and conflict in the Skeena River watershed. Conflict surrounding fisheries issues in this watershed are introduced later in this chapter and more fully described in

Chapter 4. Having worked for eight years, until recently, in the fisheries-related realm as an employee of the Department of Fisheries and Oceans Canada (DFO) in the Skeena watershed, I came to recognize that the impact of my personal experiences with conflict was profound, both professionally and personally. I believe that conflict has also impacted all parties involved in watershed management discussions. This latter assertion rises partially from a personal perspective, and as I explain throughout this dissertation, is supported by my research findings.

The dissertation is based on the assumption that a logical approach to improving cooperative work in the watershed was to investigate collaborative experiences within the watershed with the intention of improving relationships based on what might be learned from the past. The theoretical perspective of this research is grounded in communications and conflict resolution fields and while there are, of course, many important governance and policy implications of the research, examination of federal, provincial, and First Nation fisheries policies and governance are beyond the scope of this dissertation. Given the longstanding unresolved conflict in the watershed, this research focussed on learning from historical collaborative Skeena endeavors to inform practical recommendations from a conflict resolution and communications perspective. Research outcomes are intended as an interim solution to resolution of broader governance discussions, such as First Nations' rights and title issues and interjurisdictional issues.

Collaborative NRM is well known to be challenging, and while it can be a "…potentially powerful tool, it is not simple to develop or to implement" (Wondolleck & Yaffee, 2000, p. 275). There has been limited Skeena-specific collaborative fisheries management research conducted (Jones, 2006; Knox, 2008; Pinkerton, 1996, 2009b; Wood, 2001), and little evidence that existing research has been applied to Skeena fisheries-related processes. In response to this gap,

there is value in discerning why collaborative difficulties existed so that difficulties might be overcome (Westley, Zimmerman, & Patton, 2007; Wondolleck & Yaffee, 2000). Therefore, this research was driven by an interest in learning from historical collaborative Skeena processes, as well as developing practical applications of the findings in an effort to reduce conflict and enhance cooperative behaviour in the Skeena River watershed.

The SWC and SWI processes provided an opportunity to analyze the case of the Skeena in terms of historical collaboration successes, challenges, key issues, and exploration of associated impacts. The Skeena experiences occurred recently enough to enable interviews with theses process's participants, as well as retrieval and analysis of documentation and archival communication materials.

Research Goals and Objectives

The overarching objective of this research was to explore two historical Skeena watershed collaborative efforts to identify lessons that might inform and promote successful NRM collaboration.

Specific goals were:

1) To identify, from participant perspectives, collaborative successes, challenges, and associated impacts of the Skeena Watershed Committee and the Skeena Watershed Initiative;
2) To identify, from participant perspectives, lesson learned from the collaborative Skeena Watershed Committee and the Skeena Watershed Initiative.
3) To develop practical recommendations to support effective fisheries management collaboration in the Skeena watershed that might support watershed ecosystem integrity; and

4) To contribute learning from Skeena experiences to the international literature and dialogue on collaborative resource management.

In light of the third goal identified above, it is hoped that this research will reach a broad audience. For further clarity in relation to this goal, recommendations that arose as outcomes of this research are intended to inform the entirety of Skeena watershed interested parties from a holistic perspective, and do not target a distinct group or regulatory authority.

This research was guided by the following questions:

1) What were key Skeena Watershed Committee and Skeena Watershed Initiative collaborative successes?
2) What key elements contributed to collaborative successes associated with the Skeena Watershed Committee and the Skeena Watershed Initiative?
3) What collaborative challenges were experienced during the Skeena Watershed Committee and the Skeena Watershed Initiative?
4) What were key underlying issues that contributed to collaborative challenges experienced during the Skeena Watershed Committee and the Skeena Watershed Initiative?
5) What were relational (e.g. relationships) and tangible (e.g. management decisions) impacts resulting from Skeena Watershed Committee and the Skeena Watershed Initiative collaboration?
6) What lessons can be drawn from the Skeena Watershed Committee and Skeena Watershed Initiative experiences?

7) What practical recommendations can be made that build on the research findings to promote successful natural resource management collaboration in the Skeena River watershed?

An Embedded Historical Skeena Case Study: The Skeena Watershed Committee and Skeena Watershed Initiative

This study's research questions illustrate the need for results specific to the Skeena River watershed in northern British Columbia. To respond to the substantial aspects of historical conflict and ongoing tension among parties involved in ongoing Skeena watershed fisheries-related discussions, this research took a mixed methods case study approach to examine collaborative design of the Skeena Watershed Committee and the Skeena Watershed Initiative through a lens of communication and conflict resolution. The continued involvement of many of the historical Skeena collaboration participants in ongoing watershed-related matters made it possible to conduct qualitative research and access rich data and deep understandings of these processes. To achieve this I used four specific data collection methods: semi-structured interviews, retrieval of archival and policy documents related to the collaborative processes, a follow-up survey sent to research participants via email, and meeting attendance/observation at ongoing Skeena fisheries-related discussions/meetings. The methodology and methods are described in the following chapter.

A wealth of work has been conducted that can inform collaborative institutional arrangements, conflict resolution, and cooperative NRM of common property resources such as fisheries resources. This includes Wondolleck and Yaffee's book (2000) that drew on ten years of research and discussed the appropriateness, role, and utility of this approach to NRM and how to make it work, and decades of work by Elinor Ostrom and others that informs cooperative

common property resource management (Ostrom, 1990, 2008; Stonich et al., 2002). Collaborative efforts have also been examined with respect to development of adaptive capacity (Armitage, Berkes, & Doubleday, 2007; Armitage et al., 2009). Complimenting this work are cooperative process design-oriented case studies by authors such as Lachapelle, McCool, and Patterson (2003) that identified barriers to effective natural resource planning collaboration, and Davies and White's (2012) work suggesting that effective collaboration "…depends on appropriate role allocation and adoption of responsibilities, definition of convergent values and goals, and establishing communication and trust…" (p. 160). These resources provide a solid foundation of knowledge that can be drawn on to strengthen cooperative endeavors.

There is a limited amount of research, however, on understanding historical collaboration challenges of the SWC or SWI processes. For example, Pinkerton explored the contribution of the SWC to dispute resolution (1996); Pinkerton also explored SWC successes and failures in terms of four salmon management issues (2009b); Knox suggested a return to traditional First Nation harvest techniques as support for sustainable Skeena management in his 2008 Master of Arts thesis; and Wood (2001) discussed complexities facing Skeena fisheries management. Commissioned work completed for DFO included two economic studies (ARA, 1994; Counterpoint, 2008) and an independent science review of Skeena salmon management (Walters, Lichatowich, Peterman, & Reynolds, 2008). The Pinkerton and Weinstein's (1995) publication presented ten cooperative fisheries management case studies, one of which was a Skeena case, to the David Suzuki Foundation, and Jones' (2006) paper described and compared Working Models for Fisheries Collaborative Management for the First Nation Marine Society. Unpublished works include documents commissioned by DFO primarily with the purpose of learning from historical endeavors intended to inform future efforts (DFO, 2014b; Sigurdson, Stuart, &

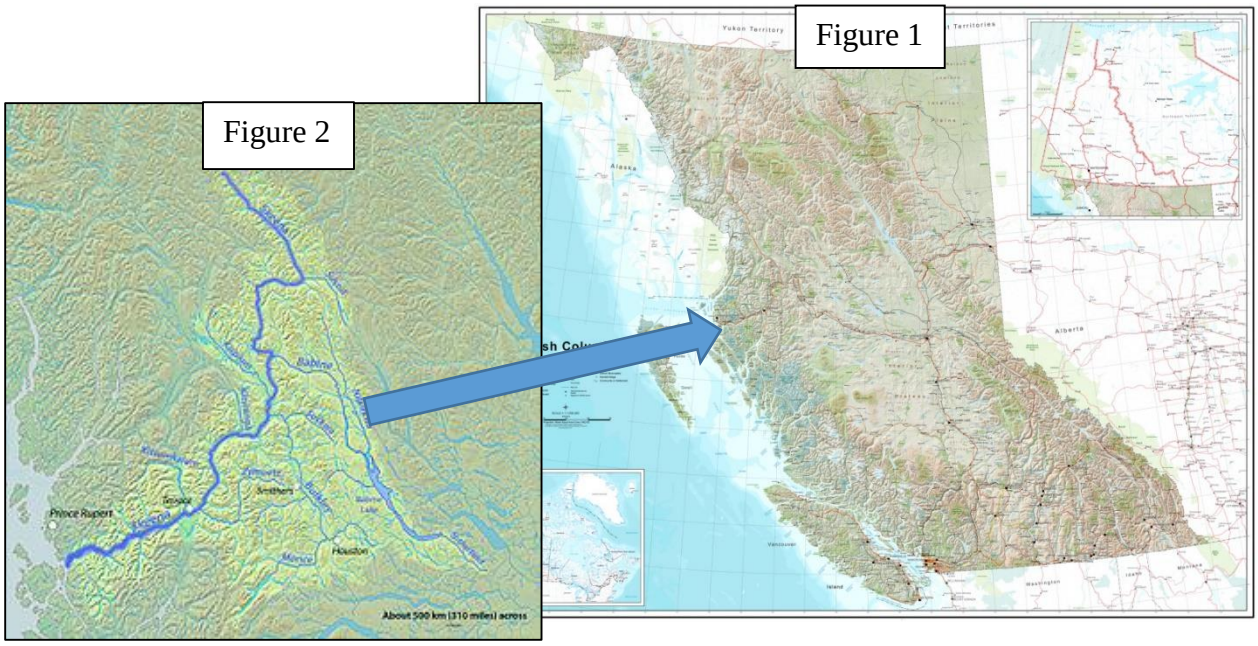
Gallaugher, 2008). The relevance of these papers to this research is explored in more detail in Chapter 3 of this dissertation.

The Skeena River: A Brief Introduction to Jurisdiction and Governance

The Skeena River is the second largest watershed on Canada's Pacific coast (Porter, Pickard, Casley, & Ochoski, 2014) and is home to five species of salmon, steelhead, and numerous other aquatic species. Given the focus of this research on historical salmon-centric collaboration, this introduction is focussed on Pacific salmon, jurisdictional responsibilities related to salmon management, and groups interested in salmon in this watershed.

Figure 1. The Province of British Columbia

Figure 2. The Skeena River watershed



Source: http://en.wikipedia.org/wiki/Skeena_River) (Source: http://geobc.gov.bc.ca/map_src/BC%20Wallmap.pdf)

This complex, productive watershed encompasses 54,432km^2 (Gottesfeld & Rabnett, 2008) and drains into an estuary well known for its rich biodiversity and prime salmon rearing

habitat for Skeena-bound salmon and salmon bound for other river systems (Carr-Harris, Gottesfeld, & Moore, 2015). For example, "the Skeena River Basin provides extensive spawning and rearing habitat for all five Pacific salmon species (sockeye, coho, chinook, chum, and pink), steelhead, and at least 30 other freshwater fish species" (Porter et al., 2014, p. 1). This watershed's productive salmon stocks historically supported First Nations prior to European contact (Gottesfeld & Rabnett, 2008; Porter et al., 2014). With European settlement came "…industrial[ized] salmon fishing in the late 19th century and early 20th century" (Gottesfeld & Rabnett, 2008, p.1), that included numerous economic opportunities and the advent of a plethora of canneries on British Columbia's north coast that operated well into the 20th century. Currently,

> "these different salmon species support Canadian and USA commercial fisheries, both tidal and freshwater recreational fisheries, and numerous First Nations food, social and ceremonial (FSC) fisheries that occur throughout the [Skeena] watershed. During the peak of the commercial fishing industry in the early 1900s, millions of salmon were captured annually by seine and gillnet fleets that supported dozens of fish canneries in the Skeena estuary" (Carr-Harris et al., 2015, p. 3).

As such, this watershed draws diverse interest groups that include: federal and provincial governments, First Nations, commercial fishers, recreational fishers, and non-governmental organizations. These groups present diverse, often conflicting objectives that can result in tensions, and in the case of the Skeena, conflict. Salmon management is a complex endeavor and various management considerations often have implications for different interest groups. These are briefly introduced in the following paragraphs and are discussed further in Chapter 4 of this dissertation.

Government jurisdiction.

With regard to government jurisdiction over regulation of the fishery, the federal government is responsible for the management of salmon with respect to both marine and fresh-water fisheries (First Nation, commercial, and recreational harvest) (*Fisheries Act*, 1985); and the provincial government has been delegated responsibility for "administration of the recreational freshwater sport fishery…" (FLNRO, 2015, p. 5), including management of a species that spends time in the marine environment (i.e. steelhead). This latter aspect of steelhead spending time in marine waters introduces an additional complex issue as steelhead are intercepted by commercial, recreational, and First Nation fishers during federally regulated fisheries (e.g. during marine fishing activities), yet are a provincially managed species. Jurisdictional differences between Canada and British Columbia are further complicated by differing objectives of various interested parties.

Aboriginal fishing rights.

The Canadian constitution (*Constitution Act*, 1982) protects aboriginal fishing rights under section 35, which places First Nation, Metis, and Inuit interests and associated considerations firmly into fisheries management discussions. For example, in British Columbia priority access for First Nations' FSC fishing has implications for harvest access opportunities of both commercial and recreational sectors, as First Nations access takes priority over other harvest opportunities (DFO, 1999). This is a significant aspect that has influenced, and continues to influence, Skeena fisheries-related discussions and harvest management decisions.

Commercial and recreational fisheries.

Commercial sector objectives lie primarily in maximizing harvest opportunities and relate to economic drivers. In contrast, recreational sector objectives include catching fish, with varied

intentions to harvest or release that depend on the species being targeted and regulations in effect at the time, as well as aspects such as environmental aesthetics and the quality of a wilderness experience. To provide a further contrast between these sectors, commercial fisheries occur primarily within marine waters, whereas recreational fishing is practiced in the marine environment as well as throughout the watershed in freshwater streams. These differences give rise to inter-sectoral implications and impacts. For example, marine commercial harvest can have an impact on recreational fishers as fewer fish remain in the water, which requires potential increased efforts by recreational fishers to catch fish. Competing interests are clear; therefore access to fishing opportunities discussions (fishery openings and closures) can lead to conflict as differing lifestyles and livelihoods are drivers of both fisheries.

Non-governmental organizations.

In addition, non-governmental organizations represent interests such as ecosystem health and sustainability drivers, and discussion of these aspects can challenge management and harvest practices, which can impact fisheries-related discussions. For example, when non-target species are caught that are not open for retention, by law they must be released, however different commercial nets or fishing hooks entail differing associated mortalities. Important for management consideration of fish managed through a conservation lens are tools that, for example, can reduce human impacts on non-target fishery resources. Fishery managers can require different harvest methods (e.g. nets or hooks that meet specific requirements to reduce mortality rates on non-target species) to meet this objective. However, management measures such as harvest methods affect fishers as there are associated costs with acquisition and maintenance of gear that can cause hardship and conflict among fishers. This consideration further complicates fishery managers' decision-making.

Key Terms and Definitions

Conflict in the context of Skeena watershed fisheries-related collaboration cannot be defined simply. In the case of the Skeena it requires background information so as to enable understanding of implications of conflict in relation to this research. As such, conflict is introduced in Chapter 4 during discussion of historical Skeena fisheries-related aspects and issues, as it is important to include contextual understanding for this term in a Skeena collaboration context.

Collaboration is, in its simplest form, the action of co-labouring, or working together with others, to achieve common goals. However a definition of collaboration is elusive in the field of NRM and many definitions have been offered for a variety of similar terms (Armitage et al., 2007; Davies & White, 2012; Huxham, 2000; Pomeroy & Rivera-Guieb, 2006). Common terms in NRM literature that refer to collaboration include: cooperative management (King, 2004; NRTEE, 1998), collaborative management (Castro & Neilson, 2001; King, 2004; NRTEE, 1998), co-management (Armitage et al., 2007; Pinkerton, 1989), joint management (Castro & Neilson, 2001; NRTEE, 1998), and partnerships (Berkes, 2009; Pinkerton, 2009b), among others. Distinctions among terms generally involves differing power-sharing dimensions (Armitage et al., 2007; Berkes, 2009; NRTEE, 1998), some of which respond to legal obligations such as treaties with First Nations (King, 2004; Singleton, 1998). For example, treaty agreements may specify engagement procedures, governance committees, and/or protocols (Pomeroy & Berkes, 1997), which can influence collaborative governance structures. This will increasingly become a consideration as treaties are negotiated and implemented. A number of BC First Nations are involved in treaty discussions (AANDC, 2010; BCTC, 2009); therefore a definition of collaboration that respects these governance implications will guide this work. The

definition used in this dissertation also respects Whaley and Weatherhead's (2014) assertion that collaborative management "…has "many faces" and can be thought of in terms of power sharing, institution building, trust building, process, problem-solving, social learning, and governance (Berkes 2007, 2009; Plummer and Armitage, 2007a)" (p. 9). Therefore this work will consider collaboration as a process that "…involves people in working relationships with those in other organizations" (Huxham, 2000, p. 339) who willingly working together to: recognize and address issues, and create and implement plan(s) that work towards solutions.

Similarly, it is evident that the term '*success'* can also be defined in many ways (Stern, Dietz, Dolsak, Ostrom, & Stonich, 2002), including in terms of process, outputs, and outcomes (Rudeen, Fernandez-Gimenez, Thompson, & Meiman, 2012). Issues within processes have been documented to reflect differing views on what success means and on what associated criteria signify success (Stern et al., 2002), so it is important to be clear on how success is defined here. Given the considerations that one goal of this study is to provide practical recommendations for moving forward with collaboration in the Skeena watershed and that many current participants engaged in Skeena fisheries-related discussions were also involved in historical Skeena collaborative efforts, success will be evaluated based on historical SWC and SWI participants' perceptions. As such, success will be considered simply as "the accomplishment of an aim or purpose" (Success, n.d.). Inherent in this definition is that the 'aim or purpose' relates to inclusion of explicit objective(s). This is important in the context of performance measurement, as explicit objective(s) provide the foundation for linking collaborative work back to the purpose, as a method to measure success (Wondolleck & Yaffee, 2000). However, it is important to note here that success is not a static place, and in the words of Westley et al. (2007), "…success…is not a fixed address; we don't arrive there. We may pause there, standing still to reflect on our

next move" (p. 209). In this sense, the concept of success and measures of success that enable us to conceptualize and assess progress will be considered throughout this dissertation.

Two other terms are also important to distinguish: challenges and impacts. *Challenges* will be considered as "a difficult task or situation" (Challenge, n.d.) where elements can make accomplishment of objectives difficult or impossible. While this is a broad definition, it provides flexibility to capture varied research participant's views while maintaining a framework for discussion. For example, it enables the ability to capture actions as well as contextual elements such as behaviour. Similarly, *impacts* will be considered to "have a strong effect or influence" (Impact, n.d.) in the sense of historical processes and of participants and their interactions. This is intentionally a very simple definition, as it supports the exploratory aspect of this research.

Structure of the Dissertation

This dissertation contains seven Chapters. In Chapter 2, I explore the methodology used for this research, Chapter 3 contains a review of literature that informed this research and its outcomes, and the subsequent two chapters present the findings of this research. Drawn from interview data and documents obtained during data collection, a history of fisheries management in the Skeena beginning in the mid-1900s is presented in Chapter 4. This chapter includes information with respect to fisheries-related resources and historical fisheries management contexts and concepts that are important for understanding research results and subsequent recommendations. Chapter 5 presents interview and survey results that respond directly to research questions. This is followed by Chapter 6 where I discuss results in the context of existing knowledge and draw conclusions from findings. This chapter is organized to reflect key research question topics of collaboration successes, challenges, lessons learned, and key issues. Chapter 7 presents practical recommendations for improving collaborative Skeena undertakings

in a current fisheries-related context, and concludes with a summary of conclusions and recommendations.

Chapter 2: Methodology

This research took a qualitative mixed methods case study approach and examined two historical collaborative Skeena River fisheries processes: the Skeena Watershed Committee and the Skeena Watershed Initiative (SWC and SWI). This approach provided a deep understanding of successes and challenges associated with Skeena-specific collaborative processes that was responsive to the goal to develop practical recommendations to support effective fisheries management collaboration in the Skeena watershed.

A case study approach in a historical context provided the opportunity to identify historical Skeena fisheries-related collaborative successes and challenges, and to develop an understanding of their impacts. To develop the case, the following four data collection methods were used. First, thirty semi-structured interviews with SWC and SWI participants involved open-ended questions, with ten questions pertaining to either the SWC or the SWI, two questions focussed on current fisheries-related context in the Skeena, and twelve on collaboration in general. Second, archival materials from the DFO and the Pacific Salmon Foundation (PSF) as well as from interview participants were obtained. Documents were reviewed to gain a deeper understanding of issues and associated conflict, as well as to examine how these collaborative processes were structured and designed. All documents related to these processes were reviewed, however documents specific to fisheries management decisions and science-related documents were briefly reviewed and dismissed if they did not directly respond to research questions (i.e. to inform historical collaborative lessons learned). Documents were sourced primarily through specific data requests, although as noted above, open-source searches and snowball sampling during interviews were also conducted. Third, once interview data analysis and document review was complete, preliminary results were shared via an email survey to

quantitatively assess the extent to which research participants agreed or disagreed with findings. This served as a tool to reinforce the credibility of initial research findings, thus informing the discussion in Chapter 6 and subsequent development of recommendations. And fourth, ongoing Skeena fisheries-related meetings were attended and observations recorded to gain perspective and deeper contextual understandings of current fisheries-related discussions and ongoing conflict. Meeting observations contributed to the discussion of interview and survey results and were considered during development of recommendations.

An Embedded Case Study

A single case study can produce more specific results and in-depth understanding of the case (Flyvbjerg, 2006; Platt, 2007; Ragin, 2007; Stake, 2006). The research questions in this study sought to understand historical collaborative fisheries-related processes specific to the Skeena River watershed in order to support effective fisheries management collaboration in the Skeena watershed. Therefore case study method is appropriate because it enabled deep understandings of the Skeena-specific context that were essential for development of recommendations. The case study method is often utilized to approach questions that seek to understand and explain real-world phenomena within unique contexts (Stake, 1995; Yin 2003). In this study, the real world phenomena are conflict and controversy around fisheries-related issues in the watershed and the unique context is the complex biological, jurisdictional, and governance Skeena environs introduced in Chapter 1 and further described in Chapter 4. The Skeena watershed provided a unique opportunity as there were two historical processes, the SWC and the SWI, which operated within the watershed. Because there were two historical Skeena processes to study, this case study took the form of an embedded case study (Scholz &

Tietje, 2002a), as the two cases (the SWC and the SWI) were embedded within a larger context case of historical fisheries-related collaboration in the Skeena watershed.

Further supporting the case study method of inquiry, this method enables researchers to increase their understanding of the case itself, as well as its function and associated activities (Stake, 2006). The breadth of understanding that case study enables is important as it enabled this approach to respond to both process-oriented research goals (e.g. Skeena-related knowledge and lessons learned) and outcome-oriented research goals (practical outcomes and recommendations).

Case study inquiry involved three forms of data collection from qualitative sources: interviews with process participants from both historical Skeena collaborative processes, historical process-related document collection, and observations at ongoing Skeena fisheries-related meetings. Interviews, surveys, and observations served as primary data sources and supported deep qualitative inquiry using NVivo software to organize and analyze data. Documents represent secondary data that was produced for purposes other than my research. Data were also gathered through one quantitative source: a survey using a five point Likert-scale that shared preliminary research findings, via 40 statements, with interview participants to assess the extent of agreement or disagreement with preliminary research findings. The Likert scale included selection options of: strongly agree, agree, neutral/don't know, disagree, and strongly disagree. The follow-up email survey was intended to be analyzed quantitatively using the Statistical Package for the Social Sciences (SPSS) as quantitative analysis can function as methods triangulation to test the credibility of qualitative research outcomes (Denzin, 2010), however the sample size of survey results for this research prohibited this analysis. Specifically, the intention was to conduct regression analysis that explored how preliminary findings might

work together to support effective collaboration. Sixteen of the thirty emailed surveys were returned, therefore due to the small sample size regression analysis was not conducted. However responses were averaged to gain a sense of agreement or disagreement, as described in the Quantitative Data Analysis section of this chapter.

A Mixed Method Case Study Approach

To take a balanced approach to deep understanding yet include interview participants in active participation in this research, this study took a mixed methods approach. The pragmatic aspect of mixed methods also addressed a key objective of this research, which was to develop practical outcomes, while providing an opportunity to dig deeply into the complex collaborative Skeena River fisheries-related history to increase understandings through deep qualitative inquiry. According to Greene (2008) "A mixed method…. rests on assumptions that there are multiple legitimate approaches to social inquiry that any given approach to social inquiry is inevitably partial" (p. 20). The inherent flexibility of this approach embraced the depth and complexity involved in exploring social phenomena in the Skeena watershed. It was inclusive rather than exclusive because there was room to embrace complimentary combinations of inquiry methods in a creative way.

This process can be described as digging deeply into the complex collaborative Skeena River fisheries management system to increase understandings from a qualitative perspective, then building on understandings with quantitative exploration, which is described in the following paragraph. This mixed-method approach then enabled researcher reflection on both qualitative and quantitative results (Metcalfe, 2008) to enhance credibility of study outcomes (Denzin, 2010) through triangulation (Rothbauer, 2008). Additionally, the quantitative approach taken to elicit feedback from participants about qualitative results added another layer of inquiry

and understanding. Benefits and details of methods triangulation for this study are explained in the following Methods Triangulation section.

Methods Triangulation

Collecting and analyzing data from multiple methods and sources demonstrated a rigorous research approach that collected data "…from multiple perspectives and in different contexts" (Rothbauer, 2008, p. 893). For example, documents obtained from various archives and individuals provided context from government and interest groups, whereas interviews demonstrated communication skills and behavioral aspects; both of which informed research questions articulated in Chapter 1. Use of multiple methods provided a useful approach because data was drawn from multiple sources, which broadened the researcher's insights into the different issues underlying the phenomena being studied.

In the context of this research, data collection using three qualitative methods and one quantitative method served six key purposes. 1) This approach bridged the historical aspect of learning with academic knowledge expressed in literature in the interim. For example, interviews drew on historical experiences and analysis drew on academic knowledge gained since the times of these Skeena processes. 2) It enabled consideration of the current context of Skeena fisheries management discussions in research outcomes. This point relates to attendance at Skeena fisheries-related meetings to keep abreast of Skeena fisheries-related issues in the effort to incorporate and/or respond to current Skeena contextual considerations in my research outcomes. 3) The follow-up email survey familiarized research participants with research progress as a preface to study findings. It is hoped that ongoing research participation and familiarity with preliminary findings will support enhanced comfort and/or buy-in of research outcomes. 4) The follow-up survey informed an understanding of the extent to which

interviewees agreed or disagreed with preliminary research findings and their reflexive consideration. This aspect enabled reflexive consideration of preliminary findings to assess their credibility. 5) The emailed survey enabled continued interaction with interview participants, which supported researcher-participant relationship-building and the potential development of social capital (trust). And 6), the combination of qualitative and quantitative analysis provided an opportunity to reach a broader audience. Specifically, a mixed methods approach had the highest potential of reaching audiences familiar with either quantitative or qualitative research, to support understanding of and/or receptivity to study outcomes.

Prior to describing data collection methods, the historical aspect of this study are considered.

Historical Skeena Case Study Considerations

Both processes of interest to this study were historical and as such were explored after they had both concluded, or in other words *post hoc*. An advantage of approaching this study as a *post hoc* case study was the ability to develop research outcomes specific to the Skeena River watershed. A disadvantage of a *post hoc* study was that this approach assumed that historical causes for process failures remain applicable today and/or in the future. A case study approach may have also failed to take into account more recent developments and challenges. Participant observation during ongoing Skeena River fisheries-related discussions and reflexive consideration of these discussions were conducted to address these current context aspects.

Another consideration of the *post hoc* aspect of this research is in terms of participant memories, as SWC engagement occurred during a window from 1992 to 1997 (NRTEE, 1998), and the SWI took place between 2008 and 2011 (SWI, n.d.b). Interviews with participants from these processes drew on recollections, and as such interview data may have been influenced by

the passing of time as well as interim experiences. Similarly, participation in interviews may have influenced participants' thoughts, behaviors, and interests in the context of ongoing Skeena fisheries-related meetings. These aspects were unavoidable potential aspects of human nature and were considered during data collection and analysis as described in the remainder of this chapter. For example, after qualitative coding using NVivo software during data analysis, categories and themes that emerged were considered with reflexive recognition of these aspects. Categories and themes also underwent reflexive review in the context of potential perceptions of personal sources of bias in this dissertation, as described below.

Perceptions: Sources of Potential Bias

Having worked as a DFO employee for more than 12 years and having spent 8 years on the North Coast, experiences during this time likely biased my thinking. For example, I've noticed that I tend to rationalize fishery-related issues within legislative and policy frameworks. Now that I work for the Province of British Columbia, my hope is that perceptions of research bias will be eased and the independence of research results reinforced. My experiences and previous employment with DFO did however, enable me to have insights that non-governmental employees may not have experienced, while it also enabled access to DFO resources such as staff contacts and archival documents; all of which contributed to this research.

A risk associated with my previous employment with DFO relates to perspectives of interviewees, and of my dissertation in general: that my employment may have brought a DFO-centric or governmental bias to this research. Recognizing the potential impact of perceptions related to my employment, NVivo categories and themes underwent reflexive review in the context of potential sources of bias as an iterative exercise throughout analysis and dissertation drafting to recognize and address possible personal biases with the aid of Dr. Leslie King. Other

risks associated with my previous employment included the possibility of participants providing false, misleading, or embellished responses; and that previous non research-related contact with interviewees could have influenced perceptions and communications with interviewees. These aspects were addressed through clear initial and continued communications with interviewees that emphasized the separation of this work from my employment. To reinforce this message, my role as a researcher was explicitly stated in all research communications. In addition, interview data was iteratively reviewed through the constant comparison method to ensure that interviews were internally consistent, and that interview data were consistent with consideration of other data sources.

Data Collection

The following four sections describe the four data collection methods used during this research: document collection, interviews, meeting attendance and observation, and email surveys.

Documents.

Documents were sourced through data requests to: DFO and the PSF, Royal Roads University Library, journal and media databases, and open source Internet searches using Google and Google Scholar search engines. Documents were selected for review if they pertained to either process, which resulted in a large volume of documents for review. During the review process, technically-oriented documents such as science papers and evaluation of management strategies were eliminated from further review as they did not inform research questions, i.e. collaborative process design and conflict resolution. Additionally, during interviews participants were snowball sampled and asked if they recommended documents or materials that might inform this work. From this inquiry, eight resources were identified. These included multi-

media sources, proceedings documents, correspondence, academic resources, and historical context documents. All recommended materials were obtained and reviewed.

Data sourced from DFO included hard copy and electronic formats from Prince Rupert DFO office archives, as well as from regional and local DFO network drive archives. Data were also obtained from PSF archives, SWI website archives, interviewee archives, and from Waves (DFO's national electronic library system). Documents obtained included unpublished literature, fax transmissions, and internal DFO documents, as well as letters, publications, media releases, meeting summaries, individual participants' meeting notes, discussion documents, and emails. Due to the evolution of communications from fax transmissions to email from the inception of the SWC to present day, and computer system changes within DFO over the years, some materials were likely not archived and/or were lost over time. This was not viewed to be a significant influence in research outcomes due to the plethora of materials resourced for analysis of both historical processes.

Examples of information extracted from documents include: identification of discussion topics, identification of points or topics associated with conflict, and identification of meeting and conference call participants. Reflections were recorded throughout the data collection process, which were revisited during data analysis.

Interviews.

Interviews were semi-structured and participants were selected through purposeful sampling. The criteria for potential interview selection was participation in the SWC and/or the SWI. SWC and SWI process participants were identified during analysis of meeting, conference call, and workshop attendance records. While it would have been optimal to interview all SWC and SWI participants, the cumulative number of participants made this impractical (192

participants were identified as participants in SWC and SWI meetings, conference calls and workshops). Therefore participants with the highest attendance records were selected based on equal representation of two individuals from each participating group, with one individual representing a governance perspective and the other a technical perspective (participant selection based on these perspective criteria is described in the following section). In the case of the SWC, two representatives were selected from the commercial sector, recreational sector, First Nations, federal and provincial governments (NRTEE, 1998). Similarly, two representatives were selected from each SWI participating group, which included the commercial sector, recreational sector, non-governmental organizations, First Nations, federal and provincial governments (SWI, n.d.c).

Interview participants were selected from historical process participant lists, however there is a possibility that those selected (and who participated most) may have represented participants with some level of satisfaction with the process and thereby under-represented those who may have been less satisfied (and therefore attended fewer meetings). Similarly, it may not have captured those interested in participating but who, due to limiting aspects such as capacity, funding, or resources, were not able to participate.

Thirty individuals were interviewed for this research project. There was a similar proportion of males to females in the interview samples for both processes: 5 women were interviewed from each process, while men interviewed included 13 from the SWC and 15 from the SWI. This sample was not intended to be representative of gender; rather, the sample was selected based on those with the highest level of participation over the duration of each process. Women represented a variety of interests, however did not represent the recreational sector or provincial government during either process.

While interviewees were selected to discuss either the SWC or SWI, some interviewees held experience from both processes. Those who had experience in both processes shared their thoughts on both the SWC and SWI, which resulted in 15 individuals providing information regarding the SWC and 20 for the SWI. The more recent context of the SWI supports the higher relative sampling proportion for this process. The five individuals who shared thoughts on both processes represented all five interest groups that participated in these two historical collaborative Skeena processes. Of the 30 individuals interviewed, 13 were still involved directly in fisheries management discussions.

Interview participant selection process

Meeting, conference call, and workshop materials were analyzed to develop participant lists that included information about group affiliation, and whether participation was governance (e.g. engaged in strategic direction such as objective development) or technically oriented (e.g. participated in technical level discussions). Five individuals were excluded from analysis, two for health reasons and three others were deceased. Participants for the SWC and SWI were then sorted separately to develop interview lists for each process. Two participants who attended the most meetings were selected to represent each group that participated in the SWC and the SWI, one from a governance perspective and one from a technical perspective. Participants without explicit identification of their sector/group affiliation in reviewed materials were not considered for interview selection. This was not of concern however, as none of the un-coded participants attended more than three meetings, whereas all selected interview candidates attended five or more meetings. Analysis resulted in identification of 10 participants from the SWC and 12 participants from the SWI as interview candidates. Two individuals were selected to be interviewed for both the SWC and the SWI, therefore a total of 20 interviewees were selected.

One prospective interviewee declined to participate in the research and was replaced by a representative from that interest group who held the next highest meeting attendance record.

Ten additional individuals with Skeena experience were also interviewed in order to test the interview questionnaire and to fill specific context gaps. The interview guide was tested with three interviewees to refine question format, phrasing, and content. The three test interviewees were selected to provide a balance of SWC and SWI governance, technical, and decision-making perspectives who were not part of the initially identified sample set. Those three test interviewees were also involved in ongoing Skeena River-related discussions and therefore could view the interview through the lens of ongoing conversations. This served as a check that questions were relevant in a current as well as historical context. Seven others were selected for supplementary interviews to fill specific information gaps (three), and to respond to suggestions of interview participants (four) that were either frequently recommended (two) or pointed to potential information gaps (two).

Interview process.

Interviewees selected were contacted by phone to introduce the research and verify contact information. An email followed up on phone calls, which included an introductory letter, a research summary, and interview questions. Interviews were digitally recorded and notes were taken during interviews on a laptop.

In addition, snowball sampling was explored during semi-structured interviews to seek interviewee recommendations for other prospective interviewees. Fifty-five people were recommended by interview participants. Twenty-two people identified were consistent with the twenty-six people interviewed at that point, fifteen of which were recommended between 3 and 7 times. This confirmed that the initial interview sample set included key representatives. An

additional thirty-three individuals were recommended, of whom another 4 were selected for interviews. Suggested interview contacts who were not interviewed were recommended only once or twice. Additional interview participant selection was based on: 1) the desire to fill background context gaps prior to and around the inception of the SWC and the SWI, 2) to access watershed fisheries management perspectives that encompassed the timeline of both the SWC and SWI, and 3) to better understand political and resource drivers that may have affected both processes. The remaining twenty-nine suggested interview contacts proposed by research participants were represented through interviews conducted according to the initial sampling design. The breakdown of suggested interview contacts not interviewed according to their interest group associate was: the provincial government (1), the federal government (8), First Nations (8), environmental interests (2), the commercial fishing sector (3), and the recreational sector (3). In addition, there were three suggested interview contacts who were not affiliated with these groups (i.e.. a media representative, an academic, and a member of a fisheries-related council); however, the context of their suggestions was either in a similar vein to those interviewed or was beyond the scope of this research.

Once each interview was completed, reflective memoing was completed to inform later analysis that documented: whether the interview was conducted in person or by phone; the tone, behavior, language, emotion, and demeanor of interviewees; as well as personal thoughts, ideas, and perspectives.

Semi-structured interviews were scheduled for 60 minutes and ranged in length from 40 minutes to more than 4 hours conducted over two sessions; however, most interviews took approximately 60 minutes to complete. Interviews were conducted using a framework of questions to explore challenges and successes of historical collaborative Skeena River fisheries

management experiences (see Appendix A). This framework of questions was used as an interview guide and had three sections: historical fisheries management, current fisheries management (to aid in making recommendations relevant to the current context), and generalized perceptions of collaboration. The interview guide provided guidance, however didn't constrain the interview to a prescriptive format, and enabled interviews to evolve in response to participant experiences. This approach allowed for flexibility in the interview process for participants to introduce topics and to expand on their experiences in a manner most appropriate for them. Interview recordings and notes were confidential and therefore provided a 'safe' environment for participants to freely share their perspectives and experiences.

Meeting Attendance.

While there was not a Skeena River-specific collaborative fisheries-related process underway during this research, DFO was engaged in discussions that could have influenced future watershed collaboration (M. Kotyk, personal communication, August 2013). As a result, there was uncertainty about how ongoing discussions might inform a future Skeena River collaborative fisheries-related process. To address this uncertainty and support development of relevant research outcomes, participant observations at ongoing Skeena River fisheries management-related meetings were conducted. Suitability of meeting attendance was determined in collaboration with Dr. Leslie King and with DFO's North Coast Area Director, Mel Kotyk. Observations were not recorded verbatim and no names were attributed to comments in order to ensure confidentiality for participants. Observations recorded included discussion topics and issues, differing perspectives and perceptions, points of conflict, and relational factors such as behavior and tone of voice. Process-oriented observations were also

recorded, and included aspects such as the use of agendas, adherence to agenda topics, and timeliness.

Email Survey.

In addition, a survey was conducted to assess whether preliminary data analysis findings were consistent with interviewee perceptions. This involved a short follow-up survey (see Appendix B) that was conducted after preliminary data analysis was completed. This enabled preliminary research findings to be shared with interviewees. The survey questioned interviewees about what worked and didn't work in historical Skeena fisheries-related collaborations as this research progressed. Ongoing interaction of the researcher with research participants enabled interviewees to consider how this work might inform future collaborative Skeena undertakings.

The survey was intended to serve as a credibility check of preliminary interview data analysis. It was designed to assess the extent to which participants agreed or disagreed with preliminary research findings, as a tool to inform research outcomes and recommendations. The survey used a five point Likert scale assessment and was administered via email. It used the following categories: strongly agree, agree, neutral/don't know, disagree, and strongly disagree. The criteria for selection of survey participants was completion of a semi-structured interview for this research project. Surveys were sent to thirty interview participants and reminder emails were sent to follow up with those who didn't respond within the eight day requested timeline. Respondents were asked to rate their agreement with '1' representing 'strongly agree' and '5' representing 'strongly disagree'. After receiving some survey responses I noticed that there was some confusion as to whether the higher number (5) represented stronger agreement or strong disagreement as I saw discontinuities in the data. For example, when comparing email responses

with interview data, it became clear that responses were reversed in some cases. I followed up with survey participants to ascertain their intended responses in these cases. In hindsight, I recommend reversing the order so that '1' represents strongly disagree' and '5' represents 'strongly disagree'.

In the effort to develop the survey as a request for feedback in a format and length that was not burdensome in terms of time commitment for completion, survey statements were kept brief. In retrospect, additional context and inclusion of definitions may have altered responses for certain statements, particularly for those pertaining to: consistency of participation, incentives, lobbying, and participant commitment. For example, there may have been differing interpretations of key words such as 'lobbying', 'commitment', etc. This may have influenced how respondents rated agreement or disagreement to statements, thereby skewing survey results to decrease their credibility. This aspect, in addition to the small sample sizes associated with respondents, led to cautious consideration of survey results during ensuing analysis, discussion, and development of recommendations.

Hindsight also resulted in the desire to reword some statements to increase their clarity. In particular, statement 13 and 22 related to the "…regulatory commitment to seriously consider and/or implement…consensus recommendations". Revision such as "…commitment by regulators to seriously consider and/or implement…consensus recommendations" would have been an improvement however did not likely significantly alter survey outcomes as this was a grammatical error rather than a contextual error.

Qualitative Data Analysis

During the first phase of qualitative data analysis, meeting and conference call summaries and workshop attendance records were analyzed to compile process timelines for the SWC and

the SWI, to document participants and determine their cumulative attendance for each process to inform interview participant selection.

Semi-structured interviews, reflective memos, and participant observations from meetings were analyzed qualitatively using NVivo software. NVivo supported an inductive qualitative approach to constant comparison that allowed data to be coded and themes to emerge from multiple data sources (e.g. PDFs, MS Word documents, audio recordings, etc.). The ability to store and code multiple file types enabled viewing rich data in a reflexive process of constant comparison that worked towards an integrated perspective (Eisenhardt, 2002; Scholz & Tietje, 2002a, 2002b). The framework for analysis consisted of the seven research questions identified in Chapter 1. Analysis included viewing data through the lens of collaborative process design characteristics and NRM lessons learned, which are described in Chapter 3. Personal reflections were documented throughout the data analysis process and were revisited as part of an iterative process of constant comparison that began with review of documents, interview transcripts, and participant observations, which were inductively analyzed through a process of winnowing text into passages of interest (Seidman, 2013). This process identified: key elements that supported collaborative successes (including presence and absence of collaborative process design elements) and their implementation; collaborative challenges; key issues related to collaborative challenges; and relational (e.g. relationships) and tangible (e.g. management decisions) impacts of collaborative challenges. To do this, interview data were coded in phases. The first phase was to code data into categories (parent nodes) based on research questions. For example, parent node categories included: challenges, successes, and impacts. Phase two involved analysis of parent nodes to identify themes and create a nested node structure to reflect emergent themes. Similar to sub-folders within a folder hierarchy, this entailed child nodes as sub-nodes of parent

nodes. For example, the challenges parent node (folder) contained three child nodes (subfolders) that included: causes of challenges, process design, and science. Where appropriate, node structures held additional levels of child nodes (subfolders). For example, the process design child node contained accountability, conflict and dispute resolution, funding, incentive, leadership, objectives, and representation nodes. Reflections and ideas that arose throughout this qualitative data analysis process were noted and incorporated into the presentation of results (Chapter 5) and into research discussions (Chapter 6).

Interview coding that occurred as part of this inductive analysis process also enabled interview participant recommendations of materials and prospective interview contacts to be tracked for follow-up. Follow-up included sourcing and review of all recommended materials. It also involved analysis to assess whether the list of research participants (i.e. the interviewee list) was consistent with those interview contacts recommended by interviewees (as previously described).

Quantitative Data Analysis

Within the context of small sample sizes, averages were calculated using MS Excel (results are presented in Chapter 5 and discussed in Chapter 6). Two different calculations for averages were completed to determine if neutral/don't know selections altered overall agreement or disagreement with survey statements. This was of particular interest given the small sample size of completed and returned surveys. The first set of averages was calculated using all data responses (values on the Likert scale of 1 through 5). Averages were then calculated excluding neutral/don't know responses (excluding the Likert scale value of 3, which represented the neutral/don't know category) to determine if neutral/don't know responses changed overall agreement or disagreement with the survey statement. Discussion and relative consideration of

these results in Chapter 6 was cautiously approached due to concerns around representivity of the sample (i.e. the small sample size).

Mixed-methods Embedded Case Study: In Summary

The mixed methods case study approach taken with this research was used to examine the historical SWC and SWI processes in the effort to draw multiple perspectives and contexts into this research and its outcomes. This approach enabled deep understanding of successes and challenges associated with fisheries-related collaborative processes in a way that could inform practical recommendations in support of effective communication, conflict resolution, and cooperation in the Skeena watershed.

To provide additional background and theoretical perspectives for this study, the following chapter describes relevant literature drawn on during this research.

Chapter 3: Literature Review

In the face of uncertainty and complexity surrounding fisheries resources, it's not surprising that conflict, controversy, and public debate of fisheries issues, such as allocation and by-catch disputes, have plagued fisheries management for decades (Barber & Taylor, 1990; Conn, 2011; Pinkerton, 2009b). Allocation disputes often revolve around well-known heated debates of who gets access to fishing opportunities, what species is allocated, how much is allocated for harvest among user groups (e.g. commercial vs. recreational), where access is, and when access can occur. This can be exacerbated by differing opinions of what sustainable fishing is, how harvest rates and allocations are calculated, as well as by-catch disputes (these disputes involve the interception of non-target species). As a response to conflicts such as these, collaboration has often been an option utilized as an approach to resolve conflict (Berkes, 2002; Frame, Gunton, & Day, 2004; Wondolleck & Yaffee, 2000). This chapter reviews literature in areas most relevant to this research with linkages to collaboration and collaborative process design from a communication and conflict resolution perspective. For example, information is presented to highlight the linkage among willingness to cooperate, cooperation, reciprocal cooperation, and how these concepts relate to collaboration. As a result, this chapter draws on bodies of knowledge that include communication, conflict resolution, natural resource management, collaboration, policy, co-management, and community-based co-management fields.

Collaborative Canadian NRM Considerations

Prior to reviewing literature identified above, it is important to emphasize three aspects as they provide important context to consideration of collaborative Canadian NRM: uncertainty and complexity, First Nation implications, and differing forms of knowledge.

Uncertainty and complexity.

Uncertainty and complexity can relate to conflict and collaboration, as collaboration can be used as an approach to conflict resolution (Wondolleck & Yaffee, 2000). Natural resources are increasingly experiencing unpredictable fluctuations. In British Columbia this is evident with the recent record high sockeye salmon returns to the Fraser River, record low sockeye salmon returns to the Skeena River in 2013, and the record pink salmon return to the Douglas Channel area in 2013. Combining uncertainties such as these with various resource interests and dwindling governmental resources, logic suggests that challenging fishery management discussions will entail controversies.

As previously noted, collaborative endeavors are one approach that has been increasingly utilized to address controversies and the complex aspect of managing fisheries with consideration of biological, social, and economic goals (Barber & Taylor, 1990; Pinkerton, 2009a). A number of scholars have written on the advantages of collaboration in contributing to the fulfillment of a range of objectives (e.g. Barber & Taylor, 1990; Lachapelle et al., 2003). For instance, collaboratively developed goals enables objective development that can provide guidance for work-planning and subsequent discussions that can include and respond to varied interests (Berkes, Armitage, & Doubleday, 2007; Westley et al., 2007; Wondolleck & Yaffee, 2000).

First Nation implications.

An additional consideration of Canadian NRM relates to engagement of aboriginal peoples in fisheries management processes (AANDC, 2011; Gov. of BC, 2010; Notzke, 1995; Pomeroy & Berkes, 1997). As stated in Chapter 1, governance and policy are beyond the scope of this research, therefore this section provides an introduction to First Nation implications on

collaborative NRM. This topic will continue to be informed by governance and policy discussions among First Nations and governments.

As previously discussed, treaty agreements can influence fisheries management through the structure and process of NRM initiatives (Pomeroy & Berkes, 1997). In addition, court rulings have influenced policy development (DFO, 1999) and guide application of policies in the annual management of resources; for example, court rulings and legal agreements provide guidance to resource managers in terms of how and when they engage and consult with aboriginal peoples (AANDC, 2011; DFO, 1999; Gov. of BC, 2010). In the absence of treaties, collaboration in the context of First Nation involvement is complicated as there is a government to government relationship that, in many cases, has yet to be defined, however must be respected. This research recognizes that it takes time to bring clarity to First Nation governance and that this holds implications for NRM. Research recommendations respond with solutions designed to respond to evolving relationships and resolution of First Nation governance implications as well as emerging case law. An extension of this consideration, is that differing forms of knowledge and ways of knowing, such as Aboriginal Traditional Knowledge (ATK) are recognized in this research.

Differing forms of knowledge.

It is important to note that there are a number of ways that scholars refer to, include, and define knowledge. Common terms include Aboriginal Traditional Knowledge (ATK), Indigenous Knowledge (IK), Local Knowledge (LK), Traditional Ecological Knowledge (TEK) and Local Ecological Knowledge (LEK) (Battiste, 2011; Berkes, 1999; King, 2004). This knowledge sphere extends beyond an ecological focus and includes cultural, spiritual, historical, and other knowings, and therefore is not limited to aboriginal contexts (Berkes, 1999; Gardner,

2009; Rettig, Berkes, & Pinkerton, 1989). For example, local knowledge is considered by some to be recent knowledge, and might include, for example, recreational fishermen who have fished an area for the past thirty years that may have historical information pertaining to spawning timing, location(s) of spawning grounds, and long-term resource patterns. Differing forms of knowledge are a common theme in collaborative process discussions that involve First Nations, and while this dissertation does not test whether other ways of knowing are critical for collaboration, they are considered in the context of communication, development of common understandings, and of developing cooperative and reciprocal behaviour.

Multiple ways of knowing can facilitate deeper understandings (Battiste, 2011; Slocombe, 1998), and can include, for example, oral knowledge, written knowledge, and/or experiential knowledge. Deeper understandings can contribute to "…better applied results..." (Vandebroek, Reyes-García, Albuquerque, Bussmann, & Pieroni, 2011, p. 5), as incorporating multiple ways of knowing can provide practical support that can inform collaborative NRM processes as "…multiple sources and types of knowledge are relevant to problem solving" (Armitage et al., 2009, p. 96). In this context, multiple ways of knowing can enable more successful collaboration (Berkes, et al., 2007), as collaboration can respond to multiple, diverse interests. It also has the advantage of balancing the predominant science-centric approach to NRM by bringing a lens of scrutiny to science-related work, while also providing data that contributes to science-related work (Gardner, 2009). In addition, planning that includes and responds to various ways of knowing has been shown to contribute to development of successful long-term fisheries management processes (Castro & Nielsen, 2001; Kearney, Berkes, Charles, Pinkerton, & Wiber, 2007). Conversely, there are limitations to be aware of that include concerns about accuracy and verification (e.g. the reliance of oral tradition on memory makes

information difficult to verify), challenges related to standardization and scale (e.g. difficult to integrate with scientific data), and the proprietary nature of knowledge which inhibits or prevents information sharing (Gardner, 2009).

In summary, there are both benefits and limitations to various forms of knowledge that must be considered, although information and knowledge exchange has been described as a fundamental element for successful NRM (de Nooy, 2013). While science remains the dominant form of knowledge, there has been an increased focus on valuation and inclusion of other kinds of knowledge in fisheries-related discussions (Gardner, 2009; Raymond, Fazey, Reed, Stringer, Robinson, & Evely, 2010). Therefore, differing forms of knowledge were considered throughout this research in two ways: 1) by enlisting oral knowledge, written knowledge, and experiential knowledge in research design; and 2) recommendations are made that can include indigenous knowledge such as ATK as well as other non-science related knowledge such as LEK in both science and fisheries management-related discussions.

Cooperation, Communication, and Collaboration

Prior to moving into discussion of collaborative NRM, implications of cooperation on collaboration, concepts of communication and conflict in the context of collaboration, and the appropriateness of collaboration are explored.

Cooperation: A fundamental building block of collaboration.

Collaboration as an approach to addressing uncertainty, complexity, conflict, and controversy has been demonstrated successfully (e.g. Ostrom, 1990; Wondolleck & Yaffee, 2000), but why is this the case? What common factors characterize success? And what does this involve? Many authors have provided insights into these questions (e.g. Armitage et al., 2007; Davies & White, 2012; Lachapelle et al., 2003). Before exploring these elements of

collaboration, however, it is essential to introduce the concept of cooperation as it has important implications on the potential for collaboration to occur. Cooperation is demonstrated (for example, through collaboration) when individuals work together in a particular situation to do something (Cooperation, n.d.) (e.g. problem-solve, come to agreement, meet an objective, etc.). In essence, cooperation is demonstrated when individuals work together with others.

Existing literature highlights that for successful collaboration to occur there must be willingness to engage in cooperation and compromise, rather than engage in competition and resistance (Axelrod, 1984; Singleton, 2000; Wondolleck & Yaffee, 2000). Further, resistance to cooperation can lead to conflict (Singleton, 1998), exacerbate issues, and can undermine collaborative endeavors. This is juxtaposed by the potential that cooperation and compromise can lead to innovative problem-solving (Pinkerton, 1999; Westley et al., 2007; Wondolleck & Yaffee, 2000). Scholars note, however, that cooperation cannot exist if only one party or group is willing. Thus cooperation is dependent on reciprocal cooperation by others (Axelrod, 1984). This line of thought leads to the question of whether the potential to meet individual or group objectives can be best met by cooperating or not. Ultimately, decisions of individuals and groups to participate in collaboration largely relates to whether they can achieve their objectives more effectively on their own, or more effectively through cooperative behaviour (Wondolleck & Yaffee, 2000). There are times when participation is also influenced by individual's personal tendencies to work individualistically and by whether they have requisite skills to effectively collaborate (Huxham, 2000). When collaboration does occur, positive, respectful behaviour can stimulate an increased willingness to cooperate (i.e. reciprocity), which "…develops through recurrent interactions" (Wondolleck & Yaffee, 2000, p.66). Based on Axelrod's work on reciprocity, Wondolleck and Yaffee went on to suggest that once cooperation based on

reciprocity is established, it is more likely to endure and that as cooperation continues over time, "…the benefits of cooperation rise and a non-cooperative strategy looks less and less attractive" (Wondolleck & Yaffee, 2000, p. 67), and cooperation becomes mutually rewarding (Axelrod, 1984). This does however, involve "…willingness and trust to work with others…" (Wondolleck & Yaffee, 2000, p. 67) as well as effective interpersonal communication skills.

Communication.

Communication is a critical skill that can enable cooperative willingness to translate into dialogue (de Nooy, 2013). Isaacs' (1999) notion of dialogue relates to an action-oriented approach to talking, which includes expression and meaning-making that can lead towards proactive solutions. There are challenges to this of course, as common barriers to communication include aspects such as cultural differences, differing world views, education differences, temperament differences, personal disposition, and knowledge differences (Klimova & Semradova, 2012). Optimally however, dialogue can overcome these challenges with techniques such as active listening whereby participants give space to others to voice their thoughts and ideas, while it also requires hearing what they have to say with an open mind before moving on to consider it within the context of their own personal ideologies, i.e. listening respectfully (Ury, 2007). During this listening process Cameron and Green (2009) noted that it is critical to suspend judgements on what others are saying and consider their words "…without resistance…[or the inclination to]…defend your own view or position" (p. 323). Facilitation can aid this communication process, and is discussed later in this chapter.

de Nooy (2013) noted that communication among collaborative participants is essential to the process of identifying common interests, reaching common understandings, of working cooperatively towards common interests, and of development of trust (i.e. social capital). The

following definition of social capital represents synthesis of literature and ideas attributed to seminal scholars in the fields of co-management and adaptive management. Social capital is "…the social norms, networks of reciprocity and exchange, and relationships of trust that enable people to act collectively" (Armitage et al., 2007, p. 330). Building relationships in this way can also facilitate innovative problem-solving (Westley et al., 2007), and can lead to solutions that seek to maximize participants interests as much as possible to the benefit of all parties (Wondolleck & Yaffee, 2000). An associated outcome of this process is the building of social capital and in essence, trust (de Nooy, 2013; Plummer & FitzGibbon, 2007), which is crucial for development of collective action (Ostrom 2008). This later point bears repeating, as trust supports reciprocal behaviour, strengthened relationships, and long-term cooperation (Axelrod, 1984; Davies & White, 2012). Developing trust is a long-term process and it has been suggested that it can take somewhere in the realm of three to five years (Pomeroy & Rivera-Guieb, 2006) or even up to a decade to develop (Berkes et al., 2007). As such, there are significant costs associated with collaborative undertakings (Davies & White, 2012; Singleton, 1998).

Cooperation and communication: Barriers to conflict resolution.

When willingness to cooperate is lacking, however, it raises the question of whether and how cooperation could be supported. Another consideration involves whether an individual's interests appear to "…be best pursued through competition: [such as] pursuing advantage, exploiting others, hiding or distorting information, etc. …[and whether they demonstrate behaviour that maximizes self-interest and]…undermine[s] the potential for cooperative interaction" (Wondolleck & Yaffee, 2000, p. 49). An additional consideration is brought to bear with Ebbin's study (2004) of two cases of cooperative management that provided formalized forums to enable structured conflict resolution to occur, yet conflict remained. For example,

Washington's Puget Sound salmon co-management between tribes and state was examined and "…conflict over intertribal allocation was thought by some to have increased since state-tribal co-management…[and in the case of the salmon fisheries management on western Alaska's Kuskokwim River]…many respondents noted that upriver-downriver conflicts over salmon, moose and other resources had increased since the formation of the [Kuskokwim River Salmon Management Working Group]" (Ebbin, 2004, p. 84). These cases demonstrate that cooperative management "…may facilitate the resolution of some types of conflicts, [however] others may remain and new ones develop" (Ebbin, 2004, p. 84). Revisiting this study would be useful, as research findings raises the question of whether conflicts that remain and/or arise during collaboration may have a short duration as collaborative efforts may be able to address them over a longer timeframe.

More recently, de Nooy's 2013 paper noted that communication of knowledge and values is affected by contextual factors such as group affiliations, as there are often strong identities associated "…that may be in the way of assimilating knowledge and values among communication partners" (de Nooy, 2013). While this may indicate increased inter-group conflict in the short term, de Nooy's study indicated that interpersonal communication between stakeholder groups mitigated inter-group barriers and conflict decreased. This study also showed that as inter-group interpersonal communication improved, intra-group conflict increased. It was suggested that this may be a short term effect of the modified understanding of the stakeholder group representative prior to them sharing information with their constituents (de Nooy, 2013). These results must be taken within the context of timing and contextual factors, as the increased intra-group conflict may be resolved after interpersonal communication has occurred among the representative and their constituents (de Nooy, 2013). However, it must also be recognised that

until work is undertaken to study whether this occurs, there may be a longer term escalation of intra-group conflict associated with collaborative participation (de Nooy, 2013).

These examples highlight complexities associated with interpersonal communication and demonstrate variability of its outcomes. It is well known that communication is not necessarily indicative of reaching common understandings or agreement, or of being a precursor to agreement (de Nooy, 2013). These examples provide insights into why collaboration is not considered a conflict resolution panacea (Armitage et al., 2007; Wondolleck & Yaffee, 2000).

In addition to considerations noted in this section, collaborative initiatives are generally recognized as costly endeavors (Davies & White, 2012; Singleton, 1998); therefore it is important to deeply consider the appropriateness of collaboration to a particular problem. Formalized situation assessments by a professional mediator or facilitator is an option to explore in the effort to determine whether collaboration may be appropriate. Careful consideration will prove valuable as, despite potential benefits associated with collaboration, there are times when collaboration may not be appropriate (Armitage et al., 2007; Wondolleck & Yaffee, 2000). Recognizing this, Wondolleck and Yaffee closed their 2000 book with a particularly pertinent statement in their chapter entitled A Message to Individuals: "collaboration is not the answer to all problems, but it can be helpful in many situations. So it is important to evaluate each situation as a candidate for a collaborative process and not to blindly advocate or oppose collaboration" (Wondolleck & Yaffee, 2000, pp. 247-248).

Can collaboration work?

Frame, Gunton, and Day (2004) noted "the primary benefit of [collaborative planning] is that it is [more] likely to resolve conflict among competing stakeholders than other planning processes because it identifies solutions that meet mutual interests of all parties" (p. 60). There

are many supporters of cooperative and collaborative management (e.g. Ostrom, 1990, 2008; Pinkerton et al., 2014; Singleton, 1998, 2000; Wondolleck & Yaffee, 2000). Indeed, "management processes can be improved by making them adaptive and flexible through the use of multiple perspectives and a broad range of ecological knowledge and understanding, including those of resource user communities" (Carlsson & Berkes, 2005, p. 67).

Through works such as those by the aforementioned authors, various conditions favourable to successful collaboration have been identified. For example, Ostrom (1990, 2008) has lent support to the field of collaborative NRM by identification and discussion of how important conflict-resolution mechanisms are to the endurance of cooperative institutions. Pinkerton (2009b) provides useful information regarding conditions that are favourable for collaborative successes (discussed later in this chapter), and the works of many others are later introduced that contribute knowledge towards conceptualizing, designing, and implementing collaborations. Other works discussed in this chapter further support collaborative process design, and include aspects such as: careful planning that can consider challenges and facilitate effective collaborative management, the importance of clearly defined process goals and development of trust (Lachapelle et al., 2003), and benefits of including adaptive learning-based strategies in collaborative endeavors (Armitage et al., 2007).

These works are important as they demonstrate the potential for successful collaboration, and provide ways to operationalize collaboration, support development of social capital and of collaboration outcomes (e.g. agreements), as well as their implementation (Frame et al., 2004; Wondolleck & Yaffee, 2000). This involves "…building understanding…[and]…developing interpersonal relationships and interorganizational linkages…" (Wondolleck & Yaffee, 2000, p. 23) that can lead to increased understandings, problem-solving, improved relationships, sharing

of knowledge, and support informed decision-making (Frame et al., 2004; Wondolleck & Yaffee, 2000).

However, challenges can inhibit the effectiveness of collaborative processes. Frame, Gunton, and Day (2004, p. 61) offer a list that briefly introduces common obstacles that include:

- Fundamental ideological or value differences between stakeholders;
- Lack of trust among stakeholders;
- Significant power imbalances among stakeholders;
- Negotiation skill imbalances among participants;
- Affected interest groups choose not to participate or are not organized to participate;
- Stakeholders are poorly organized or cannot clearly define their interests;
- Significant time and financial resources are required, restricting access;
- Participant burnout; and
- Weak accountability of stakeholders to their constituents and to the public.

Many of the works cited in this section have drawn lessons from both successful and failed processes, and focus on positive aspects of collaboration as well as pitfalls. This information is relevant to this study, however from an operational practitioner's perspective, very little guidance was found that clearly identifies criteria that suggest when a process may not be appropriate. Given Wondolleck and Yaffee's (2000) assertion that collaboration may not be an appropriate approach to problem-solving, which is supported by Armitage et al.'s (2009) argument "…that powerful stakeholders may circumvent participatory processes when it serves their interest to do so" (p. 179), it is surprising how little operational guidance has emerged that might support practitioners. An exception can be found in Wondolleck and Yaffee's (2000)

book in Part III, which includes questions to guide practitioners in determining if collaboration might be appropriate. Published in 2000, this guidance would likely benefit from updates based on knowledge gained in the interim. There is also utility in the synthesis of existing knowledge into operational tools that could guide practitioners during collaborative process design, implementation, and monitoring. This research furthers understanding of when collaboration does not work, however filling the gaps identified above are beyond the Skeena-specific objectives of this research.

Common Pool Resource Management & Collaboration: What Have We Learned?

There is a wealth of common pool NRM information to draw on in terms of collaborative process design that can promote effective communication, resolution of conflict, and support successful collaboration. Opening this discussion, Ostrom's work emphasized the importance of conflict resolution mechanisms for successful management of common pool resources. Following this, consensus as an approach to collaboration and implications of historical context are introduced as these topics can deeply impact the potential success of collaborative initiatives. The concepts of learning-by-doing and social learning are then introduced, as the process of reflection and learning have the potential to significantly influence collaborative processes. Similarly, the human dimension presents a significant consideration as we as humans are all unique, and as such, entail unique interpersonal communication styles.

Common pool resource management: The importance of conflict resolution mechanisms.

Ostrom (1990, 2008) posited that conflict resolution mechanisms enhanced the endurance of cooperative commons NRM institutions. Having "…relatively low-cost, speedy, and effective conflict resolution mechanisms…" (Ostrom, 2008, p. 15) in place can address conflicts quickly,

thereby reducing the number of conflicts that could negatively impact trust and social capital. The need for effective conflict resolution mechanisms for this research are obvious and relate to decades long conflict that has existed among Skeena watershed interested parties, as described in Chapter 4. Institutions are associated with rules (e.g. TOR) that govern various aspects such as resource extraction, participation, and behaviour, therefore mechanisms to deal with disagreement and conflict are essential for resolution. Mechanisms can be informal (e.g. leader or process chair can resolve issues), or formal (e.g. involvement of higher authorities or court systems). The presence of conflict resolution mechanisms alone does not necessarily suggest success or longevity of institutions, however it defies logic to suggest that institutions could be maintained in the long term without them.

Since Ostrom initially posited the importance of conflict resolution mechanisms in 1990, Ostrom revisited her assertion in 2008 in the context of assessing its validity through analysis of thirty-three scholarly articles. Her assessment demonstrated general support for the need for low cost conflict resolution mechanisms that could quickly respond to conflict as it arises. In one instance, the importance of a low cost option was emphasized as the absence of a low cost conflict resolution option was linked to a less successful case that experienced divergent views and political divisions (Ostrom, 2008).

In alignment with Ostrom's work on institutional design, Pinkerton pointed out in 1999 that collaborative processes need to be thoughtfully designed, implemented, and facilitated in order to move beyond resource conflicts. When there are multiple differing values and interests, conflict can lead to competition rather than cooperation "…and if fragmented interests are not brought together and forced to identify and integrate their common interest in sustainable management and ecosystem health…conflict will be continually forced to higher and higher

governmental levels" (Pinkerton, 2007, p. 160). Pinkerton went on to suggest that leadership from the agency responsible for objectives related to the public interest, coupled with principled negotiation facilitation and an open-minded attitude to how objectives might be reached, "…competition could be reduced significantly" (p. 163). This therefore suggests that as competition is reduced, cooperation becomes a more viable option. This is paramount for communication to be effective, particularly with respect to consensus-based processes.

Consensus-based collaborative processes.

Many collaborative processes work from the goal of achieving consensus, as was the case of the SWC and the intention of the SWI. According to Rudeen, Fernandez-Gimenez, Thompson, and Meiman (2012), for example, in terms of achieving consensus "…participants strive to create agreements that all members can support, or at least not actively oppose, and that provide participating interests with better options than they could otherwise achieve" (p. 1016). This suggests that collaborators may not wholly agree with the decision, however they do not strenuously disagree with it and can live with it, which is beneficial as it enables collaborative progress to be made.

Conversely, consensus has been demonstrated to have drawbacks as well. In the case of the Intermountain Public Lands Cooperative located in the western United States, for instance, "…the inability to reach consensus resulted in participant burnout and reluctance to collaborate on other projects" (Rudeen et al., 2012, p. 1024). Therefore, it is important to set realistic objectives for consensus-based processes, otherwise the danger of not reaching consensus can have far-reaching implications.

Alternatives to consensus include voting (e.g. majority votes or using Robert's Rules of Order), secret ballot, etc. and there are benefits and drawbacks of each option. While these

approaches may expedite group decisions, approaches to reaching agreement through voting processes essentially create an environment that requires agreement or disagreement. Therefore they can become adversarial when 'for' or 'against' factions arise, and while this may not always be the case, this is a well-known associated risk. Consensus is generally considered to be the goal of effective collaboration as it supports communication, evolution of common understandings, identification of common areas of interest, trust building and the building of social capital, as well as equality among participants (Wondolleck & Yaffee, 2000). If consensus is not reached however, other mechanisms such as voting can be an effective 'default' mechanism that avoid consensus-oriented stalemates.

Historical context.

Another important consideration is that "…options available for institutional design are historically contingent" (Stern et al., 2002, p. 477). The impacts of historical contexts are woven through many of the works presented in this chapter, however there was little specific information found related to identification of impacts or implications of long-standing historical conflict on the viability or effectiveness of collaborative processes. What is clear in the literature is that historical conflicts appear to affect willingness to interact, cooperate, and collaborate. This research attempts to shed additional light on the impacts and implications of the historical context of long-standing conflict among multiple interested parties with divergent goals and interests in the Skeena watershed.

Learning-by-doing and adaptation.

Adaptive management *per se* has not been explicitly explored in this chapter, as this term refers to an approach that involves a science-centric method of hypothesizing, assessing information needs, modelling, and comparing options as an approach to dealing with uncertainty

(Berkes, 2002; Armitage et al., 2007). Conversely, learning-by-doing and adaptation, a process that proactively applies learning in an adaptive cycle that does not involve a science-centric hypothesis approach, is explored. This approach was taken to avoid the dominant science-centric approach often encountered in fisheries management and science-related fisheries discussions as it embraces other ways of knowing, yet supports learning from experiences through proactive adaptation. Further, the concepts of performance measurement and learning-by-doing are considered in this dissertation in the context of adaptive processes of continual improvement. Supporting this approach Westley et al. (2007) suggest that innovation and change are integral parts of the learning, adaptive cycle. This involves collaborative processes that are subjected to periodic reviews to assess learning (e.g. annual review of performance measures to identify progress towards objectives) that can enable process improvements by responding to learnings (Berkes et al., 2007; Wondolleck & Yaffee, 2000). While some work has been done to learn from historical Skeena collaborations, there is an opportunity to assess these experiences *post hoc* to inform planning of a path forward that supports continued learning and adaptation with the ultimate goal of effective collaborative fisheries-related discussions.

Social learning.

The learning aspect of the adaptive cycle highlights a term not utilized thus far: social learning. Armitage, Berkes, and Doubleday (2007) defined social learning as "the collaborative or mutual development of and sharing of knowledge by multiple stakeholders by learning-by-doing" (p. 330). There are numerous interpretations of the term social learning, and many facets to discussions. Plummer and FitzGibbon (2007) provide an excellent overview of discussions and synthesized their understandings into a table of "attributes associated with social learning in environmental management" (p. 42). The table suggests the following five attributes of social

learning in the context of environmental management: (1) interaction, inclusion, and negotiation that includes all parties interested or with a stake in negotiations, particularly in the context of face-to-face and deliberative interactions; (2) "the process of social learning involves making connections between people and the environment" in the context of systems thinking; (3) that "innovation stems from diverse perspectives, approaches, and sources of information and knowledge" (i.e. integration); (4) that reflection and reflexivity occur as part of an "action orientation [that] involves diagnosis, designing, doing (undertaking shared collective action)", and evaluating; and (5) that learning can occur through "mechanisms of reflection (critical thinking) [that can] facilitate different types of learning from action" (p. 42). These attributes align with many concepts of collaboration described throughout this chapter, and it has been long recognized that social learning can contribute to collaborative success (Pinkerton, 1994), therefore it is considered in this research.

The human element of collaboration.

The following Berkes, Armitage, and Doubleday (2007) statement points out the challenges of collaboration in co-management arrangements:

> "…It is clear that the success of co-management ultimately depends on the development of human relationships and institutional arrangements. Facilitating such social interactions presents a formidable challenge, as most resources tend to be contested by multiple stakeholders with diverse interests and values, and relationships are complex. …co-managers need to understand that failure to facilitate social interactions may result in failure of the co-management process itself…" (p. 310).

Agrawal (2002) supports this with his emphasis on the importance of consideration of external social, economic, and cultural contextual factors.

From discussions throughout this chapter thus far, we can see that collaboration requires mechanisms that can guide processes to address conflict and overcome communication challenges associated with conflict. Close attention to collaborative process design is essential support for collaborative undertakings, although clearly, each situation is unique and effective collaborative processes are not easy to design or implement.

Collaborative Natural Resource Management: Process Design Lessons

Before delving into lessons from collaborative NRM regimes, this section opens with a pertinent quote from Pomeroy and Rivera-Guieb (2006) with regard to collaborative management:

> "There is no blueprint or model for co-management but rather a variety of arrangements from which to choose to suit a specific context. Co-management should be viewed not as a single strategy to solve all problems of fisheries management, but rather as a process of resource management, maturing, adjusting, and adapting in response to changing conditions over time" (p. 10).

With this view in mind, collaborative processes are each unique and require unique institutional arrangements. There are, however, broad lessons and principles that can support us as we work to improve how we design and implement collaborative processes (Huxham, 2000).

While there are often legal reasons for establishing collaborative management institutions, such as aboriginal claims and treaties (Singleton, 1998) and the interest of establishing more effective resource management (Berkes, 2002), conflict resolution has been identified as another primary driver of collaborative institutional arrangements (Berkes, 2002). The SWC and SWI both evolved in the context of conflict resolution, therefore examination of these processes has been undertaken from this perspective. This section draws on lessons

learned from collaborative processes internationally and draws on collaborative NRM, collaborative process, community-based co-management, adaptive co-management, fisheries management, policy, conflict resolution, and communication fields of study. The following sections outline variables that are drivers of success and failure that were gleaned from the literature, and are summarized as key themes important to consider with regard to collaborative NRM.

Key to note with regard to the remainder of this chapter, is the approach taken with this research in terms of power dynamics. Based purely on personal perceptions, I suggest that examination of power dynamics and associated implications pertaining to fisheries-related discussions is fascinating. There are limitations with regard to conducting inquiry in this regard in the context of historical Skeena collaborations however, as the SWC ended eighteen years ago and the SWI ended five years ago. As such, there are implications such as those noted in the methodology chapter (Chapter 2) related to reliance on participant memories, influences of interactions among participants since the times of these processes, and implications of the authors employment, etc. that would inhibit inquiry. These considerations make an explicit focus on power dynamics difficult in terms of obtaining accurate, relevant findings and as such, this research was designed with a focus on collaborative process design as a tool to facilitate communication and conflict resolution in the Skeena watershed. Therefore power and power dynamics aspects that emerged during data analysis are discussed throughout the remainder of this chapter in the context of collaborative process design.

Trust.

Lack of trust has been demonstrated to be a barrier to collaboration (Lachapelle et al., 2003) and is described as "…a more general theme affecting all parties perceptions of others"

(Wondolleck & Yaffee, 2000, p. 58). Implications of lacking trust extend to resistance to collaborative efforts and have been linked to wariness around the 'real' objectives of collaboration (e.g. voluntary endangered species projects vs. regulator interest in controlling private property or small businesses using endangered species rationales). Lack of trust has also been related to suspicions regarding how others' data and science-related work was viewed. For example, Wondolleck and Yaffee (2000) noted that "often one group of technical experts will be suspicious of another group's interpretation of data or methods for analyzing them" (p. 59). Building on this, preconceived intergroup attitudes and stereotyping can polarize groups and "…keep them apart even when they share common interests…[and while]…traditional decision-making processes reinforce group differences and make it more difficult for them to work collaboratively…extreme polarization can occur when intergroup attitudes are reinforced by adversarial processes" (Wondolleck & Yaffee, 2000, p. 59). This reinforces the need to consider trust-building as an overarching objective of effective collaborative process design. The polarization of Skeena interested parties and the history of conflict illustrate the explicit need to consider trust and trust-building in this research. In addition, Gutiérrez, Hilborn, and Defeo's (2011) examination of 130 international co-managed fisheries case studies suggested that investing in collaborative opportunities with user groups contributes to increased social capital (i.e. trust) and therefore more successful collaboration. As such, trust is a theme that weaves throughout this dissertation.

Identification of common ground.

Collaboration offers the opportunity to problem-solve and build trust. Part of the problem-solving process is that of finding common ground, and Wondolleck and Yaffee (2000) note various ways to do so. For example, commonality can arise by "…drawing on a sense of

place or community…" (Wondolleck & Yaffee, 2000, p. 73). Using techniques such as community events can foster a sense of identity with, for example, a watershed. Identity, for example, might also be fostered through a shared purpose, particularly when there is a sense of urgency present, or by working together to develop a common vision, goal or objectives, which may involve overcoming conflict to find compatible interests. Wondolleck and Yaffee (2000) go on to point out that "…perceiving common goals is a critical starting point in a problem-solving process…[and that]…establishing communication between…groups and encouraging them to articulate their interests and concerns can allow points of commonality to emerge" (p. 80). Davies and White (2012) also consider identification of "…convergent values and goals…" (p. 160) as important to the effectiveness and endurance of collaborative endeavors.

Formalizing commitment.

To reach a point of commonality as was suggested above, it implies that a forum exists that can enable these kinds of communication, and where none exist there are opportunities to create an interactive forum. This might initially take the form of simple outreach and informal collaborative relationships, however it could also take the form of an agreement such as an MOU that formalizes collaborative relationships. Formalization contributes to the legitimacy of collaboration as it demonstrates commitment to the process (Wondolleck & Yaffee, 2000). An example of this are MOUs that formalize interagency relationships such as the SWC MOU and the Canada-B.C. Agreement on the Management of Pacific Salmon Fishery Issues (Can-BC, 1997). Another approach is to establish an advisory committee as a means to "…involve different interests in discussing, evaluating, and making recommendations about desired direction" (Wondolleck & Yaffee, 2000, p. 95), of which the SWC is also an example. Each

situation will require a different approach that can respond to unique circumstances (Huxham, 2000).

Leadership.

Leadership is considered an essential element of collaborative successes, as this involves the ability to provide incentives to participate (discussed in the following section), momentum to overcome obstacles, and support of a process vision (Davies & White, 2012). It is also suggested that leadership supports legitimate processes, provides stability to processes (i.e. resilience), enhances conflict resolution, and is critical for successful collaborative management activities (Gutiérrez, Hilborn, & Defeo, 2011). Leadership was vastly different for the SWC and SWI. Therefore these processes would benefit from examination of leadership as it likely has linkages with historical successes and challenges.

Leadership is particularly relevant as Wondolleck and Yaffee (2000) state that "public agency leadership is essential to the success and spread of collaboration efforts" (p. 213) as they have legislated responsibilities and authorities that must be upheld although it is essential to have "…agency commitment to the collaborative approach" (p. 225), and both the SWC and SWI involved regulatory agency participation. Further, Yaffee and Wondolleck (2003) noted that "agency concerns and interests must be represented within the collaborative process in order to guide and bound the decision space" (p. 67) and found evidence that "agency officials who have been successful in collaborative initiatives have been able to provide expertise and retain ultimate decision-making authority power but in a way that is supportive of collaboration" (p. 130). This work supports representative inclusion of decision-makers and demonstrates that it is possible for collaboration to work in the context of development of advice rather than decision-making.

Wondolleck and Yaffee (2000) also found that when there was agency support for a collaborative initiative as well as agency commitment to process outcomes that "…upheld the agency's agreements, relationships were strong and remained intact" (p. 226). This commitment to collaboratively developed direction can decrease conflict, as lack of commitment or follow-through has been a significant issue for collaborative planning in America (Yaffee & Wondolleck, 2003). There must be clear commitments to implementation, and potentially monitoring, of collaboratively developed agreements (Frame et al., 2004). An important caveat however, it that agency support and commitment to process outcomes doesn't delegate decision-making authority of regulatory agencies, as the commitment can be to seriously consider the recommendation/advice. Further, if a process is representative and inclusive of appropriate interested parties (as discussed in the Committed, inclusive representation section), there should be minimal issues with regulatory agencies considering, accepting, and implementing collaboratively developed advice. Building on this, when regulatory agencies are involved in collaborative processes, there should be willingness to adopt recommendations/advice (i.e. implementation of process outcomes) as they were party to their development (Wondolleck & Yaffee, 2000).

Incentives.

It is important during collaborative processes that agreements/commitments and relationships are upheld "…by creating incentives, generating resources, or establishing structures that promoted ongoing interactions" (Wondolleck & Yaffee, 2000, p. 101). These aspects have been repeatedly shown to go a long way towards improving interactions among participants while also contributing to improved NRM. Examples of incentives include the understanding that governments will make a unilateral decision if agreement is not reached in the

process (Frame et al., 2004), law or legal aspects (Singleton, 1998), access to funding, participation in science-related work (Wondolleck & Yaffee, 2000), participatory development of advice to regulatory agencies, a regulatory agency assertion that a collaborative forum is the only avenue for contributing feedback to decision-making such as occurred during the SWC, etc. The ultimatum by DFO to restrict Skeena-bound steelhead interceptions by 50% unless a cooperatively developed solution was agreed to by the SWC (as described in Chapter 4) clearly illustrated an incentive to participate. Incentives to participate in the SWI however, were less obvious and warrant examination.

The collaborative process must be driven by some kind of shared vision or purpose, and incentives to collaborate and work towards agreement (Frame et al., 2004). Essentially, there must be sufficient incentives (Gutiérrez et al., 2011) to draw participants to the table initially and then to maintain their commitment to the process, particularly with the consideration that trust-building and social capital are long term development processes (Berkes et al., 2007; Pomeroy & Rivera-Guieb, 2006). Incentives are critical to initial participation as well as to continued participation in processes, as some parties may benefit from conflict (e.g. media exposure can enable an increased ability to raise funding, greater potential for change, etc.) (Yaffee & Wondolleck, 2003). Therefore effective incentives can serve to support cooperative behaviour and circumvent conflict. Ultimately, "people act largely as a strategy for achieving their own interests, including an interest in a creative and durable solution" (Yaffee & Wondolleck, 2003, p. 69).

Accountability, roles, and responsibilities.

It is widely recognized that "…clarity of roles, responsibilities and the purpose of participation, including the degree of stakeholder influence in decision-making, is essential for

realizing successful collaboration" (Davies & White, 2012, p. 164). This involves parties working together to design and develop the process to best respond to the unique needs of that process, which includes clear ground rules that can be considered "…a comprehensive procedural framework including clear terms of reference and operating procedures" (Frame et al., 2004, p. 69). This suggests that collaboration requires participants to possess skills that enable "…establishing ground rules, managing data, creating a safe climate, and displaying empathy" (Wondolleck & Yaffee, 2000, p. 64). In cases where disagreements occur (even when consensus is reached), strategies to manage this are required that can respond to disagreements (Ostrom, 1990, 2008); this supports reduced conflict within the process as well as more successful implementation of consensus agreements (Frame et al., 2004).

Clarity of expectations of roles and responsibilities through transparent mechanisms such as terms of reference enable accountability to the process and to participants' constituents. While accountability to constituents through mechanisms such as this support participant accountability, it's important to recognize that power differences among participants may exist (e.g. regulatory agencies that are responsible for decision-making vs. organized interest groups) that could impact group dynamics (e.g. altered behaviour related to funding access opportunities). Explicit inclusion of respective jurisdictional mandates, and roles and responsibilities in guidance documents such as TORs work to address these kinds of power-related issues (Wondolleck & Yaffee, 2000). Although, Frame et al.'s (2004) results from analyzing seventeen Land and Resource Management Plans developed in BC suggest that "…inequality in power among stakeholders is not necessarily a fatal flaw undermining the process" (p. 75). Despite tensions within literature in terms of potential impacts and implications of power dynamics on collaborative participants and processes; transparent communication

around power-related issues such as respective jurisdictional mandates of participating regulatory authorities and how collaborative advice will be considered by regulatory authorities provides transparent recognition of power-related issues and may serve to reduce negative impacts.

Goals and objectives.

Inadequate goal definition can act as a barrier and specific goals are importance guidance for collaborative processes (Lachapelle et al., 2003). Goals can be defined as "…ideals, major accomplishments, ends, or states of affairs to be achieved" (Barber & Taylor, 1990, p. 365). Objectives support goals in an operational sense; they are measurable statements that identify tasks that work towards achieving goals. With this explicit linkage in mind, goals must be clearly defined so that measurable objectives can be developed and operationalization can occur (i.e. problem-solving) (Barber & Taylor, 1990). The vastly different beginnings of the SWC and SWI (as presented in Chapter 4) suggest that examination of this aspect might provide additional insights into the limited longevity of these processes.

This is particularly pertinent as the setting of goals and objectives can be influenced by participant values and interests, and the more heterogeneous the group's values and interests are, the more challenging it is to reach consensus agreement on goals and objectives (Barber & Taylor, 1990). Similar to defining collaboration, there are varied ways to define values. Barber and Taylor (1990) offer a broad social scientists view of the term in their paper on the importance of goals, objectives and values to fisheries management.

> "…Values are absolute and basic judgemental assumptions we make about the world in which we live. Values provide us with a set of judgemental standards about what we hold to be good or bad, beautiful or ugly, fair or unfair, and we are the basis for

shaping out attitudes, behaviour, and perceptions of reality – and we are unaware of their exact nature (Rokeach 1973; Petulla 1980; Sashkin and Morris 1984)" (p. 369-370). Participants in both the SWC and SWI had vastly divergent values and interests as described in Chapters 1 and 4.

Goals must be well-defined, and objectives must be concise and measurable support for goals so that they can effectively be operationalized (Barber & Taylor, 1990). The process of goal and objective development is important as a means to identify conflicting values and interests, to identify common ground, and to develop goals and objectives that accommodate all interests; this approach can reduce conflict and inform prioritization of objectives and associated actions/tasks (Barber & Taylor, 1990). This approach is inherently common in current NRM, and is often expressed as incorporation of multiple aspects or factors in goals and objectives (e.g. biological, social, political, economic, cultural, etc.).

Committed, inclusive representation.

Another aspect of paramount importance is inclusive representation that enables different interests to be at the table, with clear criteria for membership (Frame et al., 2004; Pinkerton, 1994). While each process entails unique criteria for membership, development of criteria can support a process that includes parties relevant to discussions yet keep the process membership size manageable. "While open access to a collaborative effort is often important symbolically, making sure that key decision-makers, interests, and opinion leaders are represented is critical" (Wondolleck & Yaffee, 2000, p. 106). One element of representation is ensuring that those with appropriate authorities are present at the table (Wondolleck & Yaffee, 2000). As previously noted, participation is often voluntary yet requires commitment, both of which can be supported with appropriate incentives (Frame et al., 2004). This is particularly important when there has

been longstanding conflict similar to conflict affecting Skeena watershed fisheries-related discussions, as there may be reduced willingness to cooperate.

Depending on the unique characteristics of a collaborative process, various ways of identifying appropriate representation have been demonstrated as successful. One approach is to identify key interested parties and snowball sample them with regard to who would be important to include. In the case of the Derby Partnership, an informal watershed-based information-sharing collaboration in Ohio, inception of this process began with involvement of relevant agencies and then went on to solicit participation of other groups/organizations as they were more likely to participate once sincere agency commitment had been established (Wondolleck & Yaffee, 2000). In other situations, positions were named ahead of time in order to keep group size at a manageable level yet balance this with inclusive representation of interested parties. For example, in the case of Southern California's Orange County Central-Coastal Natural Community Conservation Planning, "…four environmental representatives…were selected through nominations from conservation organizations and were expected to communicate with their members and other groups…" (Wondolleck & Yaffee, 2000, p. 107).

Some consider it important to include the public in collaborative processes so that the public interest can be represented. However while many collaborative processes have included some level of public participation, as did the SWI, public involvement has been demonstrated to entail challenges such as: use of public forums as positional expression platforms, public conflict that nearly became violent, and unwieldy processes that lacked meaningful dialogue (Lachapelle et al., 2003). When public servants in British Columbia (provincial and federal government representatives) participate as members of a collaborative effort, they can be seen as representative of public interests as they are participants there on the behalf of governments to

support their mandates. One element of those mandates is to represent public interests. As a caution however, if there are perceptions of favoritism or bias of government representatives towards specific participants or groups or if there are perceptions that mandate components are conflicting, there is a risk of conflict that could raise questions around the legitimacy of the process.

Facilitation.

When a process is established it is important to ensure that "people with a range of interests…" are involved "…in a manner that [is] respectful of their differences, and they [are] well organized and facilitated" (Wondolleck & Yaffee, 2000, p. 101). This enables participants to be involved in an interactive process that enables participants to invest "…in the *process* of interaction, not just the products" (Wondolleck & Yaffee, 2000, p. 101). This aspect is particularly important as it enables participants to view their interactions as substantive and the process itself as legitimate and meaningful. Legitimate is used here in the context of regulatory authorities that cannot delegate decision-making authority yet commit to serious consideration of advice developed through an advisory process. This extends to implementation if advice falls within legislative and policy frameworks. In the face of conflict, such as conflict that has been longstanding in the Skeena watershed, facilitation can be extremely important.

Facilitation that can support positive interpersonal interactions is important, as "…many fledgling efforts die because of…interpersonal dynamics" (Wondolleck & Yaffee, 2000, p. 108). While some situations entail fairly low-key interactions and therefore low-key facilitation, there are times when a stronger, more forceful approach is needed. This includes times when problematic personalities are present in a process, conflict is palpable, and "…so groups more powerful because of political connections or economic backing don't get overrepresented"

(Wondolleck & Yaffee, 2000, p. 109). Facilitation supports effective communication, which is essential to collaborative processes as it supports building of trust and therefore social capital, and shows promising support for development of adaptive, enduring institutions (Davies & White, 2012; Isaacs, 1999; Ury, 2007; Wondolleck & Yaffee, 2000). Independent trained facilitators can aid in principled negotiation (including principles such as mutual respect, trust, and understanding) and conflict resolution, as well as provide support in terms of training (e.g. workshops) (Frame et al., 2004).

Funding and resources.

While it is often recognized that collaboration can reduce conflict and in the long run may be a cost saving endeavor (e.g. avoidance of legal costs of court actions), there are significant short term financial and time commitments (Davies and White, 2012; Yaffee & Wondolleck, 2003). This is critical to note with consideration of the decreasing funding and downsizing trend of governments and organizations. Staff time is often limited, as is capital, and these aspects impact the ability to organize, facilitate, and/or participate in collaborative processes. In addition, relationships take concerted effort and time to develop and maintain (Yaffee & Wondolleck, 2003) and costs associated with facilitation services are often significant. Frame, et al. (2004) discussed resource access in the sense of processes "…provid[ing] equal and balanced opportunit[ies] for effective participation for all parties" (p. 69). This suggests that mechanisms to ensure equity of resources to enable equitable participation relate to the effectiveness of collaborative processes. This is a logical approach to addressing potential inequities and abilities to participate for parties with fewer resources, however the decreasing funding and resources among governments make operationalization of this challenging. There are also short term financial implications of training, as "effective collaboration requires

significant interpersonal skills, win-win problem-solving, collaboration learning, thinking "out of the box", and the like" (Yaffee & Wondolleck, 2003, p. 68), as many staff and/or prospective participants do not have these skill sets. Therefore a cost-benefit analysis would be beneficial to consider before undertaking a collaborative direction.

Meeting management.

Wondolleck & Yaffee (2000) emphasize that meeting management is critical to running productive collaborative meetings so that participants feel they have been heard and taken seriously. This involves the details of meetings, such as establishing a regular meeting frequency and duration, and establishing ground rules to guide "…how people would deal with each other" (Wondolleck & Yaffee, 2000, p. 111), ensuring that an agenda guides discussions, and establishing and maintaining deadlines and milestones that are realistic (Frame et al., 2004). Processes that are effectively coordinated and managed provide a predictable forum for discussions and participant input that enables participants to plan attendance appropriately, and respect the time of participants (Frame et al., 2004). This is important with regard to the limited time and resources available to many interested parties, including Skeena interested parties.

Consideration of meeting structure in terms of size is also required as progress is difficult when a group is large, however opportunities to create organizational structures such as technical subcommittees have been demonstrated as an effective way to address size issues by the Anacosta Watershed Committee, and the Clark County Habitat Conservation Plan (Wondolleck & Yaffee, 2000). The subcommittee approach demonstrates nesting of discussion levels (Ostrom, 1990, 2008), which has the benefit of directing technical details to dedicated technical discussions and away from dominating steering committee discussions. Other processes such as the Darby Partnership found that technical subcommittees became ineffective after four years

and altered subcommittee structures to include four issue-based groups (Wondolleck & Yaffee, 2000). This adaptation demonstrates the utility of learning from experiences that can enable process improvements.

Performance measurement, review, and adaptation.

Berkes et al. (2007) suggest that a learn-by-doing approach can be an effective approach to supporting increasingly effective collaborations. It involves the iterative cycle of reflexive assessment, followed up by consideration of practical application of learning from experience with potential subsequent process modifications or adaptations. This approach supports Wondolleck and Yaffee's (2000) recommendations for performance measurement and periodic review and revision, and entails establishing linkages of performance measures to process objectives to assess outcome-oriented progress. Process-related aspects such as meeting logistics and the TOR can also be examined to determine if improvements could be made. From a collaborative relationship/conflict resolution perspective, additional aspects that could be measured include "…better communication, stronger relationships, lower levels of non-productive conflict…" (Wondolleck & Yaffee, 2003, p. 70), etc., although metrics to measure these aspects are challenging to develop as they involve subjective judgements.

In addition, performance measurement and review enable sharing results with collaborative participants as a way to further support common understandings, build relationships, trust and social capital, as well as enable a comprehensive review and discussion of progress. This is commonly done annually when employing a proactive learning-by-doing approach, and allows for learning what worked and didn't work in terms of achieving objectives, and invites group input into whether and what process or performance measures might benefit from adjustments. Additional benefits of this approach are the inclusion of collaborative

participants in process-related improvements and the ability to use this reflexive process as an additional interaction that can enhance social capital.

Scientific information and information-sharing.

Technical processes often involve science-related work and "in a number of cases science has provided a playing field that people could agree to and rely on as a means of making fair choices" (Wondolleck & Yaffee, 2000, p. 134). Credible science-related information was considered a critical aspect of successes experienced during a number of cases examined by Wondolleck and Yaffee (2000). For example, the Darby Partnership utilized science as justification for decision-making (Wondolleck and Yaffee, 2000) and Frame et al. (2004) indicated that processes need to "…incorporate[] high quality information…" (p. 69). The use of science to inform consensus advice was considered one successful aspect of the SWC and while there were some issues around science (as discussed in the next chapter), it drew participants together in a problem-solving process and supported relationship-building (Sigurdson et al., 2008). A caution however, is the notion of differing and conflicting individual participant values and objectives for participation, as there can be resistance to others' perspectives, including knowledge. For example, with the South Florida Water Management District and the Florida Department of Environmental Regulation joint pesticide monitoring project, monitoring results were viewed with skepticism by some participants (Wondolleck & Yaffee, 2000).

To overcome challenges around skepticism and perceptions of bias, independent science advice has often been sought from experts. Wondolleck and Yaffee (2000) noted this occurred often as a way to separate science-related work from decision-making processes, as it was "…less likely to be biased" (p. 135). This approach had the added benefits of reducing the emotional aspect of decision-making as information was at an arms-length from the process,

while it can also reduce decision-related criticisms of bias and/or favoritism (Wondolleck & Yaffee, 2000). As an extension of the importance of obtaining science-related information and other information (e.g. other ways of knowing, economic information, etc.), information sharing has been shown to be important as it can lead to building relationships (Westley et al., 2007), and is also important in the sense of sharing power, as hoarding information has been characterized as a form of power (Pinkerton, 2007). Collaboration provides an opportunity to engage in information-sharing, which can increase mutual understandings of others' interests as well as data, and supports the ability to develop agreements on data analysis and interpretations (i.e. increases intellectual capital) (Frame et al., 2004).

Planning for Collaborative Success

It is clear from this literature review that "collaborative arrangements of a variety of kinds…have been able to build a foundation for more effective resource management…[although]…collaboration is not an end in itself…" (Wondolleck & Yaffee, 2000, p. 45). Collaboration is a process that, with appropriate supporting design, can enable relationship-building and development of social capital, address conflict, and respond to varied interests and concerns. When collaboration has been selected as a path forward, there is a wealth of information available that provides guidance in support of working cooperatively to support collaborative outcomes. And clearly, if NRM collaboration is to be effective, it must be approached carefully and with keen consideration of existing collaborative process design knowledge.

Collaboration Planning Considerations in a Skeena Context

Important to consider with regard to Skeena collaboration, is existing knowledge pertaining to historical Skeena fisheries-related collaborations and the current context of fisheries

management in the watershed, which are presented in the following sections. Collaboration as an option in the Skeena context also involves broad aspects such as the Pacific fisheries management legislative and policy framework, and First Nation governance implications, which must be considered during collaborative planning deliberations, and are further elucidated in the following sections.

Existing historical Skeena watershed collaboration scholarly contributions.

While some research on understanding historical Skeena River watershed collaboration has been done, this work is limited and focussed primarily on the SWC. Further, little focus has been given to examination of collaborative process design elements of these initiatives. Research summarized in this section is organized from least to most recent.

Pinkerton explored the contribution of the SWC to dispute resolution in a paper published in 1996. While this was prior to the conclusion of the process it is useful to review, although it is important to highlight that her conclusions were derived from management-related concerns from a nonexcludability (when limiting resource access is difficult) and subtractability (as resources are harvested there is less left for others) focus. She identified key elements that can support local management regimes' success recognizing that success is more likely when social learning occurs. Similar to Ostrom's work, elements were presented with the notion that the more elements present, there is a greater corresponding likelihood for success. The element relevant to research questions related to logistics and suggested the necessity of membership criteria. Pinkerton also posited a collaboration framework, which is incorporated into earlier sections in this chapter.

The SWC was examined again by Pinkerton in 2009 (b) with the intent to learn from successes and failures in salmon management in terms of the application of principles that

support collaborative partnerships. She did this through the problem-solving lens of four "…persistent problems in salmon management at the watershed level: (1) How can we get enough data/knowledge? (2) How can we know the data we do get is valid and reliable? (3) How can we analyze and interpret the data accurately, taking enough factors into account? (4) How can we implement our analysis in an effective fishing plan and other planning for habitat, enforcement, and other functions?" (p. 2). She found that progress was made when, in 1994, conditions were enabled that supported "…a principled decision-making process that was perceived as a transparent and fair, therefore legitimate" (p. 6). This included principled facilitation with an external professional mediator, that the five participating groups held equal standing, decisions were made by consensus, an MOU institutionalized the commitment on how participating groups would work together, there was commitment by the regulators that they would implement SWC recommendations, the facilitator took over chairing the process, and a clear goal with clear timelines guided the process. These conditions resulted in cooperative problem-solving that led to negotiation of, and consensus on, the 1994 fishing plan (described in the following chapter). Key aspects related to the termination of this process were summarized as: lack of clarity over the role of government inside the process vs. outside the process (i.e. identified the need for more explicit role delineation in MOU); lack of clear communication of science (i.e. identified a need for better information exchange to support common understandings of science); and a limited understanding of communication and the slow, fragile process of building trust (i.e. trust is difficult to build in the face of extreme historical conflict). "The SWC story shows us the need for social learning, the building of human relationships, and visionary leadership which focusses on the long term" (p. 13).

The 2014 paper by Pinkerton et al. provides a useful view of co-management in a recent context from the perspective of the Sustainable Marine Fisheries and Communities Alliance (SMFCA), formed in 2008, which includes "…a coalition of north and central coast First Nations' governments, municipal governments, and commercial fishermen's organizations" (Pinkerton et al., 2014, "Visions, strategies, and actions", para. 2). This paper identified a gap between the planning that the group did towards co-management and the actualization of their planning. Complexity was suggested as an explanation for the gap and several "…substantial barriers to progress…[were identified which included:]…limited resources, lack of trust between the marine commercial fisheries sector and upriver recreational and aboriginal fisheries, loss of capacity in government,… and the continued emphasis on lobbying…" (Pinkerton et al., 2014, "Visions, strategies, and actions", para 7). Particularly interesting in this study was the suggestion that "…especially in relation to access and harvest management functions in the fishery…that the barriers to progress are substantial enough that recourse to lobbying at this point is unavoidable…" (Pinkerton et al., 2014, "Visions, strategies, and actions", para 7).

Current Skeena fisheries management context.

Since the conclusion of the SWI, Skeena River watershed-related fisheries management discussions have occurred in forums both smaller and larger than the watershed scale. On a smaller side of the scale, these include bilateral discussions between DFO and specific groups such as commercial fishery processors, recreational harvesters, and First Nations. On the larger scale, Skeena interest groups generally participate on DFO's Salmon Integrated Harvest Planning Committee (herein referred to as the IHPC), which includes elected members of the recreational sector (three) and commercial sector (four), two Marine Conservation Caucus[i] members, four First Nation members, and one ex-officio Provincial representative. Pertinent to note is a

drawback identified by Jones in 2006 pertaining to First Nation participation in the IHPC: that there is not yet a mechanism or "…underlying First Nation political process…in place to designate representatives in the IHPC process" (p. 55). Therefore, DFO still appoints "…First Nation participants nominated by…"major aboriginal organizations"…" (Jones, 2006, p. 59).

The IHPC mandate is to "…provide formal advice and make recommendations to the Department [DFO] on operational decisions related to salmon harvesting in north and south coastal portions of the Pacific Region and the watersheds that contribute to these fisheries" (DFO, 2005b, para 1). These fora provide avenues to discuss topics such as pre-season planning, development of annual Integrated Fisheries Management Plans (IFMPs), in-season fishery planning advice, and discussion of emerging issues, which includes the Skeena River watershed. There are North Coast and South Coast subcommittees that meet to discuss northern or southern issues respectively, and opportunities for both subcommittees to meet together annually. The IHPC Terms of Reference (TOR) outlines this process's background, purpose, mandate, guiding principles, structure, membership, roles and responsibilities, procedures, funding, a committee charter, and the role of the IHPC facilitator (DFO, 2005b).

The IHPC operates within DFO's annual salmon fishing cycle that involves pre-season planning (e.g. IFMP development), in-season management (e.g. weekly calls held by DFO to engage various groups – i.e. First Nations, harvester and processor representatives, the IHPC Northern Subcommittee, and internal DFO staff), and post-season review (a public DFO forum that reviews the year's activities and harvests, and provides forecasting information that informs the next year's pre-season planning). Each planning phase builds on the previous phase's work, in a cycle of learning and adaptation.

An important element of the annual salmon fishing cycle planning process is the IFMP[ii]. The IFMP is essentially a document that serves as a repository of information that includes fishing plans; it provides fishery management guidance (e.g. harvest rate decision-rules), and captures learnings from the annual adaptive salmon management cycle. The North Coast Salmon IFMP is a document developed annually after post-season review (early December) and before the first commercial fishery commences (usually early June). IFMP development includes a first draft released by DFO that invites feedback by interested parties and undergoes a consultative process designed to inform possible revisions. As part of the consultative process, the IFMP is a topic of discussion at face-to-face IHPC meetings (at subcommittee meetings and at full committee meetings). Once the IFMP is finalized it serves to guide management decisions for the year. The description above demonstrates that the IFMP is both a process and a document. The IFMP process was developed as a mechanism to enable consultation that entails an exchange of information with interested parties (dissemination of information and collection of feedback), while the document ensures that fisheries are managed with transparency and provide certainty around harvest decision-making.

The IFMP is not a legal document, however there are no opportunities to lobby for IFMP changes once the document is finalized. That being said, the Minister may modify the IFMP "for reasons of conservation or for any other valid reasons…in accordance with the powers granted pursuant to the Fisheries Act" (DFO, 2013, "*Purpose*", para. 2).

An important aspect to clarify is that First Nations are invited to participate in the IFMP process however First Nation fishing plans are not discussed. First Nation fishery resource access is protected under section 35 of the *Constitution Act* (1982), which is recognized in DFO's allocation framework (1999) and pertains to statutory obligations set forth in the

Canadian *Constitution Act* (1982). DFO's An Allocation Policy for Pacific Salmon (1999) clearly articulates that First Nation access takes priority over other harvest once conservation needs are addressed. Additional policy information relevant to Skeena fisheries management is outlined in the following section.

Pacific fisheries management policy context.

Pacific fisheries management decisions are made within the context of numerous policies and build on historical decision-making, however the Minister retains the ultimate decision-making authority as set forth in the *Fisheries Act* (1985). Therefore in light of legislated responsibilities and policy considerations, it's important to recognize that collaborative process advice (consensus-based or otherwise) provided to DFO does not represent a final decision. Rather, collaborative process advice is considered during Ministerial decision-making.

Pacific fishery management described thus far has not included specific mention of the public, yet fishery resources are managed with regard for the public interest as well as interest groups previously noted while respecting the governmental mandate of multiple objectives. Building on this, and the recognition that accountability to First Nations, sector constituents, as well as the public are important (Frame et al., 2004), it is important to clarify how the public interest is considered within this research and to clarify the role of government used in the context of this research. Three points are key to reiterate here: the key driver of the SWC and the SWI was conflict resolution among interest groups; Canadian and BC regulatory agencies have clear mandates and responsibilities to the public interest that encompass multiple values (e.g. biological, economic, social, and cultural, etc.); and regulatory agencies were participants with equal standing during both collaborative processes studied. Therefore, this research has been undertaken in the context that regulatory agencies involved in historical Skeena watershed

collaborations participated in the roles of public servants that incorporated multiple values as per their respective mandates, and as such represented multiple public interests (i.e. multiple values as per respective mandates and jurisdictional responsibilities) at these tables.

Informing fishery management decisions are numerous policies, a few of which are salient to note. For example, An Allocation Policy for Pacific Salmon (DFO, 1999) forms the basis for allocation discussions by "…establishing clear priorities for allocation between fishery sectors and within the commercial fishery between gear types…" (p. ii). The Sustainable Fisheries Framework (2009) also provides important guidance that informs annual fishery planning, IFMP development, and IHPC discussions as many fisheries management decisions relate to sustainable resource use. These policies, and others, provide clear guidance for decision-makers, and in many cases, a rationale that supports decisions.

While there are many policies, such as those noted above, that play a significant role in Pacific fisheries management, Canada's Policy for Conservation of Wild Pacific Salmon (herein referred to as the Wild Salmon Policy or the WSP) is indicative of the increasingly complex management of fisheries resources (Walters et al., 2008). The WSP represents five years of consultation intended to draw societal values into decision-making about salmon conservation (DFO, 2005a). It outlines six Strategies intended to support healthy, diverse wild Pacific salmon populations and their associated habitats. The strategies are: 1) Standardized Monitoring of Wild Salmon Monitoring Status, 2) Assessment of Habitat Status, 3) Inclusion of Ecosystem Values and Monitoring, 4) Integrated Strategic Planning (including collaborative management planning), 5) Annual Program Delivery, and 6) Performance Review (DFO, 2005a, p. 8). There has been progress in implementing the WSP's Strategies 1-3, and while some work has been done, there is much remaining work to do to implement of Strategies 4-6 (Gardner, 2009;

Gardner Pinfold, 2011). Historical issues related to collaboration suggests that WSP implementation in the Skeena watershed would benefit from *post hoc* research into learning what worked and didn't work during the SWC and SWI, and why. Research results are presented in the following chapters with the intention to inform WSP implementation in the Skeena.

First Nations: Government-to-government context.

Building on previous discussions related to First Nations, their constitutionally protected rights, and the unique relationship that they share with federal and provincial governments, it is important to highlight collaborative work among British Columbia First Nations that also contributes to fisheries-management governance relationships and discussions.

British Columbia First Nations came together in a forum in 2006 to discuss common fisheries-related issues; the result of which was a BC First Nations Fisheries Action Plan (hereafter referred to as the Plan). The Plan articulates a way forward that recognizes the need for and utility of First Nations and governments working together on fisheries-related issues and of "…meaningfully contribut[ing] and sharing their knowledge, experience, and energy towards achieving the [Plans] goals" (FNLC, 2006, p. 7). The Plan's goals relate to supporting healthy ecosystems and to developing management relationships with federal and provincial governments. Flowing from the Plan's goals are key themes, each of which is associated with Action Items. A key Plan theme is Relationships and Reconciliation. The Relationships and Reconciliation theme is particularly relevant to understand with regard to this research, as this aspect was deeply considered in the development of recommendations on a path forward in the Skeena watershed. The synopsis of this issue highlights the strained relationship between First Nations and Canada regarding the Pacific fishery and the "…need to find better ways of working together to make meaningful progress on issues – at both political and technical levels" (FNLC,

2006, p. 9), while it was also indicative of strained relationships between First Nations and interest groups such as recreational and commercial sectors. A number of existing agreements among First Nations, provincial and federal governments informed this theme and it's Action Items (see Table 1) that are important to highlight, as they provide a clear indication of the willingness of BC First Nations to work with governments cooperatively. These agreements recognize the need for federal and provincial governments to mend relationships and work with First Nations in a governance context, forge a path forward based on new relationships, and engage in proactive dialogue to inform fisheries-related issues. Also informing the Plan's Action Items was recognition of the "…need for improved relations with the commercial, sport and recreational sectors and that further work is required to achieve this" (FNLC, 2006, p. 10). This statement is of particular importance as it is indicative of willingness to work with interest groups outside of a governance context.

The Plan's Relationships and Reconciliation themed Action Items further support the cooperative intent of BC First Nations, four of which are important to note here as they relate to research recommendations: (1) Develop a high-level protocol or Memorandum of Understanding with governments to improve relationships as they relate to the fishery, (2) In the spirit of the New Relationship and Transformative Change Accord, create a consultation and accommodation policy with respect to fisheries and aquatic resources and engage with governments to implement it, (3) Engage with the federal government to ensure that First Nations needs are addressed through Pacific Fisheries Reform, (4) Participate more actively in third party stakeholder meetings and nominate First Nation representatives to advisory boards (FNLC, 2006, p. 11). These action items are important as they demonstrate the intention of BC First Nations to work

Table 1. Agreements excerpt from BC First Nations Fisheries Action Plan, (FNLC, 2006, pp. 9-10)

A First Nations-Federal Crown Political Accord on the Recognition and Implementation of First Nation Governments (May 31, 2005)	Commits the Parties (AFN on behalf of First Nations and Indian and Northern Affairs Canada (INAC) on behalf of the Government of Canada) to work jointly to promote meaningful processes for reconciliation and implementation of section 35 rights to achieve an improved quality of life and to support policy transformation in other areas of common interest.
New Relationship (March 2005)	The Province of British Columbia and First Nations in BC, as represented by the First Nations Leadership Council, agree to: a new government-to-government relationship based on respect, recognition and accommodation of Aboriginal title and rights; reconciliation of Aboriginal and Crown titles and jurisdictions; and to establish processes and institutions for shared decision-making about the land and resources and for revenue and benefit sharing.
A Joint Fisheries Dialogue for British Columbia, Memorandum of Understanding (October 2000)	Signed by the First Nations Summit, British Columbia Aboriginal Fisheries Commission (BCAFC), Native Brotherhood of British Columbia, the Department of Fisheries and Oceans, Indian and Northern Affairs Canada, Human Resource Development Canada, Environment Canada, Parks Canada, and Western Economic Diversification Canada to establish a forum for dialogue among senior representatives of the federal government and First Nations regarding policies relating to fisheries. While there is recognition that the Policy Dialogue Forums and the MOU establish a unique and important forum for dialogue, First Nations have expressed some concern that these processes have not resulted in significant or observable policy change on the ground.

more cooperatively with governments and others, and willingness to engage collaboratively at an advisory level.

Summary

This chapter provides introductions and insights into communication, cooperation, collaboration, collaborative process design, existing Skeena collaboration-related research, policies relevant to the Skeena case, and First Nation considerations as a basis for this research. While this chapter demonstrates that much work has gone into understanding what supports effective collaboration, there is a gap in terms of operational tools that could guide practitioners during evaluation of whether collaboration might be appropriate or inappropriate. Similarly, operational tools that synthesize existing knowledge that might aid practitioners during both collaborative process design and implementation was lacking. This affirms the prior supposition that synthesis would provide practitioners with useful tools to guide determination of whether collaboration might be appropriate, and if deemed appropriate, to provide guidance for robust collaborative process design, implementation, and maintenance.

Presented next are research results, which opens with important historical Skeena contexts, is followed by a history of fisheries management in the Skeena River watershed since the mid-1900s, and concludes with WSP implementation insights.

Chapter 4: The Skeena River Watershed: Fisheries Management History and Context

The next two chapters present the findings of this research. This chapter draws on interviews with historical Skeena collaborators and document review to provide a description of the history of fisheries management that led up to the SWC and SWI. It then goes on to highlight lessons derived from WSP implementation in the Skeena watershed thus far (DFO, 2014b). Following this, Chapter 5 provides results based on interview and survey data that respond directly to the framework of research questions articulated in Chapter 1.

Prior to introducing historical Skeena watershed fisheries management and collaborations, the following section highlights contextual salmon and steelhead information important for understanding historical Skeena fisheries-related collaboration, which is presented as a timeline of events and emphasizes key policy developments from the 1990's through 2015.

Important Skeena Salmon and Steelhead Context

Canadian commercial net fisheries have harvested Skeena salmon and steelhead near the mouth of the Skeena River for more than a century. While this includes seine and gillnet gear types, steelhead catches are historically associated more so with the gillnet fleet (JOT, 2010). These fisheries are considered mixed-stock fisheries as they intercept multiple species (sockeye, pink, coho, chum, chinook, and steelhead). Skeena River fisheries are managed by DFO using stock assessment tools that include test fishing data.

DFO's Tyee test fishery, located in the lower Skeena River, has been used to estimate sockeye escapement since 1956 and a 2010 report by J.O Thomas and Associates Ltd. stated it "…is considered to be the best indicator of timing and abundance for Skeena summer run steelhead returns (Walters et al., 2008)" (p. 4). Steelhead abundance indices were in decline through the 1980s and reached historic lows in the early 1990s, corresponding with the early

stages of forming the SWC. Around this time there were also declines described for wild Upper Skeena River coho stocks, which later became known as the coho crisis (OAG, 1999). The coho crisis resulted in the adoption of stringent management measures to limit impacts to coho, as well as to development of *A New Direction for Canada's Pacific Salmon Fisheries* (DFO, 1998) that supported mandatory selective fishing (OAG, 1999).

Selective fishing practices are linked to the ideas of mixed stocks and weak stocks (Wood, 2001). The commercial net fisheries have historically harvested salmon in mixed stock fisheries, which are fisheries that harvest different stocks and different species. Each species has different life history, biological requirements, and productivity, therefore it is considered desirable to harvest species or stocks with greater productively at a higher rate than those with lower productivity (DFO, 1998). In addition, some salmon stocks within the watershed are considered to be strong stocks, while others are considered to be weak. This can result in some stocks (i.e. weak stocks) being over-harvested whereas others can be considered to be under-harvested (i.e. strong stocks). Selective fishing discussion led to the introduction of management measures that could target specific species and stocks in order to provide fishing opportunities (harvest strong stocks) yet support conservation requirements (protect weaker stocks) (Francino, Lefeaux-Valentine & Fryer, 1996). Management measures included gear modifications, specialized equipment, area and time closures, and avoidance or release of non-target species (Walters et al., 2008). Cumulatively, this gave rise to concerns over the allocation of harvest access opportunities to those who could fish more selectively (DFO, 1998). The abundance and health of steelhead stocks is directly related to management measures that continue to be implemented under the auspices of *A New Direction for Canada's Pacific Salmon Fisheries* (DFO, 1998).

The declining steelhead abundance trend of the 1980s and 1990s, in conjunction with concerns related to possible under-estimation of steelhead catch, led to perceptions that Skeena steelhead were being "…seriously over-exploited…" (JOT, 2010, p.6). DFO fishery managers responded with the introduction and implementation of management measures in the 1990s to commercial net fisheries (Francino et al., 1996), many of which are still in place today. Measures included changes to promote more selective fishing (fishing gear and fishing technique requirements), non-retention and non-possession rules for certain species, on-board revival tanks for non-target species, and changes to fishing areas and times.

To more fully appreciate the complexity of Pacific fisheries management, consider again that steelhead management is the legislated responsibility of the federal government, however the management of freshwater recreational fisheries (including steelhead) has been delegated to the Province of BC (FLNRO, 2015). As such, steelhead are intercepted in federally managed fisheries, yet are under the management jurisdiction of the province. To recognize and address overlapping federal and provincial jurisdictional issues such as this, an agreement between Canada and British Columbia was signed in 1997 to facilitate the working relationship between federal and provincial governments with respect to management of Pacific fisheries issues (Gov. of BC, 1997). A product of the agreement was the Pacific Fisheries Resource Conservation Council, which was comprised of technical experts who provided independent advice to governments and the public. This council has since been disbanded (confidential personal communication, February, 2015). Around this time Tyee steelhead abundance indices experienced increases (through the mid to late 1990's), and indices declined again in the 2000's (JOT, 2010).

Further complicating matters, in 2006 an "…unexpectedly large sockeye run (3 million fish) arrived at the Skeena mouth and the Tyee test fishing indicated a relatively weak steelhead return past the commercial fishery" (Walters et al., 2008, p. 4). DFO was pressured by the commercial sector for harvest opportunities and was also pressured by the recreational sector to keep the commercial fishery closed to avoid possible impacts to steelhead. DFO's "…decision to allow a commercial fishery for 11 consecutive days…[caused an]…intense public debate…" (Walters et al., 2008, p. 4) around Skeena salmon and steelhead management. As a result, DFO and the BC Ministry of Environment jointly sanctioned an independent science review of Skeena River salmon and steelhead management. The outcome was the Report of the Skeena Independent Science Review Panel: A report to the Canadian Department of Fisheries and Oceans and the British Columbia Ministry of the Environment, which is often referred to as the ISRP (cited in this research as Walters et al., 2008). This report was released in May of 2008 in the midst of continued controversy over steelhead abundance and salmon management. It was funded by California's Gordon and Betty Moore Foundation (herein referred to as the GBMF), and governance recommendations from this report informed the SWI. In addition, fluctuating steelhead abundance indices took an upward turn again during 2008 and in 2009, which continued to fuel heated debates regarding the health of steelhead stocks (JOT, 2010).

With overlapping federal and provincial interests and jurisdictional issues in mind, the Province's current perspective is that "recreational fisheries for steelhead are managed for opportunity and expectation, specifically the opportunity to go fishing with the expectation of catching a fish…[which] is fundamentally different from harvest fisheries…" (FLNRO, 2015, p.2). To provide guidance for provincial steelhead management, the Province's Ministry of Forests, Lands and Natural Resource Operations, Fish and Wildlife Branch in Victoria, B.C.

recently released a draft Provincial Framework for Steelhead Management (FLNRO, 2015). The fundamental difference between recreational and commercial fisheries objectives are abundantly clear given the draft proposed strategy to encourage "…reduce[d] steelhead by-catch mortality in commercial salmon fisheries…[and to]…enable maximum or as near to maximum steelhead escapements to locations upstream of salmon fisheries in which steelhead are intercepted" (FLNRO, 2015, p.12). This contrasts with the federal mission which supports strategic outcomes of "…Economically Prosperous Maritime Sectors and Fisheries [and] Sustainable Aquatic Ecosystems…" (DFO, 2015, Our Mission, para. 1) in the sense that harvest opportunities be considered within the context of economic prosperity as well as sustainability. Recognizing that provincial and federal objectives both consider socio-economic aspects of their constituents, the fundamental difference between governmental objectives results in a tension between provincial and federal regulatory agencies. This difference continues to impede collaborative intergovernmental work on steelhead management in BC, although it is promising to note one of the next steps in the Province's draft steelhead management framework is to "…work with federal partners to develop a joint steelhead management objective in federal Integrated Fisheries Management Plans…" (FLNRO, 2015, p.15).

Skeena Fisheries Management Context Preceding the Skeena Watershed Committee

Taking a step back in time with one interview participant to discuss fisheries management prior to the SWC, it was stated that the Skeena River Salmon Management Committee (SRSMC) began during the 1940s as a forum for salmon management, primarily in a commercial harvest context. The SRSMC evolved slowly to include other interests and eventually there was limited participation by commercial representatives, coastal First Nations, and a recreational sector representative. According to this interviewee there was minimal

provincial involvement, and no environmental interests represented as environmentally-focussed groups did not become vocal in the watershed until much later. At this time, this respondent indicated that there was also a fair degree of autonomy surrounding decision-making within DFO's management areas, with minimal national-level DFO involvement.

Issues on the Skeena that led to the formation of the SWC can be found in Pinkerton (2009b) and relate to poor data for both steelhead and smaller salmon stocks, declining coho escapements, commercial bycatch of smaller salmon stocks in mixed stock fisheries, and fear that steelhead conservation by the commercial fleet would result in upriver sport harvest opportunities. One of the primary issues at the time was the health of steelhead stocks, and steelhead impacts by the commercial fishery (particularly gillnet impacts). This conflict escalated among watershed interest groups to include media campaigns (Pinkerton, 2009b) and lobby efforts at local, regional and political levels. These efforts raised the issue to a level that resulted in a public declaration by DFO that "…the steelhead harvest rate in the Area 4 commercial net fisheries…" (DFO, 1993, p. 1) would be reduced by 50% over three years (DFO, 1993, p. 1). The announcement was unexpected, it was vague in terms of implementation, and there is no record of it in a DFO policy context. It left many, including DFO staff, struggling to find ways to operationalize the announcement, which resulted primarily in changes to the commercial fishery. There was a public outcry that came in the aftermath of this announcement that focused largely on economic impacts to the commercial fishing fleet. With many changes affecting the commercial fleet over recent decades (e.g. area-based licencing, single species licences, and fleet reduction efforts (i.e. licence buy-backs)) (Francino et al., 1996), changes to reduce Skeena steelhead interceptions held associated costs that further threatened livelihoods

and the pursuit of fishing as a way of life. Protests were held in Prince Rupert, and public conflict continued to escalate, as did media exposure.

In the meantime, conflict resolution, collaboration, and consensus-based approaches to fisheries management discussions were being explored by DFO as a way to address conflict and respond proactively to their responsibilities. Flowing from this and the interest in balancing steelhead concerns with commercial harvest concerns, a dispute resolution alternative was offered by the department to look at watershed issues such as how to address declining coho stocks and how to reduce steelhead interceptions (OAG, 1999). If watershed interests agreed to work together to develop annual fishing plans that could reduce steelhead interceptions, a collaborative committee would be created to hold these technical discussions. This offer ultimately resulted in the formation of the SWC.

The Skeena Watershed Committee

DFO gained agreement on proceeding with a consensus driven collaborative group that was solidified with a MOU in 1992 that defined the purpose as "…to foster communication and cooperation among the parties in order to conserve, protect, and rebuild the salmonid resources of the Skeena watershed" (SWC, 1992a, p. 3). The SWC was established to bring representatives from aboriginal, commercial, and recreational fishing groups together with provincial and federal governments to develop annual harvest plans with equal standing (NRTEE, 1998; SWC, 1992a). The SWC was founded on seven principles that were institutionalized in an MOU:

1. "Fisheries management problems in the Skeena Watershed require "Made in the North" solutions that accurately reflect resource conservation and the wellbeing of individual residents and communities;

2. The Committee will encourage high environmental ethics and integrated resource management as the primary means to achieve sustainable fisheries;
3. The committee will recognize and respect the constitutional rights of aboriginal people;
4. The agreement is not intended to be binding agreement, or to reflect, establish, or deny any rights, title, or interests, and is subject to laws of general application;
5. The Committee will strive to preserve, and where desirable, enhance community access to the resource and economic base and employment that can be derived from cultural, commercial, recreational, management and rehabilitation activities;
6. The Committee will ensure that the concepts of resource ethics, environmentally sustainable development, and integrated management are fostered in the research, development, and management of fisheries for the long term; and
7. The Committee will strive to devise solutions to conservation problems which minimize any disruptions of long-standing fisheries." (SWC, 1992a, p. 3)

While this process was initiated by the DFO, representatives from the province and the federal government initially jointly chaired the process. In addition to harvest planning, topics discussed at the SWC table included stock assessment, watershed restoration, and habitat protection (NRTEE, 1998). SWC members "…were authorized to speak on behalf of their constituents or take any issue back to their constituents for ratification before a decision was made or action taken" (Walters et al., 2008, p. 86). Reflecting back on the fourth MOU principle above, it's important to note that the MOU provided distinct support for First Nation participation as it recognized their constitutionally protected rights and was explicit that First Nation participation was without prejudice to their aboriginal rights. First Nations were

represented at the SWC table by Skeena Fisheries Commission signatories who ratified the MOU.

In early 1993, the commercial sector took a step back from the SWC in resistance to discussion of fishing plans at the table. Introduced later in 1993, the Green Plan was a four year federal funding initiative that involved 14 million dollars earmarked "…to address fisheries management concerns in the watershed" (ARA, 1994, *forward*), which included the Skeena-Kitimat Sustainable Fisheries Program (DFO, 1995). Green Plan funding supported projects including science-related work, a watershed socio-economic profile, and many other projects, including support for the SWC. From the time that the commercial sector pulled back from the committee in 1993, the SWC made little collaborative progress "…until 1994, when the Department of Fisheries and Oceans (DFO) threatened to impose season and area closures if the Committee did not come up with a plan of its own" (NRTEE, 1998, p. 59). This coincided with the hiring of an independent SWC facilitator using Green Plan funds. This also involved a promise by DFO to agree to less than a 50% Skeena-bound steelhead interception reduction if the SWC could come to consensus on a fishing plan (Pinkerton & Weinstein, 1995). With the services of a facilitator guiding the process, incentives of potential funding access, and the potential of a commercial harvest plan compromise that might reduce impacts to the commercial sector, the commercial sector re-engaged in the process.

The Committee then came to consensus on harvest rates for three Skeena River stocks in May 1994 that would apply for a three year period (SWC, 1992b; SWC, 1994). "In the 1994 season, the commercial sector was willing to "give to get": it could see the larger benefits forthcoming from cooperation, and saw that it also gained the power to influence management by cooperating in the process" (Pinkerton, 2009b). A fishing plan was negotiated, and DFO

agreed to implement what the SWC had brought forward (Jones, 2006; Pinkerton & Weinstein, 1995). Problems began in 1995 when there were misunderstandings of how the fishing plan worked (the plan entailed a fixed harvest rate – which means it didn't fluctuate when run size increased), which coincided with a DFO decision to reallocate funds promised to the SWC to other purposes (Pinkerton, 2009b). These aspects, combined with large sockeye returns in 1995 and 1996, resulted in protest and outrage. Following on the heels of this, the commercial sector withdrew in early 1997 "…because they believed the consultative process being used to manage the fishery worked against their financial interests" (NRTEE, 1998, p. 59). The withdrawal of this sector from discussions terminated the SWC's Memorandum of Understanding (SWC, 1992a).

Post-Skeena Watershed Committee and Pre-Skeena Watershed Initiative

A 2006 report to the Pacific Fisheries Resource Conservation Council by Garner and Parfitt, includes a discussion of First Nations in British Columbia in the context of "…various challenges concerning salmon fisheries and conservation challenges" (p. 1) and included a profile of the Skeena. The profile included a brief mention of the SWC and went on to describe DFO's relationship with the Skeena Fisheries Commission (SFC), which is an aggregate First Nations initiative funded by DFO under their Aboriginal Fisheries Strategy program. According to Gottesfeld, Barnes & Soto (2009), "the SFC was formed in 1985 through a [MOU] between the watershed's five First Nations: Tsimshian, Gitxsan, Gitanyow, Wet'suwet'en, and Lake Babine" (p. 1). The SWC was only briefly mentioned in Garner and Parfitt's 2006 report in the sense that it indicated that it "…came into being in 1996/97…[and that it was a]…multi-sectoral committee that lasted only about a year before representatives from the commercial fishing sector pulled out" (p. 24). Aside from this brevity, there is no contribution to understanding of

historical Skeena collaboration. There is also an error as to the dates for the SWC's operation. The SWC's operation was not restricted to 1996 and 1997 as it was begun in 1992 with a MOU, and while it concluded in 1997, it lasted for substantially longer than a year (NRTEE, 1998). This error caused a more critical review of this report, and further on in the Skeena Profile a naming inconsistency became apparent. During discussion of the SFC, one sentence refers to "…representatives on the Skeena Watershed Commission…" (Garner and Parfitt, 2006, p. 24) and then goes on to further discuss the SFC in terms of contributors to success. However during this research no organization was identified that went by the name Skeena Watershed Commission, therefore the assumption is that this was intended to read Skeena Fisheries Commission, however it remains unclear. The three contributors to success identified included: (1) the technical rather than political nature of the initial focus, (2) capacity building that included increased "…trust and cooperation between local communities and DFO…[(3)] and compared to the Fraser River, there are fewer First Nations in the watershed thus…making the goal of a more co-operatively managed fisheries regime more readily achievable" (Garner & Parfitt, 2006, p. 24). Contributors to success identified are consistent with literature presented earlier (e.g. Axelrod, 1984; Ostrom, 1990; Wondolleck & Yaffee, 2000) although errors detected in this work diminished the value of this report. It is useful to note, however, that this report concluded that cooperation among First Nations and interests groups (including recreational and commercial sectors) is necessary for reaching conservation management objectives, which is also consistent with the conflict resolution approach to addressing competing interests presented in Chapter 3.

A debriefing on the SWC occurred in February 2008, prior to the formation of the SWI and resulted in the development of a summary document (Sigurdson, et al., 2008) that

summarized perspectives of SWC participants regarding successes and suggestions for process improvement. Successes identified included: that the SWC provided a forum for interactions; dialogue led to development of trust; funding was critical support for the process; the focal area for the process was clearly defined; relationships and networks were built; conflict was reduced; and common understandings were increased (Sigurdson et al., 2008). The document also suggested that science-related work drew participants together in the process by problem-solving. However, science was later questioned as to whether it addressed practical questions (vs. academic) and whether it could have been manipulated for policy reasons. It was also noted that local knowledge was not linked with scientific knowledge. Suggestions in this document indicated that for improved effectiveness there was a need for increased process flexibility (e.g. to enable the process to respond to in-season information), there was an appetite for possible inclusion of broader interested parties/groups, and interest in more effective use of science. The report also identified the need for: conflict resolution mechanisms, measures to prevent lobbying, and a secretariat that could deal with change and emerging issues. This summary concluded with the suggestion of ten principles that might inform similar future initiatives, which are illustrated in Figure 3.

These principles clearly relate to existing academic knowledge in terms of the importance of respectful interactions, inclusive representation, clear goals, clear roles and responsibilities, recognition and acceptance of varied interests, and equitable participation that includes financial capacity for collaborative efforts. Principles also reinforce the need for reflection and adaptation at regular intervals, a clear understanding of disagreement and options for conflict resolution, the importance of scientific information, the need for multi-faceted process objectives, and of the importance of keeping an open mind to working with others to establish relationships that might

serve the interests of all parties. These points echo the literature focussed on collaborative processes, and they are indicative of the recognition of their importance in a Skeena context. Many of these aspects are explored throughout the results, discussion, and conclusions of this dissertation.

Figure 3. Principles identified during the SWC debriefing session (Sigurdson et al., 2008, p.6)

Can principles be identified from this experience to guide similar future initiatives within the Skeena and others that might emerge elsewhere?

1) All participants in a process must have respect for each other, for the fish and for the process, acknowledging each other's right to participate, and a commitment to the process over the long term.
2) Participation should be broadly based, inclusive of all interests and values that are within or connected to the people and communities of the Skeena Watershed, with the opportunity for different interests to be involved in different ways at different times
3) Terms of reference should clearly set out the purpose for the process, and roles, responsibilities and procedures of the participants within the process.
4) Each of the participants brings to the table their own (and respects those of the other participants) specific rights, interests and responsibilities, and with respect to participating governments and agencies, their authority-based mandates for the purpose of trying to reach consensus on outcomes that will speak more powerfully as one, not many, voices.
5) The participants need to be, and be seen to be, equal owners of the process, and that requires the ability to participate in it fully with a full range of capacities (e.g., from administrative to technical, communication to engagement, mentoring and leadership development) with the support of an appropriate level of funding and resources.
6) Each of the participating sectors (i.e., communities of interest) must have the capacity to engage internally within the groups and organizations that are part of it. Within governments and agencies, senior management must be solidly connected to the process, and the roles and responsibilities of the representatives within it.
7) The process needs to be agile enough that it can deal with changing circumstances and issues, and the differences that will inevitably arise. This may include the need for some parties" to step aside" on some issues, to adapt and adjust through reviews on some regular and explicit basis, and proactive strategies to try to get out in front of differences that have the potential to harden into disputes. When disputes do arise, there need to be different ways to respond to them, including the possibility of 'agreeing to disagree' without ending the process.
8) The process must be based on science but the science must be expressed in ways that people can understand, relate to, and use, including the ability to communicate messages out to the wider public.
9) The process must be built around both fish and people, and that requires that both conservation and socio-economic factors be considered, and that risks and uncertainties are recognized as realities.
10) Each of the participants enter the process with a view to better understand each other's interests and that the best way to advance and protect them is by building long-term, effective working relationships where each party sees its interests best served by assisting the other participants to do the same with respect to their interests.

The Skeena Watershed Initiative

Conflict and controversy surrounding Skeena River watershed fisheries management continued after the conclusion of the SWC, and escalated with the unexpectedly large sockeye return of 2006 (Walters et al., 2008). In the wake of this controversy and the release of the ISRP in 2008, many interviewees indicated that the SWI was formed later that year by a coalition of interested parties within the watershed. This occurred with the support of the GBMF, to explore how the WSP might be implemented in the watershed.

An important distinction between the SWC and SWI processes is summed up well by one interviewee: "it's really important to know that [the SWC] was a very specific process…other species were not discussed or modelled – it wasn't made to deal with other species. This committee was about steelhead harvest reduction, which is vastly different than the SWI", which was formed based on interests related to WSP implementation and consideration of multiple species. These differences brought additional complexities such as weaker stocks into SWI discussions.

The SWI operated from 2008-2011 and included commercial, recreational, non-governmental organizations, First Nations, federal and provincial government representation (DFO, 2005a; SWI, n.d.a). Several interviewees noted that the SWI began with a Skeena Wild Conservation Trust representative as the chair, although this representative was also a SWI participant and a few interviewees suggested that it became difficult to sustain dual roles of chairing and representing a conservation perspective. Interview data and document review demonstrated that the SWI was later chaired by Pacific Salmon Foundation (PSF) representatives who also took on the role of SWI Secretariat. This role included aspects such as meeting planning and coordination, and administrative support. Meetings were mediated by independent

contractors, and substantial funding for establishing the process and conducting technical work was provided by the GBMF. With many new policies and implications such as court decisions changing the climate of fisheries management since the SWC, numerous interviewees noted that the SWI operated in a much more complex policy framework than the SWC and a few went on to suggest that this aspect attracted an array of international and political interest. Responding to this complexity a SWI Strategic Planning Committee, Technical Working Group, Stock Assessment Committee, and Habitat Subcommittee were created.

The Strategic Planning Committee (SPC) was "…comprised of representatives from commercial, recreational and environmental sectors, First Nations, and federal and provincial regulators" (SWI, n.d. c). The SPC's tasks included: identification and prioritization of objectives, exploration of management options, and provision of advice to regulatory agencies based on Technical Advisory Group (TAG) input (SWI, n.d.c). TAG members were selected by the SPC based on their areas of expertise (SWI, 2011). Documents indicate that the TAG identified technical information, developed work plans, identified working groups and members, and provided guidance to working groups and contractors (SWI, 2011). The TAG also involved a Habitat Subcommittee who reported to an overarching Stock Assessment Committee (SWI, n.d.d).

The SWI process began without a clearly defined problem or issue, and while objective development was discussed early on during the SWI, process participants never came to agreement on overarching objectives. After the PSF took on the role as the secretariat, technical objectives were developed that related primarily to moving towards WSP implementation through science-related work. As such, the SWI "…provided a forum for gathering information,

identifying gaps, and discussing how salmon/steelhead and their habitat might be managed in the context of the Wild Salmon Policy" (SWI, n.d.a, para 3).

In addition to governance and technical committees the SWI held two public meetings, called congress meetings, with the purpose "…to inform and canvas the broader Skeena community" (SWI, n.d.e). It is interesting to note that these congress meetings were selective invitational meetings. In these meetings, participants shared scientific knowledge, provided updates on SWI projects and recommendations, and provided updates on the implementation status of various SWI initiatives (SWI, n.d.e). The SWI was suspended in 2011 after non-governmental organization representatives withdrew from the process. Their withdrawal was primarily related to lack of progress and behavioural issues of some participants that destabilized interpersonal dynamics. Aspects that contributed to the demise of the SWI are further articulated in research results reported in Chapter 5. At the time there was interest in reconvening the SWI at a future point, although this has not occurred.

Wild Salmon Policy Review in the Skeena River Watershed

A source obtained from DFO archives points to key learning from WSP Strategy Four pilot projects, of which the Skeena was one. This source identified seven pre-conditions necessary for the promotion of successful outcomes of the WSP's Strategy Four integrated approach to management (DFO, 2014b). Identified pre-conditions that promote success included:

- Strong, visionary and optimistic leadership by DFO lead;
- Social license to operate including committed stakeholders and First Nations with one or more visionary First Nation and stakeholder leads;
- Sufficient science data available;

- Availability of multiple funding sources (internal and external);
- Adequate internal DFO capacity to move the work forward; and
- Existing groups through which consultation and engagement can occur (e.g., IHPC, SCC, etc.)" (DFO, 2014b, p. 1)

In addition, best practices for management were also identified, some of which are relevant to collaborative process design, and are contained in Table 2 below. Aspects of this document excluded from this dissertation related to WSP implementation beyond the scope of this study, for example, evergreen plans and communication with senior management. While this document was a draft, and perhaps never finalized, it provides useful context that relates to collaborative planning, particularly since many pre-conditions and best practices identified echo literature noted in Chapter 3, such as representation and TOR best practices. Table 2 clearly reinforces the importance of early and ongoing communication, inclusive representation, clear objectives and accountabilities, the utility of nested enterprises, and the importance of effective facilitation. The resonance of these best practices with existing collaborative NRM knowledge is suggestive that experiences within both the SWC and SWI may have implications broader in scope than the Skeena watershed.

Table 2. DFO analysis of WSP Pilot Programs: Excerpt of Best Practices for Management (DFO, 2014b, pp. 1-2)

Best Practice	**Description**
Ongoing social licence	Efforts focussed on securing First Nation and stakeholder involvement early/up front, as well as on an ongoing basis, for the duration of the work, will result in a higher likelihood of achieving success.
First Nation representation	It is important to ensure representation from all major areas having a stake. There are, at times, opportunities to explore with First Nations creative options for Tier 2-3 representation where consultation burn-out is a concern and implementation of a mutually-agreeable [solutions] has been shown to increase efficiency and effectiveness.
General representation	Good representation is necessary for successful processes, and it is important to ensure that decision-makers are at the table or that those at the table have time to go to constituents for input. This is part of good governance.
Clear terms of reference	The objectives, deliverables and roles and responsibilities need to be very clear from the outset as this will reduce confusion about what those involved are setting out to achieve and what role each will assume.
Structure the work	A Steering Committee and Technical Working Group approach generally works best and already established groups may be able to take on the work as opposed to establishing new groups. (i.e. IHPC, SCC)
Facilitation/Mediation	It is helpful to recognize where more expert facilitation or mediation is needed and obtain this by either going external, by getting the training (offered by DFO Consultation Secretariat and others) or seeking an internal DFO trained facilitator or mediator.

Historical Skeena Background and Context: A Foundation for Understanding Research Outcomes

Drawn from data gathered for this research, this chapter has provided an introduction and summary of important fisheries management concepts and historical Skeena-related context that includes historical Skeena River watershed fisheries management and collaboration, as well as more current contextual understandings such as WSP implementation. Information provided in this chapter provides a foundation for learning from historical Skeena fisheries-related conflict, and as such, is an important preface to research results pertaining to collaboration challenges, successes, impacts, and key issues related to collaborative challenges, which are presented in the following chapter.

Chapter 5: Interview and Survey Results

This chapter begins with presentation of themes that emerged during NVivo analysis of qualitative data and then reports quantitative survey data analysis results. Results are reported in a conceptual framework that reflects research questions that begins with collaboration successes, follows with collaborative challenges, then identifies key issues that contributed to collaborative challenges during the SWC and SWI, and concludes with survey results that indicate the relative level of agreement of interview participants with preliminary research findings. Throughout collaborative success themes there was a strong emphasis on communications, while collaborative challenges themes generally pointed to collaborative process design deficiencies. For example, one challenge identified was that behavioural issues impacted interactions and collaboration, which was exacerbated by the lack of a clear and enforced accountability framework such as a TOR during the SWI. Research results presented in this chapter are discussed in Chapter 6.

Interview Results

Topics presented in this section arose from NVivo analysis of interview data and were supplemented by document review and participant observations. Themes articulated in this chapter are presented cumulatively with regard to topics rather than discussing the SWC and SWI individually because cumulative historical learning was a goal of this research. This approach supported the anonymity of interviewees and reflects a conflict resolution intention, while it also enabled candid discussion. Themes that emerged through analysis are organized in alignment with the order of my research questions, which includes categories of: collaborative successes; collaborative challenges; and key issues related to collaboration challenges. Impacts of collaboration challenges are reported throughout this chapter.

To provide structure to the review of successes, challenges, and key issues identified in this chapter, each section heading contains a bulleted list that serves as an introduction. This provides visual guidance for the reader due to the complex and lengthy reporting in this chapter.

Collaborative Successes

This section identifies key themes related to SWC and/or SWI collaborative successes. Themes include:

- Interpersonal communication and relationship-building
- Facilitation and interest-based negotiation
- Proactive engagement
- Clear objectives
- Political support as lobby prevention
- Funding
- Implementation: Practical outcomes of collaborative successes

Each topic is discussed in an order that enabled topics to build upon each other and are not prioritized. Common to these themes is communication. For example, communication: directly supports effective interpersonal skills and subsequent relationship-building, is supported by facilitation and interest-based negotiation as this allows participant interests to be heard and discussed, contributes to development of clear objectives through collaboration or expression of interests to decision-makers, and supports clarity and commitment of political support to prevent lobby efforts that might circumvent collaboration.

Lobbying in the context of this research is considered to be when collaborative process participants sought "…to influence ([e.g.] a politician or public official) on an issue" outside of the collaborative forum (Lobby, n.d.). For example, it was considered lobbying when SWC and

SWI participants sought to influence, or lobby, others in the effort to meet their interests, rather than to engage collaboratively with others at the SWI table to meet mutual interests. This latter aspect is why lobbying is viewed in this dissertation as detrimental to collaboration, as interview data analysis and documents reviewed demonstrated that lobby efforts are non-collaborative, and non-collaborative lobbying actions served to undermine the willingness of other Skeena participants to collaborate. This interpretation of lobbying is supported by Axelrod (1984) and Wondolleck and Yaffee's (2000) work that suggests that willingness is an essential to support cooperation, collaboration, and arrival at compromising solutions.

In addition to themes *directly* related to communication, themes emerged that were *indirectly* related to communication, which included: funding, as funding enables participation and subsequent communication; and practical outcomes, which were linked to the ability of collaborative participants to communicate effectively thereby enabling collaborative agreement development.

Interpersonal communication and relationship-building.

Early in the SWC process, a workshop-style session provided information on working cooperatively, while it also served as a training session that focussed on possible approaches to problem-solving. Some interviewees suggested that this provided knowledge about how to support a safe place to hold conversations that might address Skeena fisheries management issues. This was reinforced with operating principles entrenched in the MOU (DFO, 1992) and guiding principles supporting consensus (RTEEC, 1993). Other interviewees suggested that these guiding principles aided constructive dialogue in the sense that they supported participants in coming together, getting to know one another, and exchanging information.

Many interviewees noted that conversations during the SWC were both formal (e.g. presentations) and informal (e.g. discussions outside of rooms, over coffee, etc.). Some participants developed friendships despite their differences. The SWC eventually overcame frictions among participants to develop consensus on a fishing plan, although it was a slow, difficult process. Many meetings were held in Prince Rupert, and these face-to-face meetings were reported by some interviewees as enabling a measure of understanding, credibility, and/or trust among participants. Essentially, the in-person meetings were reported by many to have enabled interpersonal communications that built relationships – some of which continue to this day. Analysis suggests that this de-escalated conflict and enabled people to problem-solve together (Westley et al., 2007; Wondolleck & Yaffee, 2000). Prior to the SWC, there had been limited communication among interest groups, and there were deep relationship fractures among various parties. The SWC provided an opportunity for people to share and be exposed to other people's positions, their interests and ideas (Berkes et al., 2007). Over the long term, these aspects contributed to development of common understandings of technical information, identification of gaps, and focussed problem-solving discussions around addressing the SWC objective.

The SWI was initiated after holding a SWC "debriefing session" with previous process participants. There are mixed reviews on the effectiveness of this meeting among interviewees, as conflict had heightened, and relationships had become strained since the conclusion of the SWC. The relationship-building aspect of this debriefing session was highlighted in interview data as important for those few who had not participated in the SWC, however it was repetitive and frustrating to some interview participants who had participated in the SWC. Similar to the SWC, many interviewees noted that during the SWI formal and informal discussions,

information sharing and face-to-face meetings occurred, although conflict resulting from challenges and issues discussed later in this chapter reduced the impact of beneficial aspects of collaboration. Despite challenges, some respondents reported that relationship-building contributed to the ability of participants to move beyond historical animosity and discuss issues, increased understanding of other's positions and interests for some, and humanized issues, which is supported by existing knowledge (e.g. Berkes et al., 2007; Wondolleck & Yaffee, 2000). This process involved information exchange which could be adversarial and divisive but a few interviewees saw this as ultimately positive because it supported the learning process. Over all, the SWI was perceived by some interviewees to have somewhat improved relationships, while many others thought that the discord within the process ultimately had a negative impact on watershed relationships.

Facilitation and interest-based negotiation.

Facilitated interest-based negotiations were pivotal in reaching consensus on a 3-year fishing plan in 1994. Interest-based negotiation was introduced in a workshop style event. This laid a common framework of understanding for prospective process participants (Frame et al., 2004; Berkes et al., 2007). This foundation according to some interviewees, in conjunction with facilitation during the SWC process, enabled SWC participants to hold conversations with respectful behaviour and more active listening, that enabled increased understanding of other's interests, similar to aspects described by Berkes et al. (2007) and Ury (2007). For example, according to some interviewees, in 1994 fishermen needed 16 weeks of employment to claim Employment Insurance (EI). However, during the SWC fishing plan negotiations a sockeye directed gillnet fishing opportunity was identified, yet the plan left fishermen needing 4 more weeks of work if they were to be eligible for EI. Interest based discussions led to understanding

how many fishing weeks commercial fishermen needed to be eligible to apply for EI. So two, two-week fishing opportunities were negotiated in order to support fishermen's eligibility. A two-week chinook-directed fishery was planned for the beginning of the fishing season, and a two-week coho-directed fishery was planned for the end of the season. This approach supported a reduction in Skeena-bound steelhead interception (the SWC objective), but also supported fishermen by planning for opportunities that would help them meet EI eligibility criteria. Therefore this outcome responded to both the SWC's conservation-oriented objective as well as the commercial sector's economic objectives in a creative way. The facilitated negotiation process was noted by these interviewees as important to developing consensus on the fishing plan as it enabled communication (between individuals and as a group), diffused conflict, enabled a better understanding of the complexities of developing a fishing plan, and exposed participants to different perspectives and interests within the watershed.

The agreement on a fishing plan recognized issues on a watershed scale, rather than on an individual interest basis. Negotiation was a key aspect of balancing varied interests to develop consensus on a fishing plan for three years and supported local economics in terms of livelihoods (including fishermen, shore-based plants/canneries, fishing equipment supply companies, etc.). In addition, it supported fishermen in pursuing a livelihood that, for many, was, and continues to be, a way of life. Impacts on Ways of Life and Economic Impacts is a section presented later within the Challenges section that expands on these concepts.

Proactive engagement.

A beneficial aspect (Wondolleck & Yaffee, 2000) of both processes relates to the 'front-end' work that went into pre-meeting bilateral discussions and meeting planning/preparation that was emphasized by several interviewees with respect to both the SWC and SWI. Documents and

interview data showed that significant meeting preparation efforts were undertaken during the SWC to engage at a bilateral level and to plan meetings in the interest of supporting improved collaborative problem-solving. Extensive meeting planning and preparation was also shown in documents reviewed to have been conducted by the PSF in their role of secretariat during the SWI, and was affirmed by a few interviewees. Many interviewees noted that during both the SWC and SWI, many (but not all) participants engaged in bilateral conversations with facilitators to more clearly articulate/understand interests and issues and to address conflict outside of meetings. This essentially provided interest-based negotiation learning opportunities (Frame et al., 2004) that increased the capacity of participants to more effectively engage collaboratively (Wondolleck & Yaffee, 2000). Together, these activities appeared to have contributed to the productivity of meetings as reviewed documents and several interviewees suggested that they supported participants in having clear expectations and access to briefing materials that could guide discussions. Pre-meeting work also helped to clarify issues, informed potential paths forward, and was a proactive way to address conflict *a priori*.

Clear objectives.

Interview data as well as document review demonstrated that the SWC was supported by a clear objective (reduce Skeena-bound steelhead interceptions by 50%). The clear objective provided a focal point – a problem to solve (Barber & Taylor, 1990; Lachapelle et al., 2003). Many interviewees noted that having a clear objective served to focus discussions, facilitated technical work, and contributed to development of a three year fishing plan.

Review of SWI documents revealed that while the objective of the SWI was not clear initially, the SWI eventually made progress towards a strategic technically focussed work plan during the latter part of the process. During these latter times, some interviewees felt that the

functionality of the group increased as discussions shifted from larger more substantive policy-related issues, to technical project-related work.

Political support as lobby prevention.

Interview data revealed that attempts by SWC participants to influence DFO officials and politicians, which would have circumvented collaboration, were unsuccessful initially as clear political support redirected Skeena lobby efforts back to the SWC table. This made it clear that the SWC was to be the only forum for Skeena fishing plan discussions and consideration of interests in the plan's development. This encouraged attendance by providing an incentive to participate (Frame et al., 2004; Wondolleck & Yaffee, 2000) to interested groups in the watershed. This approach initially kept both politics and lobbying from influencing the SWC, as attempts to influence DFO decision-making were unsuccessful. Later, however, some interviewees suggested that an election impacted political support for the SWC (as reported in the Collaborative Challenges section) and at that time lobby efforts were not re-directed to the SWC table, which enabled certain participants to meet their interests outside of the SWC process and led to the dissolution of the SWC.

Funding.

There was funding in place for both the SWC and the SWI, although the source of funding was markedly different. Funding for the SWC involved Canadian federal and provincial government funding under the Green Plan, whereas the bulk of SWI funding was provided by the GBMF, an American foundation that supports environmental conservation and other interests. The availability of funding to support collaborative processes is important (Davies & White, 2012; Yaffee & Wondolleck, 2003) as both Skeena collaborative processes were time-consuming

and expensive according to many interviewees (e.g. facilitation costs were high for both processes).

Document review revealed that Green Plan funds were distributed by governments through a technical committee. Work undertaken as part of the Green Plan and SWC included research on steelhead conservation and the development of a research program, which a few interviewees suggested supported buy-in of the work itself and of the credibility of research results (although there are mixed interviewee views on this latter point). The ending of Green Plan funding later on during the SWC was a contributing factor for the ending of this process, as interviewees suggested that the loss of funding was linked to the withdrawal of the commercial sector.

GBMF funds were distributed through the PSF in support of the SWI. Funding resources provided support for facilitation services, technical work that led to increased knowledge of the Skeena, as well as increased science-related and knowledge capacities of participants. A few interviewees felt that the non-governmental source of funding, and the channeling of the funds through a non-governmental organization (PSF) was positive as the money wasn't tied to a regulator and their associated mandate. Other interviewees raised questions related to the motivation of the funder and of the PSF however, this perception and others related to funding are described in the Collaborative Challenges section.

Implementation: The practical outcomes of collaborative successes.

Key practical outcomes of SWC and SWI collaborative successes, as suggested by many interviewees, pertained to science-related work and access to science-related information, annual fishing plans, workshops, and continued engagement. These illustrate the practical utility that can result from collaborative endeavors (Wondolleck & Yaffee, 2000).

Science-related work.

Document review demonstrated that science-related work provided a common foundation for discussions and enabled technical relationships to evolve. A prime example was the collaborative work between DFO and the province undertaken during the SWC that included assessment and modeling projects. The province and DFO came to agreement on a model that was used during the SWC to evaluate various harvest scenarios and ultimately led to agreement on a fishing plan. The use of the model for scenario development was shown during some interviews to be important for the additional reasons that this process enabled complex discussion to occur among SWC participants. This brought a common language (Berkes et al., 2007) to discussions, as participants discussed the model until everyone understood the implications of various fishing scenarios. This communication process appeared to have contributed to relationships, trust-building, and development of social capital (Armitage et al., 2007; Sigurdson et al., 2008; Westley et al., 2007), which carried over into discussions that came after the SWC concluded.

An additional point to make here, relates to a fishing plan nuance described by some as a contributing factor to the demise of the SWC. There have been assertions that at one time, DFO tried to add the Nass River to the Skeena management model, although interview data from a well-respected DFO science expert noted that the expansion of the model for Area 4 (the Skeena River) included *only* interception of *Skeena-bound steelhead* that occurred in Area 3 (generally known as waters within the vicinity of the mouth of the Nass River). This discrepancy suggests there was a lack of understanding and/or poor communication regarding the proposed model change.

Documents illustrated that the SWI brought about additional science work that was organized by a technical committee (the TAG, introduced in Chapter 4); proposals were reviewed, debated and prioritized and funding went towards research that focussed on key information gaps (e.g. chinook genetic sampling) and WSP implementation (e.g. benchmark and habitat status assessment work). Work was done by a number of groups/organizations and information was shared. Technical information related to the SWI, including scientific reports and habitat mapping, is shared publically online at http://skeenawatershedinitiative.com/library. This sharing of information served as a basis for discussions and moving forward with common understandings (Berkes et al., 2007). Longer-term science-related work begun during the SWI continues under the auspices of the PSF with continued funding support from the GBMF (Katrina Connors, personal communication, August 26, 2015). Interesting to note is the perspective of one interviewee, who felt that technical work was useful but was not part of the SWI process, as they considered the SWI process (Steering Committee) and technical (TAG) aspects as distinct. While this was the only perspective expressed in this vein during interviews, this perspective reflects the SWI's shift in focus from broader WSP implementation to technical project work that was identified by a number of interviewees.

SWC fishing plan.

Most recognized by interviewees within the watershed as a successful outcome of the SWC was the 1994 fishing plan consensus agreement. This plan built on science-related SWC work and modeling noted above and involved coordination and compromise among the SWC participants. The agreement resulted in a fishing plan that targeted a 42% steelhead interception reduction, rather than a 50% reduction (SWC, 1992b). This compromise demonstrated that

groups with divergent views could work together to find creative solutions (Westley et al., 2007; Wondolleck and Yaffee, 2000).

SWC workshops.

Document review demonstrated that multiple workshops were held as part of the SWC, including one on enhancement and habitat restoration and one on selective fishing (SWC, 1995). With "the purpose of these workshops [being] to provide an open forum for the dissemination of relevant information and discussion of the issues" (DFO, 1995, p. 1). Workshops such as these have been shown to bring participants, including governments and user groups, to a common level of understanding and provide a basis for ensuing discussions (Berkes et al., 2007).

Continued engagement.

Documents reviewed clearly showed that weekly calls were part of the SWC and while, according to some interviewees these calls have taken various forms over the years, personal experience reveals that weekly in-season calls continue to be held with interested Skeena parties. Multiple conference call opportunities are offered to groups that include: the Salmon Integrated Harvest Planning Committee, First Nations, local processors and Area A & C Harvest Committees, and internal DFO staff. In my experience, these calls have served as a forum for updates, information exchange, and discussion of in-season salmon management. As such, weekly calls are seen to support dialogue and subsequent development of common understandings (Berkes et al., 2007).

Collaborative Challenges

In alignment with the preceding section on collaborative successes, topics are organized in a way that enables them to build upon previous topics. Topics include:

- Behavioral issues and implications

- Facilitation
- Process structure deficiencies
- Diverse interests, conflict and lack of dispute resolution
- Limited participant resources
- Funding implications
- Lacking incentives
- Lack of leadership
- Unclear objectives
- Representation-related issues
- Policy
- Impacts on ways of life and economic impacts
- Lobbying
- Knowledge integration

Many of these topics relate to the long-standing historical conflict that has haunted the Skeena watershed, process design deficiencies, and external factors. For example, long-standing conflict, the impacts of changes to ways of life, and associated economic impacts in the Skeena watershed are key factors that influenced behaviour and interpersonal interactions. Collaborative process design deficiencies include themes such as: lack of conflict resolution, limited participant resources, funding implications, lack of incentives to participate, lack of leadership, unclear objectives, representation-related issues, and lobbying. External factors are those which lie outside Skeena collaborative processes yet influenced these processes, and relate to larger issues that included policy deficiencies and economics.

Behavioural issues and implications.

Many interviewees noted the presence of strong personalities and intense animosity among groups in these processes and in the words of one person, "the battles" that occurred among groups. Strong personalities were linked with accusatory statements, profanity, personal attacks, disrespectful communication, and combative dialogue during both processes although these aspects appeared to have been most prevalent during the SWI. One person noted that they still experience animosity that was born during these processes, and another noted that they still perceive another sector to hate their sector. Personalities were also noted by some interviewees as making conversations around tough issues emotionally draining, and this made it difficult to separate the person from the issue. Interestingly, one person felt that despite "nasty exchanges" there was respect among participants. Interview analysis and document analysis demonstrated that behavioural challenges were disruptive, affected people's ability to communicate constructively and stay focussed on a common purpose, enabled avoidance of certain issues, silenced some process participants, and made others defensive. As one person noted, this kind of behaviour made it challenging to trust each other, particularly when participants questioned each other's commitment to the process. Another person noted that these kinds of exchanges led to a negative atmosphere that wasn't conducive to problem-solving.

In the case of the SWI there was no Steering Committee TOR in place, however meeting records indicated that a list of principles was adopted in June 2008 that was essentially rules for participation, which identified aspects such as having respect for others. Despite this, a substantial amount of SWI interview data suggested that behaviours contravened principles such as respect, which also indicates that accountability to these principles was lacking. For instance, several interviewees noted that they didn't feel that there was a middle ground that could be

reached and as one person noted, the history of friction was "like a bad hangover". Many interviewees noted the ingrained issues and entrenched arguments among groups in both processes, and that many didn't participate with an open, willing mind. The behaviour of some participants, the uncomfortable atmosphere of arguing and lack of progress, and the perception that it was a waste of their time were reported by some interviewees as contributing factors into why they ceased attending SWI meetings. Further, trepidation to participate in future collaboration was expressed by some research participants.

Facilitation.

During the SWC, many research participants noted that difficult discussions occurred during the sharing of perspectives and interests among the group. This sharing, in conjunction with a contracted third party facilitator for a large portion of the SWC, was also reported by many as an approach that enabled relationship building activities to occur although conflict and strained relationships remained prevalent. Third party facilitation was also contracted during the SWI, however there were two facilitators that took on this role at different times. Many of the participants in the SWI were the same as those who participated in the SWC, including one of the SWI facilitators. Therefore there was a history of interactions for some that spanned close to twenty years, and in some cases participants knew each other longer. Histories of interpersonal grievances and dysfunction were reported by many interviewees to have made discussions difficult during the SWI. Linked to this reporting was the idea that conflict escalated despite SWI facilitation, and ultimately relationships became further fractured.

Process structure deficiencies.

During initial stages of the SWI there were a number of meetings and discussions about developing a Steering Committee. Document review revealed that conflict, mistrust, and

communication difficulties rendered this process stalemated and extremely time-consuming. While some progress was made after the process began in 2008, with roles established for facilitation, the secretariat and financial management agreed to in early 2009, and signing of a formalized information sharing protocol in 2010, operational uncertainty (such as the lack of clear objectives, outstanding representation questions, etc.) continued late into 2010. Aspects often addressed in a TOR were evidenced in meeting records to continue to bring uncertainty to the process. For example, terms such as 'quorum' and 'consensus' went undefined, and debates about sector representation and what kind of public involvement was appropriate remained outstanding. While documents indicated that there was a TOR adopted by the technical committee (TAG) in early 2011, this occurred just prior to this process's suspension.

Diverse interests, conflict, and lack of dispute resolution.

Document analysis and interview data indicated that deeply entrenched issues and conflict ridden discussions plagued historical Skeena processes, which appeared to be rooted in divergent interests present in the Skeena watershed. Examples of divergent interests include supporting cultural traditions and sustenance (First Nation FSC needs), supporting a family (e.g. harvesting as a food source and/or to sell fish, jobs at processing plants, etc.), enjoying outdoor recreation (e.g. steelhead angling in wilderness areas), and conservation (e.g. of fish and their habitat). Different interests such as these formed the basis of conflict, and serve as examples of what made collaborative Skeena discussions difficult, as did the strong personalities and/or limited communication skills of some participants as indicated by interview data, and the lack of a dispute resolution clause during either the SWC or the SWI.

Limited participant resources.

While many interviewees mentioned that there were limitations to participant resources for both funding and time to attend, document analysis caused me to suggest that it's important to note the dedication of many people involved with both processes, as the effort and energy expended working together was significant. In addition, documents and interview data indicated many people that participated in the SWC were doing so as volunteers however this limited their ability to participate. Further, interview data revealed that those involved through their employment during both historical Skeena processes had varied abilities to attend due to workloads, competing priorities, and limited travel budgets. Limitations of time/availability and funding were prevalent during the SWI, which made consistent participation challenging, especially when progress on issues was reported by many interviewees as frustrating and slow.

Funding implications.

For the SWI, questions arose during numerous interviews around how funders may have influenced the SWI process. Some interviewees thought the GBMF to be neutral, however others asked questions around (1) the appropriateness of the funding in terms of whether it was influencing the direction of work and its outcomes, (2) if there was undue influence on SWI governance by funders, (3) if the funder might have an agenda that could be detrimental to those at the table, and (4) whether science-related work conducted through the SWI was objective. This was, according to some interviewees, compounded by the funder supporting the process itself (e.g. facilitation costs) as well as select interest groups at the table. Linked to this were perceptions of possible disproportionate influence of some participants on the GBMF, which was associated with expressions of tension and distrust. Conversely, other interviewees saw this

funding source as a good way to make progress on WSP-related work, particularly in light of DFO's funding/resource constraints.

Lack of incentives.

The topic of incentives is woven throughout this chapter, however two points that emerged from the data deserve emphasis here. First, several interviews revealed that the prospect of input into the direction of Green Plan spending during the SWC was a key incentive that brought participants to the table, however when these funds ceased, participating groups moved away from the table. Second, numerous interviewees indicated that the SWI lacked a clear objective (discussed later in this section) as incentive to draw participants into a committed process. When compared to the SWC during document review, it appears that without a clear objective like DFO's steelhead ultimatum in the early 1990's, there was essentially no consequence for lacking or intermittent participation and/or withdrawal from the SWI process. For example, when DFO fishery-related decisions were made that met the needs of various groups outside of the SWI, several interviewees noted that those groups moved away from the process.

Lack of leadership.

Review of documents revealed that leadership demonstrated by DFO during the SWC involved communication of a problem needing to be solved, which was supported with incentive(s) to participate, and a commitment to how recommendations would be considered during decision-making. These aspects were all lacking during the SWI and many participants confirmed this with assertions during interviews that DFO leadership was lacking during the SWI. To the contrary however, documents and interview data revealed that DFO did not initiate the SWI and attended in the capacity of a participant.

Looking at leadership in the context of facilitation, there were perceptions expressed during some interviews that there were times that various facilitators didn't have control of meetings during the SWI. Reasons drawn from interview data indicate that loss of process control were related to 1) close connections of the facilitator with processes and/or participants, and 2) limited knowledge of current Pacific fisheries issues. For example, several interviewees noted that profane and accusatory language occurred, personal attacks were communicated, and there were times when some thought participants were able to influence the facilitator. During both the SWC and SWI processes interview data indicated that sidebar discussions were held between the facilitators and participants (with those who were willing) to work through issues. This approach worked well to diffuse situations during the SWC according to some interviewees, however interview data showed that during the SWI, some participants declined to participate in sidebar discussions with the facilitator, and behavioural issues reportedly remained a problem. A few interviewees felt that because of the strong personalities in the room, stronger facilitation was needed in order to fill the need for leadership, however several interview participants also acknowledged that certain personalities are simply not conducive to discussions of difficult issues.

Unclear objectives.

A salient aspect to note prior to discussion of the SWC and SWI in terms of objectives, is the difference between participant objectives or interests, and collaborative process objectives. Collaboration participants attend processes with their own interest-based objectives, and ideally worked with others to embrace compromise and develop collaborative process objectives that could respond to common interests at the table. A common theme that arose from interview analysis of both processes were the vastly different participant interest-based objectives. For

example, the commercial sector participants focussed on the economic aspect of producing marketable products (fresh, frozen, canned, smoked, etc.), whereas recreational fishers expressed interest in the fishing experience (e.g. wilderness, sustenance, connection with the environment, entertainment, etc.), and environmental group representatives reflected on aspects such as conservation (e.g. sustainable fishing, preserving watershed integrity, etc.). First Nation interest-based objectives were not clearly expressed in interview data, however representation-related issues pertaining to First Nation participation in these processes is discussed in the next section, and an issue specific to First Nation perceptions of recreational fishing practices is identified later in the Key Issues section of this chapter.

In terms of the SWC process, documents confirmed many interviewees' claims that the collaborative process objective was to design and implement a reduction in steelhead interceptions, however what this meant was vague due to pre-existing disagreements. There was disagreement on what interception rates or mortality estimates were, and therefore on what would be considered a 50% reduction. Disagreement was so intense that one interviewee noted that SWC participants eventually agreed to proceed with discussions under the assumption that more steelhead would be going upstream generally, although lack of resolution of this debate continues to impact watershed discussions. Despite this debate, interview data analysis suggested that agreement to move forward provided an objective (to reduce steelhead harvest) that could guide the SWC, and while this led to consensus agreement on fishing plans for 3 years, delineation of steelhead abundance and discussion of associated issues remains contentious.

A distinct difference revealed during document review between the SWC and the SWI was that the SWC focussed primarily on steelhead harvest reduction, whereas multiple species were predominant during SWI discussions. This fundamental difference between processes was

confirmed explicitly by several interviewees and had vast implications in terms of the complexity of issues, associated conflict, and on whether collaborative objective setting was possible during the SWI. While meeting summaries and associated documents indicated that SWC-era conversations were often related to maximizing commercial harvest while addressing steelhead concerns, conversations during the SWI were much broader (e.g. WSP implementation). According to a few interviewees the SWI was convened with the intent to work collaboratively towards the broad purpose of WSP implementation, which included collaborative development of process objectives. However interview data analysis showed that the lack of a specific problem driving creation of the SWI, the lack of leadership, and the prevalence of ongoing conflict and behavioural issues, blocked agreement on objectives that could have guided this process.

SWI document review and interview data revealed that while some technical objectives were eventually collaboratively developed, these were limited to science-related objectives and didn't address broader, more difficult issues that remained at the root of conflict (as discussed in the Key issues section in this chapter). Document review indicated that the absence of clear objectives from the outset of the SWI appeared to be an impediment to planning, and was identified as such by many interviewees. Later development of technical objectives was conducive to identifying and filling in information gaps, however conflict and behavioural issues had destabilized participation and participants were backing away from the table by that time.

Representation-related issues.

Representation arose in themes broadly with regard to First Nation participation, as well as specifically to the SWC and to the SWI, therefore representation-related results are reported accordingly in the following sections.

First Nation participation.

Review of meeting summaries and interview data suggested that First Nation participation was somewhat limited during both Skeena processes. In addition, documents and interview data noted that First Nation attendance was often more as observers rather than of full participation during historical Skeena processes. Many interviewees noted that uncertainty around unresolved First Nation rights and titles issues affected First Nation participation during these processes, as their participation is within a much broader context than fishery resources. While this section in this dissertation is relatively short, its implications are substantial. As treaty negotiations evolve, court decisions are delivered, and new relationships are forged among provincial and federal regulators and First Nations, collaborative governance will likewise evolve. These aspects have far-reaching implications for NRM in terms of governance, power dynamics, and collaborative management. For example, as aboriginal rights and title issues are resolved, there will be greater certainty for government to government discussions with First Nations, and more clarity that can illuminate collaborative roles and responsibilities. First Nation participation is discussed further below with regard to the SWC and SWI separately.

Skeena Watershed Committee.

The strong historical relationship between DFO and commercial harvesters resulted in perceptions expressed during quite a few interviews of an unfair influence of the commercial sector representatives on DFO decision-making. In addition, meeting records indicated that recreational sector representation was somewhat sporadic due to minimal incentives to participate.

Further, there were suggestions by some interviewees that there were disconnects in terms of representative responsibilities, as there was no explicit stipulation (in a TOR for

example) that committed representatives in terms of how they communicated with and/or were responsible to their constituents. For example, questions arose such as how much information was shared with constituents, and how was information gathered to feed back into the collaborative process? Documents and interview data were revisited with the intent to inform these questions, however answers remain unknown as there did not appear to be consistency among representatives' responsibilities.

Documents demonstrated that First Nation participation was present in a technical capacity through SFC representatives, however several interviewees posed questions of how SFC representatives were accountable to their aggregate constituents. For example, (1) how was information from the SWC distributed among SFC member nations and their members? and (2) how was feedback collected by the SFC to bring to the table?

Skeena Watershed Initiative.

Participants reported concerns about the lack of accountability to constituents during the SWI and about what mandates participating representatives brought to the table (i.e. personal or employment: was participation representative of the interests of their constituents?). In this vein, there was confusion expressed by some interviewees around the role that a number of participants took, and on "which hat" they were wearing, as some participants were involved in different capacities within multiple organizations.

There were also issues related to First Nation representation during the SWI that were raised during some interviews. For example, the SFC participated as the sole voice of First Nations early in the process, however several interviewees made assertions that the SFC didn't represent the interests of all First Nations within the watershed. Later during the process, meeting records indicated that individual Skeena First Nation interest increased as there was

attendance of various Skeena First Nation representatives at meetings, although this occurred at the tail end of the process when overall SWI process participation was waning. Unresolved rights and title issues, governance implications that evolved since the time of the SWC (as noted in chapter 3: e.g. treaty discussions; evolving relationships; and case law), as well as capacity (e.g. experience and training), and resource issues (e.g. funding and staff), were common themes from interview data that were linked to expressions of limited First Nation representation.

The recreational sector's representation during the SWI was perceived by some interviewees to not encompass all recreational fishing interests and as such there was some concern that the diversity of recreational perspectives were not heard at the SWI table. For example, there was concern expressed by several interviewees that a full range of recreational interests that might include a spectrum of interests from fishing recreationally in local streams, to those flying in to remote locations for guided trips and for guide outfitters that provide these kinds of services, was not represented at the SWI table.

There were also issues raised by some interviewees that were echoed in meeting materials in terms of how Environmental Non-Governmental Organizations (ENGOs) were represented. For example, documents illustrated there were more interested ENGO organizations than there were ENGO seats at the SWI table, and questions were raised as to how interest groups that do not function as an aggregate apply to or gain a seat at a process. It was also a question in terms of representative equity among sectors and groups present. If each group or sector at the table was represented through two representative's seats, how could more than two ENGO interest groups all participate within this equity perspective? In particular, how can governance be structured to enable representative participation, yet keep a process

manageable and equitable? The SWI process was suspended before these questions could be addressed.

Documents showed that the SWI was further complicated by repeated efforts to design a collaborative process from a community-based management perspective that included public involvement. This was a repeated topic of governance-related discussions documented in meeting records and was never resolved.

Policy.

At the time of the SWC, policies had not yet been developed to provide guidance to collaborative work, and a few interviewees suggested this deficit caused issues for DFO in terms of how collaborative fisheries management fit into the larger DFO policy context (both nationally and regionally). The work that led up to the 3 year fishing plan negotiated in 1994 highlighted this policy gap during document review. Several interviewees noted this policy gap as well, and suggested that it cast uncertainty on the future of collaborative local processes.

There are also larger policy contexts to consider as these considerations influence how DFO manages fisheries. For example, fishing plan compromises reached under the 1994 fishing plan (i.e. the two week early chinook directed fishery and the late two week coho-directed fishery) are now assessed within a more complex policy framework. The advent of policies post-SWC have complicated Skeena management and this was noted by a number of interviewees. These include policies such as the allocation policy for Pacific salmon (DFO, 1999) and the Sustainable Fisheries Framework (DFO, 2009). Overall, document and interview analysis indicated that changes in policy and subsequent management since the SWC have contributed to conflict-laden discussions that generally revolve around access and allocation issues (discussed in Key Issues section later in this chapter). For example, interview data and documents

illustrated that debates around the selectivity and sustainability of fishing activities, particularly gillnet selective fishing measures, exacerbated conflict before and during the SWI.

Impacts on ways of life and economic impacts.

Major changes to the commercial fishing fleet since the 1980s has had significant implications for ways of life, livelihoods and economics (of individuals and communities). Commercial fishing was and continues to be a choice as a way of life for many. Interviews indicated that some chose this livelihood because they prefer to be on the water, or they enjoy the "romantic" lifestyle, some because it is a family tradition, some for the ability to experience remote locations or small community living, for spiritual, for economic reasons, etc.

Changes for the commercial fleet over past decades highlighted in documents reviewed included: the reduction of the gillnet and seine salmon fleets; a shift from coastal fishing to area-based, species-specific licencing; and the introduction of specialized equipment and protocols (such as revival tanks to revive non-retention species before their release). These changes all came with associated economic impacts. Document review highlighted rationales for changes that included: to reduce fishing pressure, to alter the distribution of fishing effort, and to increase the selectivity of fisheries. Interviews clearly indicated that each change altered the ability for fishers to maintain their economic situation, and flowing from this, impacted economic viability of families, businesses, and communities.

In the context of these changes, imagine the announcement made in 1991 that Skeena-bound steelhead interceptions would be reduced by 50% with the knowledge that this would impact commercial fisheries. Specifically, the reduction of steelhead interception caused further changes to coastal fisheries near the mouth of the Skeena River. As a result, there were

significant impacts to fishers and communities within the Skeena watershed. As presented in the following paragraph, Skeena communities felt these changes deeply.

After seeing reductions in commercial fishing opportunities, documents reviewed indicated that the prospect of a big salmon return in 1996 created an interest in increasing commercial harvest. The larger run predicted for 1996 caused disagreement over commercial harvest opportunities, a protest, and public backlash. Both documents and interview data noted that the commercial sector withdrew from the SWC as some felt that they could better meet their interests outside of the process. This terminated the SWC's MOU and prevented collaborative development of a fishing plan that year. The conflict and unrest of this time are captured well in the 1996 federal-provincial review of the Miflin Plan *Tangled Lines*, which states:

> "time and again, the Panel sat through vehement attacks on "the other guy". Commercial, sports, aboriginal, fish farmers, the provincial government, fish processors and gear types from with the industry were all publically attacked in Panel consultations. The Panel remains deeply worried about the level of conflict and tension afflicting an industry that needs to use its energy far more constructively if it is to solve the daunting challenges it now faces" (p. 18).

The uncertainty of fishery resources along with changes to the commercial fishing industry have resulted in financial, emotional, cultural, and spiritual implications. Interviewees shared personal stories of: people who lost their boats because they couldn't afford their loans, families who were broken apart, how some took their lives in despair, and how businesses and communities suffered. People felt and continue to feel anger, rage, grief, a sense of loss for their way of life, and a reduced ability to make a living. In this context, conflict within the watershed has been prominent for decades. Communities have experienced population declines as people

left to seek employment elsewhere and community revenues subsequently decreased. Impacts from this sequence of events were woven through interviews, documents, and meeting records, and it is fair to say that impacts continue to be felt within Skeena watershed communities.

There are also issues around the loss of livelihood as it was perceived by a few interviewees as an exchange for people's recreation. Commercial fishing has provided prominent employment income for many in the watershed, particularly in coastal areas such as Prince Rupert, for many decades. Loss of coastal fishing opportunities led to loss of income and reduced livelihoods, which has impacted the viability of communities in these areas. Conversely, the demand for northern recreational fishing opportunities has given rise to a prominent recreational fishing guiding industry that, in some cases, is tailored to elite wilderness fishing experiences. Some interviewees saw this as an industrialization of the recreational fishery and of "selling" the resource to rich tourists, with lost opportunities impacting local coastal fishermen (both recreational and commercial) as well as local coastal communities.

Interviews clearly demonstrated the sense of loss, mistrust, and disagreement among groups and their representatives that continues to impact fishery-related discussions in the watershed. The deep, lasting impacts continue to impede fishery-related discussions; it was evident during interviews that anger was often a response to suggestions of further change. This section is critical to understanding the history of conflict and fishery-related collaborative difficulties experienced within this watershed.

Lobbying.

Documents indicated that early on during the SWC there was consistent DFO messaging that let participants know that if they wished to discuss Skeena-related issues they must raise them at the SWC table. This was consistent within the local Skeena area, at the regional DFO

level, and was also supported nationally. Interview data suggested that this approach was compromised after an election resulted in new political powers, and lobbying became an avenue that led to circumvention of the SWC table. 1996 saw a good Skeena salmon return and, in the words of one individual, was "the beginning of the end of the SWC". The size of the return drew the interest of increased harvest opportunities by the commercial sector. With the change in government, documents indicated that the United Fishermen and Allied Workers Union (UFAWU) decided that their interests were better served by lobbying outside of the process, therefore they ceased SWC participation. The UFAWU was one of five signatories that made up commercial sector representation on the SWC. The withdrawal of the UFWAU early in 1997 from the SWC's commercial caucus terminated the SWC MOU and therefore the SWC was disbanded.

With no mechanism identified during document review to prevent lobbying during the SWI, it is not surprising that meeting records and interview data demonstrated that lobbying was fairly commonplace and various lobby methods were pursued as a means to better meet parties' interests. For example, media exposure, public communications work, and other strategies were utilized to highlight issues/concerns/interests.

Knowledge integration.

During interviews, participants were asked what collaboration meant to them. Common themes among responses included: willingness to work together on a problem to meet common objectives, focus on finding solutions and getting to outcomes, and having a clearly defined problem/objective. Other less common points were perspectives that: there is more to be gained by working with others (synergistically) than there is by domination (having power over others),

the need for willingness to compromise, and the need to look for opportunities to find mutually beneficial arrangements.

Further, in support of effective collaboration participants identified: communication, relationship-building, trust-building and goodwill, shared understandings, information exchange, and constructive dialogue, as well as the need for organizational support for participants as important. Process design aspects that various interviewees considered important were: the necessity of leadership, equal standing among participants, recognition of legitimacy of other participants, having the right representatives included, understandable policies to guide discussions, and the need for a clear implementation plan.

These themes reflect many of Chapter 3's topics, however results presented throughout this chapter illustrate the discrepancy between the cumulative knowledge described above and the lack of knowledge integration during these processes. From a cumulative perspective, collaborative capacity was present within SWC and SWI participants', yet despite this, challenges arose during both processes that led to their respective terminations.

Key Issues

In this section, key issues that contributed to collaborative challenges are discussed to provide context and to recognize their impact on these processes. Key issues include:

- Access and allocation
- Increased First Nation fishery access
- The growth of the recreational fishery
- Harvest planning
- Steelhead and data issues
- Knowledge inequities

- Recreational fishing practices

Access and allocation.

Access and allocation refers to who (access) gets how much access (allocation) to fishing opportunities, i.e. harvest allocations among interest groups. There are many aspects to access and allocation discussions, and many inter-related issues. Study results confirmed this, in the sense that the majority of key issues that emerged from data analysis indicated that historical Skeena issues had fishing opportunity access and/or allocation implications. As a result, key issues that contributed to collaborative challenges are discussed throughout the remainder of this section with explicit consideration of access and allocation. Discussed below, issues of increased First Nation access, the growth of the recreational sector, harvest planning, steelhead and data issues, knowledge inequities, and recreational fishing practices had profound implications in terms of conflict. This was most obvious in the context of continuing impacts to commercial harvest opportunities.

Increased First Nation fishery access.

Upriver First Nation economic harvest opportunities through Excess Salmon to Spawning Requirements (ESSR) and demonstration fisheries (e.g. Babine River/Lake) began in the early 1990's (Gottesfeld et al., 2009) and have increasingly occurred (Counterpoint, 2008). These fisheries target stocks in terminal areas near their natal spawning streams. These kinds of terminal fisheries (as opposed to mixed-stock fisheries) are being increasingly explored as selective, sustainable fishing options (Gardner, 2009) and effectively shift a portion of harvest from coastal marine areas. This shift affects the economics of fishers and communities, as ESSR fisheries shift harvest opportunities from coastal marine commercial fishers to upriver First Nation fishers (Pinkerton et al., 2014).

The growth of the recreational fishery.

The profile of recreational fishing and guiding outfitting services in the Skeena watershed has increased since the time of the SWC, which has altered fishing patterns and increased recreational fishing pressures within the watershed (Pinkerton et al., 2014). With the increased profile of Skeena recreational fishing opportunities, there has also been an increased prevalence of non-local steelhead anglers, guiding outfitters, and associated foreign tourism. Interview data suggested that the growth of the upriver sport fishery has led to fairly common perceptions of reduced access/opportunities for local fishermen. Flowing from this and issues related to commercial interception of steelhead are: the increased profile of steelhead concerns, expressions of concern that there may be a subsequent impact on First Nations, and that perceptions of additional steelhead conservation management measures have exacerbated inter-sectoral conflict (i.e. access and allocation debates).

Harvest planning.

Some interviewees indicated that there are sensitivities with regard to the development of fishing plans in the Skeena watershed. Fishing plans are developed for each group annually and include: the commercial sector, the recreational sector, and First Nations. The SWC saw all groups collaboratively developing an annual harvest plan, however the main focus of those discussions was development of the commercial fishing plan. It's important to note that First Nation fishery planning is done within a different governance context that responds to their constitutionally protected aboriginal rights. So while First Nations were involved in SWC discussions, documentation indicates that their harvest planning was not directly discussed. Document review also suggested that the recreational fishing plan was not deeply discussed, likely because the SWC's objective related primarily to reducing steelhead interceptions by the

commercial fleet. Because the commercial fishing plan involved reduced commercial harvest opportunities, continued focus of the SWC on commercial fishery planning was reported by some interviewees as contentious.

Still contentious during the SWI, the commercial sector balked at discussing annual fishing plans at this table, although structured decision-making (SDM) was explored to a limited extent with an independent consultant during the SWI as a possible approach to Skeena salmon harvest planning.

> "Structured decision making, or SDM, is an organized approach to developing and evaluating creative alternatives and making defensible choices. It's particularly useful for helping groups work productively together on decisions marked by technical uncertainty and controversial trade-offs. At the core of SDM is the idea that it is possible and necessary to create a deliberative environment that deals rigorously with both facts and values in decision making" (CRM, 2015, "*SDM brings innovative methods …*", para 2).

Discussion on moving forward in the Skeena within a SDM framework was inhibited by the ending of the SWI, however SDM discussion demonstrated that SWI participants were interested in finding solution(s) despite their differing positions, and that they were willing to look at working in a different way.

Steelhead and data issues.

Interview results showed that there has been a longstanding debate among historical collaborative Skeena process participants over whether there is or ever was a Skeena steelhead conservation issue. While some indicate that there is insufficient data to inform resolution of this issue, an internal DFO communication from late 2012 stated that there was a general agreement reached between DFO and the Province "…that Skeena steelhead are NOT a conservation

concern and that the focus is really on how to provide harvest benefits for various harvest groups" (DFO email, unpublished). Some interview participants echoed this latter sentiment as they perceived that steelhead interceptions are more of an allocation issue and debate centres on the shifting of fisheries from marine mixed-stock fisheries to upriver terminal fisheries. Others are adamant that there is still a conservation issue and steelhead impacts need to be further reduced. As a result, animosity remains among individuals and groups in the watershed that can rise quickly to adversarial conflict at the mention of steelhead, as steelhead management measures have direct implications on annual salmon fishing plans and therefore impacts access and allocation discussions.

Individuals with differing interests can interpret data in different ways to support differing views; numerous interviews indicated that differing data interpretations historically stimulated conflict and inhibited collaboration during both historical Skeena processes. This was particularly evident in terms of steelhead data issues in interview data although was also evident in documents reviewed. Results demonstrate that the lack of steelhead data, and debates around the quality of available steelhead data pertaining to population and harvest numbers obtained since then have haunted Skeena management discussions for decades. In particular, disagreement between federal and provincial government employees over steelhead data and corresponding issues has caused a longstanding rift. Many media articles and publications have been borne of differing perspectives, and interview data suggested that it has caused a lasting impact on employees personally and professionally. Because there was a lack of agreement on data and its interpretation among governments and interest groups, management measures taken since the SWC have been difficult to assess in terms of whether the objective to reduce Skeena-

bound steelhead interceptions by 50% (or the 42% reduction negotiated through the SWC) was met.

There have also been longstanding debates documented over: the appropriateness of Tyee Test site data collection, catch monitoring data quality, and the scientific value of data when the data is of poor quality. Similar to disagreements over data interpretation, disagreements over data collection methodology and subsequent data quality permeated Skeena steelhead discussions for decades, and these issues influence access and allocation discussions.

Knowledge inequities.

Disproportionate knowledge has been a long-standing issue that impacted communications in terms of misunderstandings and tension that had contributed to conflict (Pinkerton, 2009b). This had implications in terms of misunderstandings and disproportionate understandings of technical science-related work among process participants. In addition, disproportionate knowledge and capacities (scientific, technical, or writing) among those at the table identified during interview data analysis contributed to some groups realizing increased scientific and technical capacity while others did not. According to interview analysis, disproportionate knowledge also acted as a barrier in terms of access to funding. For example, technical and science-related proposals to access funding require a certain level of knowledge, of access to technical expertise (capacity) to carry out project work, and the ability to draft a proposal in the requisite format. Experiences within the watershed suggest that a variety of groups have had issues accessing funding at different times due to these kinds of capacity and knowledge issues.

In addition, the science-related funding associated with historical Skeena processes exacerbated this issue as some interviewees felt that funding was not distributed proportionately

among participants and/or within the watershed's area, and therefore there have been long-standing perceptions of inequity. This has sparked accusations of favoritism among interest groups that are evident in media publications, historical Skeena documents, and interview data, and contributed to watershed conflict. For example, the SWI process involved funding that supported science-related work however there were varied levels of understanding of the work (e.g. benchmarks), which further impaired discussions and was exacerbated by the potential for benchmarking activities to affect allocations.

Another consideration of disproportionate knowledge is that, when combined with effective communication skills, those with higher knowledge levels have, according to a few interviewees, at various times during Skeena collaborative processes influenced people's understanding of issues. This led to situations when participants perceived that some participants apparently used their knowledge to lobby other participants to "win them over" to their perspective on issues.

Recreational fishing practices.

There is a stark contrast between the recreational practice of "catch and release" fishing in relation to perceptions of the recreational fishing practice as playing with food, and a number of interviewees noted the friction that it has caused and continues to cause with First Nations. The premise of friction is demonstrated with the following phrases drawn from interview data: "my mother taught me not to play with my food" and "there is no wounding season when hunting". Key to this dichotomy is the difference in objectives. For example, the recreational fishery primarily has entertainment and food drivers, while commercial and aboriginal fisheries primarily have food, cultural, spiritual, and/or economic drivers. The contrast of entertainment value with commercial and aboriginal drivers relates to the stark contrast between values (e.g.

entertainment vs. subsistence) that gives rise to this friction. Pinkerton put it well in her 2009 paper: "…aboriginal fishermen strongly condemn catch and release sport fishing as immoral and dangerous on the grounds that it shows disrespect towards the fish to obtain enjoyment from their suffering, while also threatening their willingness to return to the river" (2009b, p. 2).

Survey Results

After preliminary analysis of interview data was completed, preliminary findings were shared with interviewees in the form of a short survey to assess whether or not, and the degree to which, preliminary findings were consistent with interviewee perceptions. A copy of the survey is included in Appendix B. Following the method articulated in Chapter 2, each person was asked to rate on a Likert scale of 1 to 5 how much they agreed or disagreed with forty statements. Ten questions pertained to both processes, one relating to an underlying cause of collaborative challenges and nine to key issues that aggravated collaborative frictions. Sixteen of thirty surveys were completed overall although respondents did not select a response for all statements, therefore sample sizes were small. Results are provided in Appendix C, and overall illustrate a high degree of survey participant agreement with preliminary research findings. The survey shared preliminary results with participants and sought their feedback, confirming or refuting them, although the application of these generalizations are limited given the small sample size and concern as to whether their interpretation is representative of historical process participants. SWC-related responses resulted in a sample size between 8 and 10, and SWI-related responses resulted in a sample size between 6 and 9. Sample size for statements related to both processes (in terms of underlying causes of collaborative challenges and key issues that aggravated collaborative frictions experienced during the SWC and/or the SWI) was either 15 or 16. At best, sample sizes reflected roughly half of those interviewed. As a result of sample size

limitations, analysis was restricted to averages (as discussed in Chapter 2). Responses were analyzed to determine whether statements were generally supported or refuted. As such, survey responses were averaged to assign cumulative response ratings (agree, neutral, or disagree) for each statement (see legend at the top of Appendix C). Averaged results indicated overall agreement ratings with thirty-four statements, and disagreement ratings with six statements. The disagreement rating with statement 14 related to behaviour during the SWC elicited nearly equal rankings of agreement and disagreement (five disagreements, four disagreements and one neutral response), and is discussed in Chapter 6. The disagreement ratings for statements 27 and 39 are discussed in the following paragraph, and the remaining three disagreement ratings, related to perceptions of consistency of participation and process commitment (statements 24-26), are discussed in Chapter 6.

In addition to sharing preliminary results, the survey functioned as a tool to pose questions based on interesting threads that emerged from interview data, i.e. to test whether they were influencing factors on historical Skeena collaboration or not. Two statements tested to see if there was support for specific ideas that were strongly expressed in some interviews, as there was uncertainty as to whether they might apply more broadly to this research (statements 27 and 39). One served as inquiry as to whether the broader policy context was an underlying cause of collaborative challenges (e.g. the Pacific Salmon Treaty), and the other probed whether industrial interest in the watershed, potential development and prospective habitat issues might have been a key issue that aggravated collaborative frictions. Fairly strong disagreement (the average of 4.3 with 5 representing the strongest level of disagreement, excluding neutral/don't know responses) was the result for both queries. While the data suggests that, for a select few, these aspects were

factors that impeded Skeena collaboration, the lack of broad support resulted in neither topic being explicitly discussed in Chapter 6.

Overall, there were more neutral/don't know responses than anticipated, therefore data was analyzed with neutral/don't know responses excluded and compared with raw data analysis results to assess if this would alter the cumulative assessment of agreement or disagreement with each statement. Results for each set of average calculations (raw data = Data Set 1, adjusted data = Data Set 2) are presented in Appendix C, as are the differences between these analyses. Excluded analysis reduced sample sizes to as low as 4 for some statements therefore results were interpreted with this consideration. Differences between averages for raw data versus excluded data show +/- differences of between 0 and 0.6. Twenty-eight of forty averages for excluded data were within raw data average values by +/- 0.1 (red bolded figures in Appendix C represent differences greater than 0.1). There were no cases where the differences in values changed the interpretation from agreement to disagreement, or vice versa. In other words, the exclusion of neutral responses, in all cases, increased the level of agreement or disagreement, and in no cases changed the overall response.

Despite the small sample size, it is interesting to view responses through a lens of representation. Survey responses received were fairly equitably distributed among groups participating in both processes (see Appendix D), with the exception of environmental representation. However in the context of statements that pertained to both processes, the lower representation could be interpreted as reflective of the absence of environmental representation in the SWC.

In Summary

In summary, document review, interviewees, and survey respondents cumulatively indicate that historical Skeena collaboration successes often related to communication-related benefits such as: relationship-building, opportunities for knowledge-sharing, creative problem-solving, the development of new knowledge (e.g. biological understandings), and increased common understandings among participants. Whereas collaboration challenges demonstrate strong overarching themes of: process design deficiencies, external factors, and impacts of long-standing historical conflict. Further, this chapter demonstrates that this research has identified: limited willingness of various historical Skeena collaborative process participants to cooperate and engage in reciprocity, hesitation to participate in future collaboration by some research participants, an ongoing prevalence of conflict and behavioural issues during collaborative interactions that negatively impacted relationships, and the associated persistence of historical Skeena process participants that demonstrated behavioural issues in current fisheries-related discussions.

Themes reported throughout this chapter are discussed in Chapter 6, as a cumulative discussion of SWC and SWI learning based on interview analysis, survey analysis, and document review in light of existing academic knowledge. Conclusions arise as learning points throughout the chapter's discussion of collaboration successes, collaboration challenges, and key issues related to collaborative challenges.

Chapter 6: Discussion & Conclusions

Results presented in Chapter 5 clearly demonstrated that success and challenge themes are not isolated but interconnected. Research results are examined and discussed within the framework of research questions, and consequently this chapter follows the same order of topics, i.e. collaboration success and challenges, then summarizes lessons. Lessons are organized to respond to two key theoretical perspectives, those being communication and conflict resolution, as well as a desire for practical application of lessons. The findings of this study suggest that long-standing conflict profoundly affected individuals and interactions, undermined two historical Skeena collaborative initiatives, and continues to impact ongoing fisheries-related discussions.

Opening this chapter's discussion, collaboration successes demonstrate a strong overarching theme of communication. The complex topic of collaborative challenges is therefore is broken into three sections to facilitate discussion: key themes underlying collaboration challenges, the impact of historical context and external drivers, and collaborative design challenges. Lessons from the SWC and SWI are then summarized and are presented in a summary table as a practical reference tool. Following this, I revisit key issues that arose during interview data and document review in terms of their fisheries management-centric focus with the lens of application of Skeena lessons.

Collaborative Successes

Successes identified through the research included: interpersonal communication & relationship-building; facilitation & interest-based negotiation; proactive engagement; clear objectives; political support as lobby prevention; funding; and practical outcomes of collaborative successes. Each of these exhibit strong linkages to communications, and therefore

are presented as a synthesis that demonstrates communication-related benefits. These include: relationship-building, opportunities for knowledge-sharing, creative problem-solving, the development of new knowledge (e.g. biological understandings), and increased common understandings among participants. The exception is political support as lobby prevention, which is discussed as a key collaborative challenge theme. This topic bridged success and challenge topics and is most appropriately discussed as a collaboration challenge. Key words pertaining to themes identified in Chapter 5 are in **bold** to emphasize their interconnectedness and provide a visual linkage to results reported in Chapter 5.

Both the SWC and SWI provided **proactive** opportunities for **knowledge-sharing** and the development of new knowledge (e.g. biological understandings). Participants and the groups they represented experienced learning opportunities that contributed to deepened understandings of aspects such as: other parties' interests, factors that underlay fisheries issues, and biological considerations, to name just a few. For example, tangible aspects such as information sharing and mutual learning enabled **social capital** to develop. One interview comment provided a useful demonstration of this, as the research participant stated that while "…the [SWC] process took a lot of time…this may have supported the strength of the **outcomes** in that people owned it when they were done, [we] didn't have to sell the results." In addition, a significant amount of **science-related work** was undertaken through the SWC and SWI that included the federal-provincial science model developed during the SWC and benchmarking work undertaken during the SWI. Another example can be found with respect to the SWI, during which there was **improved access to technical information**, as there is a publically accessible website-based archive currently maintained by the PSF.

The **clear objective** to reduce steelhead interceptions that drove the SWC essentially made the SWC a **problem-solving process** (Barber & Taylor, 1990) that enabled compromise and development of what Pinkerton (1999), Westley, Zimmerman and Patton (2007), and Wondolleck and Yaffee (2000) considered to be creative solutions. SWC participation enabled building of **social capital** through activities such as workshops, **formal and informal communications**, **facilitated discussions** (Armitage et al., 2007), and **consensus agreement** on the 1994 fishing plan. This process also resulted in the ability of participants to work together to develop mutually-agreeable solutions, similar to those noted by Frame, et al. (2004) and Wondolleck and Yaffee (2000), although the level of **communication skills** varied among participants. From a general communications perspective, these aspects demonstrate that the SWC supported practical discussions; **better understanding** of challenges among parties (including regulator challenges); and in some cases led to **relationships** that grew beyond the SWC context.

The SWI was summed by one person in the context of **communication** with the quote: "personalities were challenging – coupled with their history, made this process a bit like a hangover and made it hard for separating the people from the issues". Despite perceptions such as this, some interviewees also indicated that there were positive communications outcomes. Participants indicated that this included: that the SWI built on **relationships** cultivated during the SWC; and that this process raised the public profile of issues such as the WSP, wild salmon stocks, and mixed stock fisheries.

An overarching benefit (or success) that arose during analysis of these processes was in the context of increased exposure of participants to skills in the areas of **communications** and **conflict resolution**. For example, reflecting on historical Skeena processes a number of

interviewees noted the importance of recognizing, for example, that participants "have different wants and needs and objectives", "that there has to be movement" and that "there are levels and layers – like the difference between tolerating something and embracing them with a deeper understanding and the right to be who they are and do what they do". **Recognition of differing objectives** and the need for **compromise** and **interpersonal respect** align with effective communication practices (Wondolleck & Yaffee, 2000), enable development of communication skills such as active listening (Ury, 2007), and support effective participation in collaboration (McCay, 2002). Interview excerpts such as these and cumulative assessment of participants' views on what collaboration means to them as discussed in Chapter 5 suggests that the capacity to collaborate was present in participants during historical Skeena collaborations. And while cumulative application of this knowledge and associated skills does not appear to have been conducive to Skeena collaboration, **collaborative experiences and practical skills** that participants were exposed to and/or practiced during these processes were reported as useful in other contexts, for example, during participation in the Fisheries Renewal BC initiative. As such, knowledge and skills derived from historical Skeena processes have contributed to collaborative discussions beyond the context of the Skeena watershed. In this sense, and in the context of viewing these processes as learning experiences, both historical Skeena processes resulted in some long-term **communications-oriented benefits**, although communication issues remain outstanding with regard to Skeena fisheries-related discussions.

A common theme in relation to the SWC was noted during one interview as having "…**built relationships**, and built them with **trust** based on **increased common knowledge** and understanding that stood for a long time – the SWI eroded most of this aspect and alienated [many]…". **Relationships** developed during the SWC (**social capital**) supported constructive

discussions and technical work, for example, the science model developed collaboratively between provincial and federal staff. To be clear however, there were significant **time and resource investments** made to reach these **outcomes**. With respect to the science model developed during the SWC, "all aspects were challenging – this took a couple years and compromise was made on both sides and hundreds of days of discussions…and it took a lot of work."

Turning the focus to the SWI, this process enabled newcomers to Skeena collaboration to get to know other Skeena interested parties and **increased understandings** of watershed issues through group dialogue, however the words of one interview summed the overall **relationship-implications** of the SWI up well: "the SWI made things worse, particularly in terms of steelhead and how it contributed to fracturing the relationship[s]…". Behavioural issues identified in Chapter 5 were closely aligned with evidence of fractured relationships, and are discussed in the following Collaboration Challenges section.

Collaborative Challenges

To facilitate discussion of collaboration challenges, themes presented in Chapter 5 are discussed in the context of four topics: 1) key themes that underlay the SWC and SWI; 2) the impact of historical context and external drivers on SWC and SWI collaboration; 3) a response to the question of whether Skeena watershed collaboration is appropriate at this time; and 4) collaborative Skeena process design lessons. Each topic is discussed with explicit reference to themes presented in Chapter 5 to facilitate continuity and clarity for the reader, and many discussions draw on a number of themes.

Key underlying themes.

Four key themes arose during NVivo analysis of interview data that underlay collaborative challenges encountered during historical Skeena processes. These deserve specific attention as they remain factors in the current Skeena context. Interview data indicate that each of these issues profoundly impacted both historical Skeena processes, and therefore provide an important preface to subsequent discussions. With no clear way to prioritize or order these topics, they are discussed below in no specific order and include: impacts on ways of life and economic impacts; lobbying; First Nation participation; and knowledge and science. Concluding thoughts pertaining to each key underlying theme are incorporated into recommendations made in Chapter 7.

1. Impacts on way of life and economic impacts.

It is difficult for groups to discuss and implement change, particularly when recent changes profoundly and negatively impacted the livelihoods and lifestyles of those involved. In the context of the privilege of access for commercial and recreational fishers (Lam & Campbell, 2012), the commercial sector's long-standing perception that the commercial sector bears risks and losses while other interest groups have lost nothing is interesting when considered in a legislative and policy context. DFO management is conducted within a legislative and policy context that places conservation as the foremost priority (*Fisheries Act*, DFO 1999). Once conservation objectives are met, the Canadian government's priority is First Nations' access to fishery resources for FSC needs (DFO, 1999), which are constitutionally protected (*Constitution Act*, 1982). Commercial and recreational access are the next priorities (DFO, 1999), which are regulated under the *Fisheries Act* (1982). This clearly places recreational and commercial harvests within the context of regulated access managed by the DFO. Regulated access involves

the purchase of a licence, which enables access to a commons resource (i.e. fish). As such, recreational and commercial fishing access is considered a privilege and not a right. While the profound changes experienced by fishers within the commercial sector are decidedly significant, interview data showed that misunderstandings related to discussion of regulated commercial and recreational access opportunities, as opposed to constitutionally protected First Nation access opportunities, have led to profound communication barriers during historical Skeena collaborations. Frictions related to the distinction between rights-based access and regulated access continue to impact Skeena fisheries-related discussions.

2. Lobbying.

The early success of the SWC regarding lobby prevention demonstrated the value of consistent leadership support from local, regional, and political support from regulators; the redirection of lobby efforts back to the SWC table ensured that Skeena discussions remained at the table. This forced those interested in participating in Skeena fisheries-related discussions to engage at the SWC table to work through issues, and to find solutions. During the course of this research it became clear that if participants in a Skeena process were not working towards solutions and/or not making progress towards their objectives, they tended to go outside the process to address their interests, (i.e. lobbying). This occurred later on during the SWC when the political climate shifted, although by contrast, the deficit of lobby prevention throughout the SWI undermined this process's effectiveness from the beginning. With regard to the SWI, there was insufficient leadership to direct discussions to the collaborative table. The SWI also demonstrated that with insufficient incentives to participate, participants often engaged in competitive rather than cooperative behaviour, which is alignment with existing knowledge (e.g. Frame et al., 2004; Wondolleck & Yaffee, 2000). This served to further diminish low trust

levels, further fractured relationships among process participants, and enabled continuation of the cycle of conflict within Skeena related fisheries management discussions. In alignment with the need for strong leadership in a collaborative process (Wondolleck & Yaffee, 2000), the SWI would have benefited from leadership that could have redirected lobby efforts back to the SWI table. In addition to the history of lobby activities during the SWC and SWI, Pinkerton et al.'s 2014 paper suggests that lobbying remains commonplace and unavoidable in their assessment of fisheries management functions of the Sustainable Marine Fisheries and Communities Alliance in the Skeena watershed. The persistence of lobbying in the Skeena suggests that if collaboration is to occur in the Skeena again, consistent strategies that direct lobby attempts back to the process would be essential.

3. First Nation participation.

The uncertainty around First Nation dynamics emerged as a common theme from my data relating to challenges in Skeena processes. First Nation communities are spread from coastal to inland areas in the watershed; and each community maintains its own perspectives and interests. As such, it's reasonable that each community's interests differ somewhat. Therefore it is important to be inclusive of each community so that their interests can be heard at the table, and that there is, at minimum, an attempt to bring equitable and appropriate representation to the table. It is up to each First Nation to determine whether, and how, they wish to participate, and inclusion of a clause in the TOR that explicitly recognizes and respects aboriginal rights may facilitate their participation.

4. Knowledge and science.

Science-related work was undertaken during both historical Skeena processes, however questions and disagreement pertaining to science-related issues remain, such as disagreement

over interpretation and utility of Tyee test site data. An arm's length approach using subject matter experts to address science-related questions has been suggested as an effective approach to addressing outstanding issues (Walters et al., 2008; Wondolleck & Yaffee, 2000), and may be effective in the Skeena context due to the historical impacts of conflict and issues pertaining to science-related work. Development of independent science-related advice could be done in a timely way without conflict interfering with progress, and would likely reduce perceived bias of advice (Wondolleck & Yaffee, 2000). This could include development of SDM models as this approach offers a useful tool that might illustrate and guide management option/trade-off discussions.

The SDM approach was explored to some degree during the SWI, although the SWI process was suspended during SDM discussions. Continued exploration of SDM in the Skeena fisheries-related context could be useful to evaluate management options moving forward. Discussion of SDM, however, would best be accompanied by clear objectives to ensure that discussion was guided (Barber & Taylor, 1990; Lachapelle et al., 2003). Regardless of approach however, discussion of fisheries-related issues in the Skeena watershed ultimately becomes one of trade-offs, therefore leadership is critical to move beyond historical impacts and ongoing conflict to facilitate discussions.

The impact of historical context and external drivers.

Interview data, document review, and survey results all indicate that a number of historical Skeena process participants demonstrated, and continue to demonstrate, defensive and reactive behaviour rather than cooperative behaviour. For example, interview and survey results showed that adversarial behaviour, conflict, and strained relationships were prevalent during both processes, and were associated with all interest groups. Contextual dynamics within which

institutions function, and external influences are important considerations to institutional sustainability (Agrawal, 2002; Stern et al, 2002). Agrawal (2002) intones how behaviours and interactions are linked with external drivers, such as economics and policy, which is demonstrated by research findings. For example, the Impacts to Ways of Life and Economic Impacts theme links altered economic dynamics and policy with adversarial behaviour and collaborative difficulties. Further, the historical contextual component of this theme demonstrates impacts related to diverse, heterogeneous interests of participants that were shown in Chapter 5 to have stimulated and propagated conflict during SWC and SWI discussions. External factors such as economic drivers and implications related to heterogeneous interests posited by Ostrom (1990) are also discussed below. Key to this discussion are themes of: diverse interests, conflict and lack of dispute resolution; behavioural issues and implications; and policy.

Based on Agrawal's (2002) discussion of the link between external factors and institutional sustainability, behaviour appears to have been a contributor to limited cooperation in historical Skeena collaborative institutions. For example, market pressures and economic drivers (e.g. reduced commercial fishing opportunities) likely influenced the perspectives of participants, as did changing populations and demographics (i.e. the aging of commercial fishing fleet), the increased recognition of environmental aspects, and new policies such as the WSP. Analysis of interview and document data clearly linked emotions such as anger and frustration with these external factors. Collaboration is, by definition in this research, an attempt to work with other parties to move forward on common interests, and an intrinsic part of this process implies compromise. External factors, combined with cumulative frustrations experienced in Skeena fisheries-related discussions over the years (including but not limited to the SWC and SWI)

appear to have had an impact on the behaviour and willingness of participants to compromise. Interview results illustrated the prevalence of historical interpersonal grievances, associated conflict, and strained relationships during the SWI. For example, interview statements such as "instead of working together to find solutions, we've now gone back to having to use more combative means…[that include]...exploring legal options and using public communications". Further, histories of interpersonal grievances and their relationship to escalated conflict and strained relationships during the SWI was affirmed by survey results, and is suggestive of diminished trust (Armitage et al., 2007; de Nooy, 2013). And "without trust in institutions, conflict replaces cooperation along fault lines where trust breaks down" (Richerson, Boyd, & Paciotti, 2002, p. 423). Together, external factors and cumulative aspects of historical interpersonal grievances suggest that ingrained historical conflict presents a substantial barrier to potential future Skeena cooperation and collaboration.

Further impeding cooperation, Ostrom spoke of self-organization of groups with vastly different interests in terms of heterogeneity in Governing the Commons (1990). Self-organization in this context requires common motivation or incentive to work together. This was not demonstrated during either process, although interview data suggested that this was most pronounced during the SWI. The motivation for many appeared to have remained focused during these two processes on participant interests rather than on collective interests. The collective knowledge and skills of these participants could have enabled them to work towards collective action, however historical conflict, and social and economic changes inhibited collective progress. While cooperative behaviour was evident at times (e.g. consensus on the 1994 fishing plan), allocation disputes appear to have commonly derailed discussions. Ongoing allocation disputes highlights an impact of divergent views among user groups and in the case of

the Skeena, divergent interests exacerbated by historical conflict and behavioural issues has presented a substantial barrier to collaboration. To address these challenges, incentives to participate are an important consideration (Gutiérrez et al., 2011).

Is Skeena River Watershed Collaboration Appropriate?

Interviews, documents, and observations at ongoing meetings indicate that historical conflict that has scarred the Skeena watershed and impacted two historical collaborative efforts remains prevalent today with demonstrations of profane language and aggressive adversarial behaviour during sector-specific meetings and multi-stakeholder interactions. These results raised the question: in the face of long-standing historical conflict, is fisheries-related Skeena collaboration appropriate? While collaborative processes in the watershed have experienced some success, collaboration specific to fisheries resources does not appear to have been an effective approach to problem-solving in the Skeena watershed historically. Further, in consideration of: 1) Axelrod's (1984) work indicating that willingness is an essential criteria for cooperative behaviour and of reciprocity; 2) there is a long-standing prevalence of a lack of willingness and commitment by many parties to cooperate or consider compromise on Skeena fisheries-related matters; 3) institutional design is historically contingent (Stern et al, 2002); 4) long-standing behavioral issues have negatively impacted communications, eroded social capital, and fractured relationships; 5) conflict remains an ongoing concern with respect to Skeena fisheries-related matters; 6) that there are times that collaborative management can fail to address conflict, and at times escalate conflict (Ebbin, 2004); 7) there is a predominant continuity of historical collaborators in current context Skeena discussions; and 8) there are times that collaboration is not appropriate (Armitage et al., 2007; Wondolleck & Yaffee, 2000), I conclude that cooperative behavior among interested groups and their representatives is currently unlikely

and fisheries-related collaboration at a watershed scale for the Skeena is not recommended at this time.

Collaborative Skeena process design lessons.

Two key challenging Skeena collaborative process design aspects were strong themes that tied numerous collaborative process design-related themes in Chapter 5 together: accountability and leadership. Rising from their predominance during interview data analysis, these topics are discussed first, and are followed by remaining collaborative process design-related topics in no particular order. Due to the interconnectivity among themes presented in Chapter 5, topics in this section are broad to demonstrate linkages among themes. Themes from Chapter 5 are clearly stated at the outset of each section to clearly link chapter topics. In addition to accountability and leadership topics, other topics pertaining to historical Skeena process design challenges that follow include: consistency of participation; the need for clear objectives; clearly-delineated representation; and funding and process timeliness.

Accountability, willingness, and compliance.

Themes from Chapter 5 that gave rise to this discussion were behavioural issues, and collaborative process and structure deficiencies. Given the contentious nature of historical Skeena collaborations and the diversity of participant perspectives, it was not surprising to find that survey participants responded with both agreements and disagreements regarding poor behaviour during the SWC and SWI. This dissertation previously provided key definitions for specific terms, and the importance of clear definitions is evident in the context of collaborative behaviour as well. The vast differences in perspectives that are evident in the fairly equal distribution of survey responses agreeing with and disagreeing with both behaviour survey statements (#'s 14 and 15) reinforces the need to clearly define what constitutes appropriate

behaviour and inappropriate behaviour in collaborative processes. Evidence of behavioural issues (e.g. adversarial comments, profanity, yelling, etc.) during both processes likely negatively impacted relationships (Axelrod, 1984; Wondolleck & Yaffee, 2000) and reduced social capital (Armitage et al., 2007; de Nooy, 2013). What defines appropriate and inappropriate behaviour may seem elementary for some, however the importance of beginning collaborations from a common understanding cannot be over-emphasized. Basic understandings set the foundation for collaboration. A clearly articulated definition of expected behaviour therefore, would be a beneficial inclusion in the code of conduct section of a TOR for potential future Skeena collaborative endeavors. It would also serve as a procedural resource for process chairs to keep discussions respectful, focussed, and participants accountable (Frame et al., 2004; Wondolleck & Yaffee, 2000).

TORs generally include some kind of behavioural code (i.e. code of conduct), and can be collaboratively developed by a group or, alternatively, imposed through a governance mechanism such as a process chair. Collaborative development approaches initiate support for implementation and future accountability, however this can be a time-consuming process (Wondolleck & Yaffee, 2000). As an alternative, the chair could introduce a template or basic draft for discussion and revise it based on group feedback.

There was evidence of accountability during the SWC in interview and survey results. Excluding five neutral/don't know responses, five out of six respondents agreed that a key to collaborative successes during the SWC was accountability in terms of their fulfillment of agreed upon process-related roles and responsibilities. This is evidence of the positive impact that work at the beginning of a process, such as having a code of conduct in place early-on for the group and leadership that supports adherence, can have. There is a linkage here to another key element

of success during the SWC: the importance of interpersonal relationships and relationship-building (survey statement 5). Nine of ten survey respondents agreed with this statement, while there was also one neutral/don't know response. Theses illustrate that historical Skeena collaborators also recognized both the importance of relationships and the utility of accountability mechanisms.

SWI Steering Committee Participants attempted to collaboratively draft a TOR during the SWI, however the editing process never concluded as agreement was never reached. This is not surprising as there was little evidence to suggest interdependence among participants, therefore "…there is little potential to identify common interests, [and] consensus building is unlikely to succeed" (Rudeen et al., 2012, p. 1016). While the SWI Planning Group did adopt a list of principles early in the process, actions of SWI participants did not appear to demonstrate compliance with many of these principles. In-depth analysis of these principles in relation to the SWI specifically could be done, however for the purposes of this study, the importance here lies in the broad relationship to lack of leadership in terms of participant accountability, resulting implications such as detrimental impacts to relationships, and reduced social capital. Based on evidence of behavioural issues during the SWI and survey agreement that behaviour negatively impacted relationships during the SWI, there is a linkage to the lack of an accountability mechanism (i.e. TOR) (Frame et al., 2004; Wondolleck & Yaffee, 2000). In light of historical conflict and ongoing competing interests among Skeena interested parties and discussions, conflict resolution mechanisms such as a TOR would appear to be critical for moving forward cooperatively in the Skeena watershed (Ostrom, 1990, 2008). Based on the findings of this research, I conclude that had leadership been present as a driver of TOR development, perhaps TOR development, behaviour, and accountability during the SWI would have looked differently.

With behavioural accountability in mind, there are times that emotional expressions can be appropriate in terms of enabling emotional release, to reinforce the depth of impact of issues, etc., as this can contribute to collaboration by enabling an understanding of other people's perceptions, interests, and values (de Nooy, 2013; Ury, 2007; Wondolleck & Yaffee, 2000). To do this in the Skeena watershed however, there is a need to elevate the level of historical interactions from personalized conduct (e.g. rude behavior, use of profane language, etc.) to respectful professionalism that can build (rather than erode) trust and social capital. Collaboration rarely results in participant groups meeting all of their objectives or interests, but respectful dialogue can result in working towards compromises that parties can accept (Rudeen et al., 2012; Wondolleck & Yaffee, 2000). A definition to guide a common understanding of acceptable behaviour, in concert with leadership that will enforce policy governing roles, responsibilities, and behaviours (e.g. TOR, Code of Conduct, accountability, etc.) would have gone a long way to addressing issues that inhibited SWI progress. As such, there may be value in investing in the skills/training of collaborative participants to enable more effective communication and potential collaboration (Frame et al., 2004; Wondolleck & Yaffee, 2000).

This discussion is followed by a significant caveat. For effective collaboration to take place, there must be an underlying willingness to collaborate, and a commitment to doing so (Axelrod, 1984; Singleton, 2000; Wondolleck & Yaffee, 2000). Without committed willingness, collaboration cannot work: lack of willingness to collaborate was demonstrated during both the SWC and the SWI with, for example, the withdrawal of the commercial sector from the SWC, and the prevalence of lobby activities that permeated the SWI.

Leadership, commitment, and incentives.

Informing this discussion are three themes: lack of incentives; lack of leadership; and facilitation issues. The SWC demonstrated that there was a different way of conducting fisheries-related discussions – a different way of "doing business", and that a multi-sector interest-based process had utility. The watershed's fisheries management situation improved by including interested parties in the room, including federal and provincial governments. The SWC was driven by DFO and while there was explicit recognition of the powers and authorities related to DFO's mandate, including the reason (objectives) for the process, numerous interview comments referred to DFO's equal standing participation as supportive of constructive discussions and solutions-based thinking.

DFO took on a clear leadership role during the SWC that was key to establishing and maintaining this process. For example, DFO communicated a clear issue/objective (steelhead interception reduction) with an alternative ultimatum if consensus was not reached at the SWC table. This ensured that the SWC table was the only place for Skeena decisions to be made (i.e. regional and political DFO support redirected Skeena inquiries back to the SWC table), which served as lobby prevention, and there was a commitment by DFO to seriously consider and/or implement SWC consensus recommendations. Together these elements demonstrate clear leadership and appeared to have created incentives to come to the table (Davies & White, 2012; Gutiérrez et al., 2011).

Unlike the SWC, the SWI was not led by an organization towards a specific problem. There was a strong intention to address a broad objective during the SWI (WSP implementation), however this process began without a specific problem or clearly defined objective. The SWI lacked: a clear issue/objective, regulatory leadership that ensured participation (i.e. political

support that prevented lobbying outside of the process), and regulatory commitment to seriously consider and/or implement process recommendations. Therefore, there was a corresponding lack of incentives to participate (Davies & White, 2012; Frame et al., 2004; Gutiérrez et al., 2011). Despite this, progress was made during the latter stage of the SWI at a technical level as the TAG demonstrated the utility of separating discussions and nesting technical work in a working group that was distinct from governance discussions (Ostrom, 1990, 2008; Wondolleck & Yaffee, 2000). Document review as well as interview data supported this with examples of TAG successes in terms of development of a science-oriented direction and prioritized work plan that enabled science-related work to be undertaken.

An additional leadership component of collaborative processes involves the work of a chairperson in terms of their ability to facilitate a process effectively. Whether formally trained as a facilitator or not, leadership in the form of a chair that can effectively facilitate cooperative work is an essential element for successful collaboration (Wondolleck & Yaffee, 2000), particularly in a conflicted environment such as the Skeena. The SWC provided evidence that facilitation in the context of skilled leadership (including facilitation and proactive planning), when combined with elements that can support collaboration such as those previously discussed (e.g. clear issue/objective, political support, and a commitment by regulators to seriously consider and/or implement recommendations), can lead to successful collaborative outcomes. The SWI experience demonstrates that when these elements were missing, the collaborative process became mired in uncertainty and failed to make timely progress.

Consistency of participation.

Representation-related issues was a theme that informed this discussion as it relates to the ability of members to participate. Participation consistency was queried through the follow-up

survey with interviewees to get a sense of whether there was a perception of inconsistent participation. Interview data suggested that this may have been a factor during both processes, although less a factor during the SWC. However, survey respondents did not agree that there was inconsistent attendance (9 out of 10 for the SWC; 4 out of 9 for the SWI). It was interesting to see survey respondents disagree with this for both processes, although much more strongly for the SWC. Taking a cautious approach to these results considering the small sample sizes, these results suggest that SWI participation may have been less consistent than the SWC.

Survey respondents also disagreed with the statement that there was a lack of participant commitment to the SWI process. Interesting to note here, is that 3 respondents selected the neutral/don't know category, 3 agreed and 3 disagreed. This is another example of the varied perspectives that has haunted Skeena processes for decades. In hindsight, the query should have been framed in terms of representative consistency in terms of consistently equitable group representation at meetings, rather than of overall process attendance. Despite this, data suggested logical linkages here. When there was a lack of incentives, there were limited benefits to engagement, attendance was a lower priority, and flowing from this was a lower commitment to the process. These deficiencies caused tension and exacerbated existing conflict, which ultimately led to participants moving away from the table.

The need for clear objectives.

Lack of a clear problem/issue/objective(s) during the SWI contributed to unfocussed discussions thereby inhibiting progress. The need for clear objectives was identified as critical throughout the SWI, yet little progress was made toward defining objectives that could guide the process in a strategic or operational sense outside of science-related work conducted through the TAG. In addition, the lack of clear SWI objectives contributed to hesitancy for DFO to commit

to serious consideration of SWI process outcomes, which further undermined participation. Essentially, participants need to feel that there is value associated with participation, and the lack of a firm commitment by DFO to consider SWI outcomes contributed to reduced incentives to participate.

Clearly-delineated representation.

Representation was a topic that dominated many SWI discussions, particularly in terms of how to establish equitable participation of interest groups (i.e. the number of seats at the table associated with specific interest groups) and in the context of public involvement. Discussion of the latter point was influenced by a broadening interest in watershed issues since the time of the SWC (Conn, 2011) and the corresponding attention put to seeking public involvement (SWI, n.d.e). Interview data and document review demonstrated that the SWI initially involved the public, however the scope narrowed over time to one of sector representation. Interview data and document analysis emphasized difficulties associated with organizing participation and soliciting/organizing/responding to feedback, particularly as there was a need for common understandings that related to technical, specialized topics. The SWI took the approach of an invitational public involvement forum called Congress, but only two were held (in 2008 and 2009) and it is unclear how the participant list was developed. Interview data indicated that the shift in focus away from public participation was a contributing factor to the withdrawal of some participants, as public involvement was extremely important to some participants. Considering it is difficult to establish manageable public processes (Lachapelle et al., 2003) and that knowledge of a representative body structure has been associated with incentives for participation (Wondolleck & Yaffee, 2000), consideration of public participation at the outset of a process is advisable to avoid unresolved representation issues.

Key aspects such as the number of representatives for each interest group (Frame et al., 2004; Pinkerton, 1994), the potential for identification of alternates, roles and responsibilities (a defined constituency, communication with constituents, dissemination of information and collection/collation of feedback), and details of a representative selection process need to be considered during TOR development (Wondolleck & Yaffee, 2000). Leaving these issues outstanding, as occurred in the case of the SWI, led to long-standing repetitive discussions, ongoing frustration, and uncertainty. The dominance of representation-related discussions during the SWI, as documented in meeting summaries as well as in participant interviews, demonstrated that representation discussions need to be addressed early on in a process, so that there is clarity for those within the process. In addition, for processes to be effective, discussion and decisions need to be supported by clear accountability, otherwise, as the SWI demonstrated, uncertainty, frustration, and friction can result.

Representation in the Skeena context also includes a number of First Nations as "the Coast Tsimshian, the Canyon Tsimshian, Gitxsan, Wet'suwet'en, and Ned'u'ten [Lake Babine] peoples occupy the Skeena watershed" (Gottesfeld & Rabnett, 2008, p. 43). During both the SWC and SWI, document analysis and interview data showed that First Nation participation was intermittent and varied, which was noted in interviews as a factor that made meaningful discussions difficult as all interested parties were not at the table. However, in respect of the unique relationship that First Nations have with government, and uncertainties as to how those relationships will continue to evolve, it is up to First Nations in the interim to decide on whether they will participate, and on how they choose to engage if they do decide to participate in collaboration with multiple interest groups (i.e. what context/issues are within the realm of discussion topics?). For example, how First Nation(s) might decide to engage, what role they

would take, whether they would distribute information to member nations and/or members, and on whether they might provide feedback to the process are important aspects to clarify. In the case of aggregate First Nation representation, questions have been raised in the past by historical collaborative process Skeena participants, including DFO representatives. For example, questions about how information was disseminated to aggregate body First Nation members and their communities; how information/feedback was collected and channelled back into processes, and whether feedback/representative perspectives represented aggregate perspectives or specific member nation perspectives when involved in governance discussions.

While it may be frustrating to have these questions remain outstanding, resolution of these questions will likely evolve along with the evolving relationships among nations and regulators. Unresolved aboriginal rights and title issues as well as government's legal obligation to consult with First Nations clearly illustrates the need for fisheries-related decisions to be considered in the context of First Nations (*Constitution Act*, 1982; DFO, 1999). And as rights and title issues are resolved, there will likely be more certainty with how First Nations will engage in a collaborative context. In the interim, inclusion and information sharing as much as possible would be beneficial to building relationships among interested parties (Westley et al., 2007). It would also be helpful to include a clause in the TOR, similar to the one in the SWC MOU, which protects First Nation's section 35 rights if they choose to participate, as this might encourage and support First Nation participation.

Funding and process timeliness.

It is well known that funding is an important element of successful collaborations, although the source of funding needs to be carefully considered as there are associated power implications such as perceptions of influence over participants and of the process. Perceptions

around SWI funding highlight the need to be conscious of funder interests, associated values, and power dynamics implications reported in Chapter 5. Power differences within collaborative processes can cause conflict and ultimately threaten the process (Frame et al., 2004). As a result, it is important to address possible perceptions or the reality of possible funding implications (including power dynamics), so that these can be neutralized and process objectives remain the focal point of collaborative work. For example, explicit recognition of perceived/potential power dynamic impacts would be a first step in disabling their ability to influence discussions and derail process discussions (Wondolleck & Yaffee, 2004). This could be captured in a TOR to support neutrality via explicit transparency of funding. This approach could prevent funding source-related discussions from precluding timely progress towards process objectives, recognizing that what constitutes timeliness will be different for every process.

Linkages among Skeena Lessons

Drawing on initial NVivo analysis and results, data were revisited to explore interdependencies in the context of the research goal to develop practical recommendations to support effective fisheries management collaboration in the Skeena watershed. As previously noted, leadership and accountability were the most prominent themes reported by respondents in the context of process design. Described throughout this chapter thus far, interdependencies among these and other themes are evident. The model in Figure 4 represents the culmination of this analysis through the lens of existing collaborative process design knowledge presented in Chapter 3 in a Skeena context. As such, the cooperative Skeena leadership model posited in Figure 4 provides an illustration of how themes discussed in this chapter could work together to address historical collaborative process design deficiencies and respond to Skeena lessons.

Figure 4. Leadership model for Skeena cooperative work

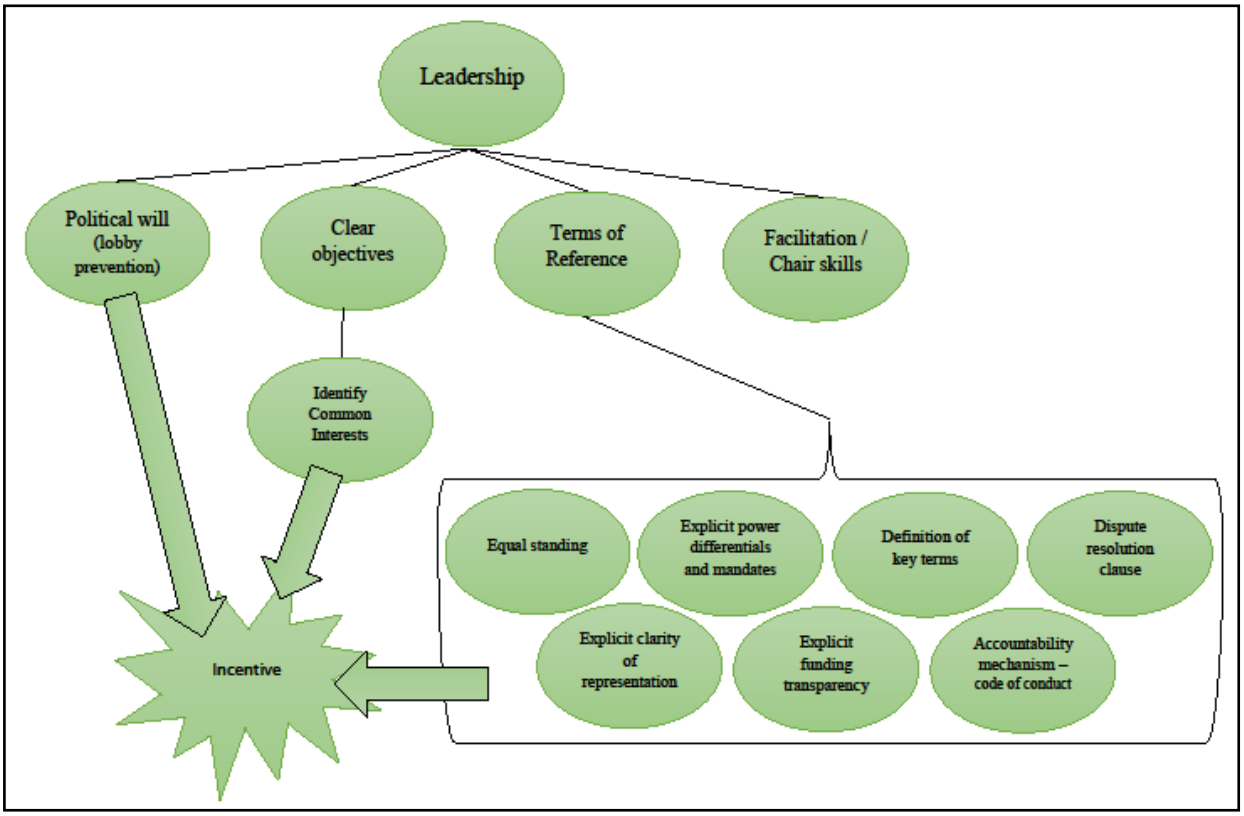


Figure 4. This leadership model for cooperative work was developed during reflective analysis of research findings as a way to visually demonstrate interconnectedness of key collaborative process design themes in the context of historical Skeena watershed fisheries-related collaboration. As such, the cooperative Skeena leadership model posited here provides an illustration of how themes discussed in this chapter could work together to address historical Skeena collaborative process design deficiencies and lessons learned. In addition to elements identified in this model, other aspects such as willingness to cooperate, respectful communication, etc. remain important components of successful collaborative efforts.

This model illustrates key collaborative process design findings related to historical Skeena processes. Additional aspects discussed in Chapter 3 such as representative participation, respectful communication, etc. remain important components of successful collaborative efforts. Additionally, this model is presented with consideration that there must be willingness by interested parties to participate and entertain the possibility of compromise (Axelrod, 1984;

Singleton, 2000; Wondolleck & Yaffee, 2000), otherwise, collaboration may not be appropriate (Armitage et al., 2007; Wondolleck & Yaffee, 2000). The figure was developed to provide a visual representation of interconnectedness of concepts identified during data analysis. This may be a useful aid for understanding research recommendations as thematic linkages informed recommendations presented in Chapter 7, and may also prove useful to practitioners.

The four key principles linked to leadership in the model, derived from interview data, are political will, clear objectives, a TOR, and facilitation/chair skills. While it may appear at first to be a simplistic model, complexity lies in the interdependence of its principles. This model does not suggest that these are the only leadership characteristics required for effective collaboration, however it does highlight these components, or principles, as essential support for collaboration in the Skeena context. The Skeena experience has shown that when these principles were not in place, Skeena cooperative endeavors met insurmountable challenges. The following paragraphs summarize the linkages described in preceding sections among the four key ingredients (political will, clear objectives, a TOR, and appropriate facilitation and/or chairing skills) and their supporting components. What binds them together is how they work in concert to provide incentives to participate, which serve as a stimulus for ongoing willingness and commitment to cooperative undertakings.

This leadership model for cooperative work indicates that leadership must be supported by the political will to commit to ensuring lobby efforts (as earlier defined) are sent back to the collaborative table, and must include an explicit commitment that collaborative advice will be seriously considered and clarity of how it will be considered. Without political will to redirect parties who attempt to lobby outside the process back to the table, processes can be undermined

(Wondolleck & Yaffee, 2000), as was shown during both previous Skeena processes. The SWC demonstrated that when political will was present, there was an incentive to participate.

Clearly defined objectives serve to guide processes (Lachapelle et al., 2003) and guide decisions around who needs to be included so that processes involve appropriate representatives (Wondolleck & Yaffee, 2000). The SWC demonstrated how important a clear objective is in terms of working together as DFO's ultimatum/objective provided an incentive to participate, while the SWI demonstrated how damaging lack of clear objectives can be. Clear objectives are also an important part of whether participants identify with the collaborative processes purpose (Barber & Taylor, 1990). Optimally, participants will be able to identify common interests through discussion of process objectives. Common interest development provides further incentive to participate, as there is an understanding of how process objectives relate to, and respond to, participant interests.

A clear terms of reference sets a process up for success (Frame et al., 2004), and the Skeena has shown that certain aspects are keys to making progress. For example, setting a process up with equal standing is an explicit way to proactively address power dynamics among participants as a way to 'level the playing field' (Wondolleck & Yaffee, 2000). This is supported with the explicit recognition of power differentials in the TOR in terms of participants and their associated mandates (e.g. regulator mandates), as well as clearly defined representation (e.g. membership and representative selection). In addition, a clause in the TOR that outlines a process and roles and responsibilities for dispute resolution is important, so that there is a clear avenue to resolve disputes should they arise (Ostrom, 1990, 2008). These four TOR components provide a basic structure to support cooperative work, which are augmented by three additional components that support common understandings. These include explicit disclosure of funding

sources to neutralize perceptions of funding influence, definition of key terms to prevent misunderstandings, and accountability mechanisms that can support respectful interactions. Based on learning from the Skeena processes, this approach to TOR development provides structure, clarity, and accountability that can serve as an incentive to cooperative participation.

Facilitation/chair skills are what draw the other three elements together, as without effective leadership in the meeting context, structure and process elements cannot logically lead to effective collaboration. Appropriate facilitation and/or chair skills provide accountability support for TOR implementation, and to ensure that meetings are planned, held and followed up on in an effective way (i.e. agenda development, meeting organization, distribution of meeting materials, etc.) (Wondolleck & Yaffee, 2000). Drawing on lessons from two historical Skeena fisheries-related collaborative processes, this model suggests that together, political will, clear objectives, an explicit TOR, and appropriate facilitation and/or chairing could provide a solid foundation for an effective cooperative Skeena process.

There are likely varied degrees of impact if any of these principles were lacking for a time. Based on historical Skeena experiences, however, if any of Figure 4's key principles or supporting components are missing or not enforced, cooperative Skeena work would likely be undermined. And while collaboration may not appear to be appropriate for fisheries-related discussions in the Skeena at this time, this model may inform ongoing discussions in the watershed. Key learning points from this chapter's discussions are summarized in the following table (Table 3) to provide a quick reference guide.

Table 3. Summary of SWC and SWI Lessons

Topic	**Lessons**
Strong leadership	Leadership includes: the ability to provide incentive to participate; early development of a TOR; adherence to accountability mechanisms (e.g. TOR); effective procedural facilitation (e.g. meeting pre-planning and follow-up, adherence to agenda topics and meeting timeliness); and representation delineation (develop cooperatively when able). Leadership must also involve facilitation and/or chairing skills that can support dialogue in the face of conflict and disagreement, and enable enforcement of accountability mechanisms.
Objectives	Collaborative processes must be established with clear objective(s). This will provide guidance for determining appropriate representation and incentive(s) to participate.
Explicit definitions	Support common understandings with clear definition of key terms in a TOR, such as: collaboration, lobbying, appropriate behaviour, respectful communication, etc.
Representation	Representation should be determined and clearly documented (i.e. in a TOR) at the outset of a process prior to beginning to address objectives-related work, and include: • Definition of constituency; • Role and responsibilities to constituency; • Details for a representative selection process; • Identification of the # of representatives to sit at the table for each interest group/sector; • Identification of alternates to ensure opportunities for all groups to be represented; and • Explicit language to support First Nation participation that respects s. 35 rights and encourages participation.

Topic	Lessons
Political will	Collaborative processes must include: 1) a clear commitment to the collaborative process by the process convenor that includes explicit commitment to direction of any lobby attempts back to collaborative table; and 2) clarity of how collaboratively developed advice will be taken into consideration by process convenor/regulatory agencies/etc. (include explicitly in TOR).
Accountability	Expectations of appropriate behaviour must be explicit and documented (i.e. in a TOR) and involve an accountability mechanism, for example, have clear associated repercussions for non-compliance (i.e. incentives for compliance).
Funding	Ensure that funding is transparent and neutralized (i.e. include clear details in TOR).
Dispute resolution	Include a clause in the TOR to clearly outline a process, roles, and responsibilities for dispute resolution.
Transparent power dynamics	Address power differentials by explicitly stating in TOR that parties are participating with equal standing and include language in TOR that makes individual mandates explicit where appropriate (e.g. regulators).

With consideration of the above findings, key issues that emerged from interview data were revisited.

Key Issues

Key issues that contributed to collaborative challenges included: access and allocation, increased First Nation fishery access, the growth of the recreational fishery, harvest planning, steelhead and data issues, knowledge inequities, and recreational fishing practices. Issues relate primarily to fisheries management access and allocation debates rather than collaborative process design elements, which caused them to be initially viewed as beyond the scope of this work.

However that assessment changed as I struggled with how to create practical research outcomes in light of my conclusion that Skeena salmon watershed-based collaboration is not recommended at this time. Building on the fisheries management-centric aspect of key issues, and contemplating the DFO's harvest planning committee already in place (the IHPC), the connection was made that learning from Skeena experiences could be applied within an existing salmon fisheries management and harvest planning context. This approach respects the recommendation that watershed scale collaboration for Skeena salmon is not recommended at this time, yet would enable application of research findings at a collaborative governance level. This would enable application of Skeena collaborative process learning while also responding to all but one key issue identified during data analysis. This one issue, recreational fishing practices, has been the subject of cooperative work among affected parties and this issue is therefore not addressed further in this work.

A recommendations chapter follows that integrates learning discussed thus far into a framework that might support a collaborative governance arrangement inclusive of provincial and federal governments and First Nations as an adjunct to the Pacific Salmon IHPC process, to develop independent Skeena-specific science-related advice for discussion at the IHPC. The suite of recommendations in Chapter 7 is made in the effort to provide practical advice that applies lessons learned from historical Skeena processes in the current context. This path is recommended in order to take advantage of an existing process, and is supported by Wondolleck and Yaffee's (2000) assertion that adjunct processes can provide useful avenues that can complement conventional decision-making processes. The proposed approach also responds to historical inter-governmental frictions, inter-jurisdictional issues (i.e. steelhead management), and First Nation governance-related considerations while it also responds to the Relationship and

Reconciliation theme identified in the First Nation Leadership Council's Action Plan (2006). In addition, it provides an opportunity to encourage social learning (Armitage et al., 2007; Pinkerton, 1994; Plummer & FitzGibbon, 2007) at a governance level in the WG as well as at the IHPC; with the long-term goal of more successful collaborative Skeena endeavors.

In Summary

The mixed methods case study approach taken with this research enabled the collection, analysis, and discussion of rich data in a reflexive process of inductive reasoning. It also enabled the examination of the historical SWC and SWI processes in a way that drew multiple perspectives and contexts into this research and its outcomes. This approach enabled deep understanding of successes and challenges associated with fisheries-related collaborative processes, and has informed conclusions and practical recommendations intended to support more effective communication, conflict resolution, and cooperation in the Skeena watershed. Recommendations made in this chapter are described with more detail in the following chapter. The layout of Chapter 7 was developed with the intention of providing operational tools to practitioners, and includes summary tables of research conclusions as well as recommendations.

Chapter 7: Recommendations and Concluding Thoughts – Building on Lessons from the Skeena processes

Based on the findings of this research, the following chapter provides recommendations to address key historical long-standing Skeena-related issues as well as collaborative process design issues in a current context. What follows are recommendations for a cooperative tri-party governance approach, inclusive of provincial and federal governments and First Nations, that can support the development of independent advice to address Skeena-specific science and management-related questions as an adjunct Working Group (WG) of the DFO's Salmon IHPC. This recommendation is supported by the assertion made by MIT Professor Lawrence Susskind that collaborative approaches are supplemental to, rather than alternatives to, normal decision-making processes (Wondolleck & Yaffee, 2000). The recommended approach involves governance options that are responsive to First Nation and regulator considerations identified and discussed in this dissertation.

Opening this chapter is discussion of the utility of this cooperative governance approach, identification of potential benefits and limitations associated with the approach, the need for IHPC TOR revision, and clarification of intergovernmental relation aspects that could contribute to relationship-building. Following this, recommendations are made with respect to technical representation at the WG, WG advice development, science and management-related question development, and other operationalization aspects that are important such as work planning and performance measurement using SMART objectives. A proposed WG governance structure and incentives for prospective cooperative governance 'partners' are then outlined. Drawing this chapter's content together, a collaborative process design framework to support cooperative

Skeena WG discussions that builds on the cooperative Skeena leadership model posited in Figure 4 is offered.

Recommendations were designed with considerations that: contextual factors change over time, funding constraints exist and will likely continue to exist, and that explicit yet flexible recommendations provide a more robust research outcome than a highly prescriptive approach.

Cooperative Governance and Leadership: The Utility of a Salmon IHPC Working Group

"Ultimately, we must understand what works and what does not, and craft hybrid processes that employ the most productive characteristics of traditional structures while incorporating the significant benefits of collaborative processes" (Yaffee & Wondolleck, 2003, p. 71). Recognizing the earlier assertion that fisheries-related collaboration at a watershed level for the Skeena is not currently recommended and that key watershed issues revolve around fisheries management-related topics, discussions could be effectively linked to an existing process, the IHPC, as an adjunct process. I recommend a collaborative governance WG be created to facilitate development of independent science and management-related Skeena advice for consideration at the IHPC. This governance arrangement is not currently reflected in the current IHPC structure, nor is development of independent science-related advice part of the IHPC mandate. It provides an opportunity to apply research findings in a limited scope to increase the likelihood for success (Ostrom, 2002) that is sensitive to impacts and implications of historical Skeena conflict, including the trepidation expressed by some research participants that questioned the utility of participating in future Skeena collaboration.

The IHPC is an established DFO-led consultative process with a harvest planning mandate that feeds into annual planning cycles of Pacific fisheries management that include the Skeena watershed. "The IHPC is the primary contact for the Department for cross sectoral

communication and advice, and makes recommendations to the Department on operational decisions related to salmon harvesting in the Pacific Region. The goal of the IHPC will be to ensure fishing plans are coordinated and integrated, identify potential conflicts, and if there are disputes, make recommendations for solutions if possible" (DFO, 2005b, "*Mandate*", para. 1).

Further, the IHPC includes representatives from commercial and recreational sectors, includes conservation interests, and invites participation of First Nations. This is important as fishers will likely be more accepting of harvest plans if they participate in the planning process (Pinkerton, 2009a). Convened to contribute to operational decision-making, the IHPC is a forum that could support a WG that could focus on Skeena watershed-specific issue(s) with its own TOR and provide Skeena-specific advice to the IHPC. Building on my finding that collaboration at a watershed scale is not recommended at this time, I recommend collaborative WG governance that is limited to federal and provincial governments and First Nations in the effort to apply Skeena lessons and address key Skeena fisheries management-related issues identified within this dissertation.

Benefits and drawbacks of this approach are considered in the next section. First however, is an excerpt from Jones (2006) pertaining to legitimate collaborative governance written for the First Nations Marine Society. As of the 2006 paper by Jones, "the First Nation Marine Society currently has 26 First Nation members out of a possible membership of approximately 25 in Georgia Strait, 11 in Johnstone Strait, and 14 on the West Coast of Vancouver Island" (p. 59). In his 2006 paper, Jones was supportive of building on existing structures in a way that might also support First Nation participation, which is additional support for relationships and reconciliation advocated for with the First Nation Leadership Council's

Action Plan (2006), both of which suggest further support in principle for an adjunct governance-based WG of the IHPC from a First Nation perspective.

> "The main lessons are that it is wise to build on existing governing structures if these exist. These can provide legitimacy for a new structure. If these do not exist then it is essential for new organizations to define a clear purpose and take time to develop these structures. A sense of purpose is necessary to engage members and provide concrete and long-lasting incentives to participate with the expectation of future rewards" (Jones, 2006, p. 59).

A Salmon IHPC Working Group: Benefits and Drawbacks

There is utility in the proposed IHPC WG approach for a variety of reasons. For instance, it would be beneficial to enable discussion and potential progress on watershed-related issues in the short term as the IHPC process is already established. Progress might then lead to reduced conflict over watershed-related issues, and might support rebuilding of relationships among interested parties (i.e. building social capital) over a longer term, which supports the potential for a more collaborative approach in the future. In addition, linkage of discussions at the IHPC to the Pacific context supports cross-scale institutional linkages within and among governments (i.e. area and regional staff, and provincial and federal regulatory agencies), as well as among First Nations, organizations and interest groups. Cross-scale linkages enable communication that can lead to increased common understandings and long term conflict resolution, while supporting relationship-building that might increase social capital and hold the potential of social learning (Berkes, 2002). In addition, the IHPC structure currently includes the majority of the Skeena's interested parties at that table, therefore would likely result in funding and time efficiencies when compared to time and cost investments associated with initiating a

free-standing collaborative watershed group. An exception is non-governmental organizations, which are represented at the IHPC solely through the MCC at present, although this environmentally-oriented body does represent a number of non-governmental organizations. Convening a WG in an IHPC context also provides an opportunity to avoid repetition of conversations (this occurred while the SWI was in operation, as some discussions were held both at SWI meetings and at IHPC meetings).

The IHPC provides a strong, established foundation that could enable cooperative Skeena discussions and independent advice development. Independent Skeena advice development facilitated by a collaborative governance WG could: enable advice 'buy-in', address issues, and reduce conflict. The independent advice is an important point to emphasize (discussed later in this chapter), as separation of science-related work from decision-making processes reduces perceptions of decision-making bias and/or favoritism (Wondolleck & Yaffee, 2000). This is particularly important in consideration of claims that historical Skeena collaborative participants perceive the IHPC process as "…a highly politicized forum in which groups focus on positioning rather than on cooperation and compromise..." (Pinkerton et al., 2014, p. 3). Modifications to the IHPC TOR could respond to recommendations in this chapter and could formalize a WG as a form of commitment to the process (Wondolleck & Yaffee, 2000).

A drawback of this approach is that there could be issues that arise from the non-representative aspect of WG membership. The Skeena case studied during this research, however, showed that historical conflict, behavioural issues and strong personalities are not currently conducive to collaboration. In consideration of these issues and of 2008 ISRP recommendations pertaining to provision of independent science advice, there is a strong foundation for supporting a non-representative process for technical and science-related advice

development in the Skeena watershed. There is however the argument that science-related advice could be provided through DFO's Canadian Science Advisory Secretariat (CSAS) processes. CSAS coordinates review of scientific issues and advice for DFO such as "reports on the status of fish, invertebrate and marine mammal stocks, environmental and ecosystem overviews, research documents featuring detailed scientific information…" (DFO, 2014*a*, Canadian Science Advisory Secretariat (CSAS), para. 2). Vast competing priorities for Pacific CSAS work, such as Species at Risk-related work, make this option an unlikely avenue for development of science-related Skeena advice in the near future however.

Salmon IHPC Terms of Reference

A note that must be made regarding the IHPC, is that this advisory process is led by DFO and is therefore subject to A Policy to Govern Pacific Region Advisory Bodies (2004). That document requires establishment of a TOR that is subject to periodic review. The TOR established for the IHPC dates back to May 2005; ten years ago. It should be ascertained whether the IHPC TOR has been formally reviewed and if so, this should be noted on the website to demonstrate transparent accountability, as these are two tenets of the 2004 policy. Further, should recommendations of this research be adopted regarding establishment of an IHPC Skeena Working Group, the TOR will require additional terms that encompass this subcommittee. In addition, the TOR may benefit from knowledge gained since 2005 and therefore review and advice by an independent subject matter expert would be of benefit, as it would enable drawing new knowledge and expert opinion into an official IHPC TOR review process.

Intergovernmental Relations

The economic study of the Skeena completed in 2008 indicated that communication issues between DFO and the province have contributed to continued advocacy and conflict (Counterpoint, 2008). In the interest of addressing this tension, recommendations include the ideal of a renewed relationship between the Province of BC and DFO. While progress has been made at a technical level between the federal and provincial governments, the recently drafted steelhead provincial management plan that was drafted in the absence of collaboration with DFO is evidence of the disconnect. Overlapping jurisdictional issues discussed previously are indicative that collaborative provincial/federal development of provincial management planning tools as well as federal management planning tools would be beneficial. Collaborative provincial federal management planning tool development would likely serve several purposes: improved intergovernmental relationships, identification and clarification of common ground, and streamlined work (particularly on science-related questions that pertain to inter-jurisdictional issues such as steelhead). In essence, it could enable development of a strategic approach to cooperatively addressing federal and provincial objectives, which responds to the Province's recent draft steelhead management framework that identified a next step as "…work with federal partners to develop a joint steelhead management objective in federal Integrated Fisheries Management Plans…" (FLNRO, 2015, p.15).

The WG governance mechanism proposed in this work includes provincial representation, as some interviewees indicated that DFO regulator authority and provincial jurisdictional issues historically impacted the efficacy of collaborative discussions in the Skeena watershed. As a result, there is value in holding federal/provincial discussions prior to meeting in an IHPC WG context to strengthen intergovernmental relations and clarify a strategic way

forward; this would likely serve to streamline WG discussions. Recognizing that there will likely be times that discussions do not relate to a provincial mandate, governance discussions can work out how attendance at relevant meetings could be coordinated strategically to be efficient and respect respective resource constraints.

First Nation WG representation opportunities are also recommended and there may be similar value in tripartite discussion opportunities with First Nations prior to convening a WG, as governments hold a unique governance relationship with First Nations (*Constitution Act,* 1982). As such, First Nation participation in the WG presents a proactive option that could precede resolution of First Nation rights and title uncertainties and supports building relationships in support of the Relationship and Reconciliation theme advocated for in the First Nation Leadership Council's Action Plan (2006).

Inclusion of provincial and federal regulatory agencies and First Nations in a governance structure would be ideal, although this hinges on whether each might choose to participate. This is further discussed, along with incentives for each prospective governance 'partner', in the Proposed Salmon IHPC Skeena Working Group Governance Structure section of the chapter.

Technical Representation

This work proposes a technical WG body that can be brought together on an as-needed basis rather than on a permanent basis, as an ad-hoc body that can respond to issues as they arise. In terms of technical membership, I refer to the 2008 ISRP suggestion that "it is important that [technical experts] are not given a mandate to represent specific organizations and promote their interests. Instead, [technical experts] must hold themselves to the highest scientific standards in all deliberations, free from politics and special interests" (ISRP, 2008, pp 11-12). This is consistent with literature presented in Chapter 3 regarding leadership and benefits associated

with independent science-related advice. Onboarding of technical experts would do well to involve an application process, and appointment by the tripartite governance WG on an as needed, case-by-case basis. Technical expert selection is recommended to be based on the alignment of skills and experience with WG objective(s) and questions/problems of inquiry (i.e. science and management-related queries).

Independent science experts would likely make inroads towards IHPC members accepting the credibility of WG advice, and similarly, would supporting decision-making based on WG advice. A funding consideration is that technical experts may require funding to support their participation, which could be forecast annually based on WG objectives and work planning projections. In addition, it is hoped that the IHPC would contribute to WG objective and science-related question development by participating in the process of WG question development (see Operation section of Table 5).

Advice Development

Similar to the current IHPC approach, consensus is not advocated in terms of development of Skeena-related advice at a WG or IHPC level, although the findings of this dissertation support advice based on consensus when possible. In instances when unanimous agreement is not reached, the majority view should be captured and dissenting views recorded, all of which should be provided in a briefing note (e.g. 2-pager) to the IHPC for consideration. This approach supports communication of all WG views at the IHPC table. A briefing note approach also enables decision-makers to better understand discussion points and various options, while informing decision-making in a representative way. As WG advice may not be relevant to main IHPC board discussions, distribution of advice should be communicated to the northern IHPC and considered at that level to determine if broader distribution and discussion

might be appropriate. It is anticipated that this IHPC-based approach could address Skeena watershed and science-related issues that remain outstanding (as identified during this research), identify and address knowledge gaps, and respond to emerging questions.

Science and Management-Related Questions

While the focus of this research has been on collaborative process design, there is utility in also approaching science and management topics. The intention here is not to suggest an opinion on management, however in the spirit of providing as many tools as possible as practical outcomes of this research, I briefly follow this train of thought in terms of SDM as this was a thread related to SWI discussions that deserves attention.

As noted by Gardner (2009), "shared analytical methods—or "decision support tools"—have much to offer in integrating knowledge frames. While these tools typically require expertise in their application, they can provide a strong foundation for communication among parties with different ways of knowing" (p. xii). Although she did go on to note that "…in the case of science in general, however, the power, accuracy, and status of these tools among other modes of information sharing should not be overestimated" (p. xii).

Tools such as SDM have been discussed for years in Skeena fisheries discussions but this approach has never gained acceptance. A reason that emerged from interview data linked this lack of acceptance to science debates around data issues such as study design, data quality, and interpretation of results, and on how differing perspectives on these issues might impact SDM modeling and associated trade-offs. SDM was seen by a few interviewees as a force-fit approach to working through issues, so it's important to have a discussion that seeks to find out if and how it might be useful as interview data suggested that it was never fully discussed during the SWI. This tool is an option that might serve as useful approach to overcoming knowledge inequities in

the sense that prior to holding SDM trade-off discussions, a workshop could be held to bring WG and IHPC members to a common understanding of the SDM approach, modeling, associated terminology, etc. This would enable more efficient development of advice at the WG level while enabling better understanding during discussions of WG advice at the northern IHPC level, and would also likely streamline any subsequent operationalization by regulators.

Operationalization

The 'front-end work' that went into bilateral discussions and meeting preparations contributed to the effectiveness of historical Skeena collaborative meetings. This is something to consider as a focus for any cooperative process. Just as cooperative processes require thorough planning/preparation in terms of design, implementation activities (operationalization) require a similar level of methodical preparation to aid in the effectiveness of meetings and outcomes. In terms of implementation, work planning must be done to clearly link work with measurable process objectives (i.e. SMART objectives), and should include performance measurements so that progress can be measured and tracked (Pinkerton, 2007, p.165).

There are various nuanced versions of what SMART stands for, however versions retain a very similar meaning overall. SMART objectives in this dissertation means: Specific, Measurable, Achievable, Results-Oriented, and Time-Bound. Objectives must be specific so that there is a clear understanding of what is going to be done; they must be measurable so that progress can be tracked over time; they must be achievable in the sense that they are realistic; they must be results oriented so that they focus on outcomes that can respond to goals; and they must have timelines so that accountable progress can be made and tracked. This SMART approach supports work planning that can clearly link activities to objectives thus enabling progress to be measured and tracked while it also enables learning as the WG evolves, and

enables learning to feed into a cycle of learning and adaptation. This adaptive cycle should be articulated in the TOR, and contain information regarding the review cycle timeline and review process roles and responsibilities. To promote accountability, work planning should also include explicit member responsibilities, timelines, and deliverables.

In addition, some 'front-end work' by WG participants would also be helpful. Participation with conscious attention to an open mind would make discussions more constructive, and perhaps less defensive (Isaacs, 1999). Coming to the table and participating without preconceived ideas would enable creativity and innovation to come forward, which can facilitate compromise (Ury, 2007). Further, bringing active listening skills to the forefront of interactions would likely go a long way to smoother discussions that enable participants to hear others and to truly consider their perspectives and ideas. Human interactions are the key to moving forward with cooperative discussions and relationships are essential to cooperative progress, therefore discussions need to focus on issues and not on people.

Proposed Salmon IHPC Skeena Working Group Governance Structure

Table 4 outlines potential governance 'partners' identified earlier that that could support a cooperative Skeena WG process designed for discussion of Skeena fisheries-related issues. Incentives for potential governance 'partners' to participate in the proposed IHPC and WG approach have been discussed throughout this chapter, and are summarized in Table 4. Incentives encompass conflict resolution, inclusive representation, independence science-related advice, 'nesting' the WG in the existing IHPC process, cooperative inter-jurisdictional work, strengthened relationships, respecting aboriginal rights, and bringing First Nations perspectives to Skeena fisheries-related discussions. This table is intended as a quick reference guide as an implementation support tool. Elements included address specific issues that impacted the

effectiveness of historical Skeena fisheries-related collaborations discussed in Chapter 6, as well as leadership principles illustrated in Figure 4 and key Skeena learnings summarized in Table 3. As contextual factors continue to emerge (such as international considerations, evolving policy, clarification of First Nation rights, etc.) additional considerations may become necessary. As such, the suitability of proposed options may change over time.

Table 4. Proposed IHPC Skeena Working Group: Governance 'Partner' Incentives

Governance 'Partner'	**Incentive**
Federal: DFO	• Responds to long-term conflict that relates to fishery resources in the Skeena watershed. • Enables Skeena fisheries-related discussion in a process that links with an inclusive, representative forum for discussion and feedback at nested levels (northern IHPC, and regional IHPC board) that directly informs the northern salmon IFMP. • A science-based process with technical expert members recognizes that knowledge and science are essential for moving forward with many fisheries-related discussions, including previously identified knowledge gaps in the Skeena. • Depoliticizes discussions to reduce conflict and facilitate efficient development of independent advice that can enable 'buy-in' from Skeena interested parties and resolve issues in the long term. • Supports relationship-building with First Nations and the Province of BC. • Opportunity to include consideration of varied forms of knowledge, such as ATK and LEK, in Skeena science-related discussions and advice development.

Governance 'Partner'	**Incentive**
	• Supports collaborative science-related work that might inform steelhead management. • Efficient use of an existing process, therefore it has a low cost to implement and therefore provides an opportunity for efficient use of public funds. • Symbolizes moving beyond historical challenges and embracing cooperative inter-jurisdictional work. • Enables moving forward on inter-jurisdictional issues such as steelhead.
Province of BC – Ministry(s) TBD during bilateral discussions	• Symbolizes moving beyond historical challenges and embracing cooperative inter-jurisdictional work. • Enables moving forward on inter-jurisdictional issues such as steelhead. • Supports collaborative science-related work that might inform steelhead management. • Opportunity to consider varied forms of knowledge, such as ATK and LEK, in steelhead discussions and management. • Provides an opportunity to strengthen relationships with DFO and with First Nations that also responds to The New Relationship (2005).
First Nations in the Skeena watershed	• Opportunity to strengthen relationships with DFO and the Province of BC in alignment with the BC First Nations Fisheries Action Plan (2006) and The New Relationship (2005). • Symbolizes moving beyond historical challenges and embracing cooperative discussions that respect aboriginal rights protected under the *Constitution Act* (1982). • Enables discussion of implications of inter-jurisdictional issues on Skeena First Nations.

Governance 'Partner'	Incentive
	• Opportunity to share and consider varied forms of knowledge, such as ATK and LEK, in Skeena science-related discussions and advice development. • Brings a First Nation perspective to Skeena fisheries-related discussions in a governance capacity.

As noted, WG governance depends upon the willingness of governance 'partners' to participate in moving Skeena fisheries-related discussions forward in this context. The optimal governance arrangement would include federal and provincial governments and Skeena watershed First Nations, as inclusion of noted parties would likely streamline discussions and lead to advice that is proactively responsive to jurisdictional mandates and First Nation interests. In the absence of some parties, the proposed WG could be modified to provide independent advice, however a modified approach would not be optimal and is not recommended.

This proposed approach is an opportunity to apply historical Skeena lessons in a way that enables development of independent science-related Skeena knowledge through the WG, and subsequent discussion at the IHPC table (which includes sector representation of groups that were involved in historical Skeena collaborative discussions, who continue to participate in ongoing Skeena-specific discussions). The recommendation to utilize the existing IHPC process to establish an adjunct WG provides the ability to develop independent information and advice on watershed issues recommended in the ISRP (Walters et al., 2008). As noted below in the summary table of recommendations (Table 5) that builds from key Skeena learning summarized in Table 3, cooperative development of issues and technical questions between the IHPC and the WG is recommended as this approach would serve to establish an interactive element of question

development to support appropriate technical work and buy-in of technical outcomes at the IHPC. In addition, Table 5 makes specific yet flexible recommendations regarding leadership, regular commitments, representation, the need for clear SMART objectives, TOR content, operational guidance, information sharing, and learning opportunities. Each recommendation was drawn from the findings of this research and developed in alignment with existing knowledge discussed throughout this dissertation.

Table 5. Proposed IHPC Skeena Working Group: Summary of Recommendations

Concept	**Recommendation**
Leadership	• Ensure TOR is developed early. • Establish governance with rotating governance group 'partner' chairs. This approach enables a power-sharing arrangement and distributes the administrative burden of meeting planning/follow-up/etc. • Ensure members have facilitation and/or chairing skills that can support dialogue in the face of conflict and disagreement, and enable enforcement of accountability mechanisms.
Regulator Commitments	• Communicate a clear commitment to WG. • Clearly articulate in TOR how WG advice will be taken into consideration by decision-maker(s) through the IHPC process.
Representation	• Objectives (once identified by governance group with input from the IHPC) will guide selection process for technical experts, of which selection will be based on skills and experience.

Concept		**Recommendation**
		• Representation should be clearly documented in TOR prior to beginning to address objectives-related work, and include explicit roles and responsibilities. • Include explicit language in TOR regarding First Nation participation that respects s. 35 rights – this could be explored during bilateral discussions prior to convening WG.
Clear SMART objective(s)		• Objective development by Skeena WG governance group, although northern IHPC should be kept updated on progress and given an opportunity to review and provide input.
Terms of Reference	Membership	• Clearly define membership, alternates and associated mandates where appropriate.
	Equal Standing	• Address power differentials by explicitly stating in TOR that parties are participating with equal standing.
	Mandates	• Include language that makes individual mandates explicit where appropriate (i.e. regulators).
	Roles and Responsibilities	• Include clearly defined roles and responsibilities for each member.
	First Nations' rights	• Include a clause that respects First Nation constitutionally protected rights (*Constitution Act*, section 35, 1982).
	Funding	• Articulate explicit funding source(s) (transparent and neutralized)
	Definitions	• Support common understandings with clear definition of key terms (those in Table 3 provide a starting point for this).

Concept		**Recommendation**
	Lobbying	• Include language that recognizes that "…lobbying of government by any one sector will be seen as a violation of the MOU…" (Pinkerton, 2009b, p. 13) and define repercussions for infractions to provide incentive for adherence.
	Communication	• Expectations of appropriate behavior must be explicitly defined in a code of conduct charter and have clear associated repercussions for non-compliance. • Define repercussions for failure to comply with code of conduct in TOR – e.g. two warnings by the chair followed by meeting ejection.
	Consensus	• Clearly define consensuses in the TOR and strive towards consensus. • Adopt a voting process for use in the absence of consensus and establish a definition of a quorum. • Define roles and responsibilities for briefing note development (i.e. documentation of options, views, and majority advice).
	Dispute Resolution	• Include a dispute resolution clause that explicitly articulates triggers of the clause, roles and responsibilities, and clear steps to undertake once the clause is triggered.
	Performance Measurement & Periodic Review	• Include commitment to periodic review within a prescribed time period in the effort to proactively incorporate learning as it evolves. • Establish performance measures and timelines with explicit roles and responsibilities to support annual progress reports and regular review/revision.

Concept	**Recommendation**
Operation	• Technical question generation that begins with identification of issues at the IHPC that can be referred to the WG, question development could then be further informed by WG discussion, and provided back to the IHPC with a feedback/revision process. • Skeena WG could host optional IHPC meetings/conference calls as appropriate to share WG progress, and request feedback from northern IHPC. • Outcomes and advice would be reported out at regular northern IHPC and main board meetings as appropriate.
Information Sharing	• Develop and maintain an online Skeena watershed repository (electronic library) to provide a transparent information resource to the WG, the IHPC, and the public.
Learning Opportunities	• Proactive opportunities to support effective WG collaboration skills should be examined as an approach to addressing potential conflict and enhanced interpersonal accountability (e.g. facilitation training, active listening courses, conflict resolution courses, etc.).

The recommended governance and WG approach described here is designed to facilitate independent advice that can respond to Skeena governance dynamics and includes relevant governments at the table, while avoiding pitfalls that inhibited progress during historical Skeena collaborations. Recommendations also present a proactive governance model that respects First Nation rights while remaining responsive to a post-treaty implementation context.

Summary of Conclusions

Analysis of historical Skeena collaborative initiatives examined highlighted the interdependence of successes and challenges, and their linkages with collaborative process design. Collaborative successes and challenges identified and discussed in this dissertation are summarized in Table 6.

Table 6. Cumulative Summary of SWC and SWI Successes and Challenges

Collaborative Successes	Interpersonal Communication and Relationship-building Facilitation and Interest-based Negotiation Proactive Engagement Clear Objectives Political Support as Lobby Prevention Funding Implementation: Practical outcomes of collaborative successes
Collaborative Challenges	Behavioural Issues and Implications Facilitation Process Structure Deficiencies Diverse Interests, Conflict and Lack of Dispute Resolution Limited Participant Resources Funding Implications Lacking Incentives Lack of Leadership Unclear Objectives Representation-related Issues Policy Impacts on way of Life and Economic Impacts Lobbying First Nation Participation

Key Issues	Access and Allocation Increased First Nation Fishery Access The Growth of the Recreational Fishery Harvest Planning Steelhead and Data Issues Knowledge Inequities Recreational Fishing Practices

Successes strongly linked to communication-related benefits and included relationship-building, opportunities for knowledge-sharing, creative problem-solving, the development of new knowledge (e.g. biological understandings), and increased common understandings among participants. For example, historical Skeena collaboration enabled relationships to be developed that some say improved interpersonal communication and contributed to sectors/groups communicating with each other outside of collaborative processes. In addition, interest-based collaboration appears to have supported better understandings of interests among watershed representatives. Experiences during the SWC and SWI were also indicative of challenges, however, as historical Skeena collaborative successes did not necessarily stimulate sympathy or empathy in some participants.

This latter aspect ties into behavioural issues and the lack of willingness to cooperate or engage in reciprocity demonstrated by a variety of collaborative participants during both historical processes, which held significant implications for Skeena collaboration. Ultimately, collaborative process design deficiencies, impacts related to external factors, and long-standing ongoing conflict exacerbated behavioural and interpersonal interaction issues. These aspects inhibited the long-term viability of collaboration, ultimately eroded social capital, and resulted in

fractured relationships. Further, increased distrust and escalated historical conflict impacted the willingness of some representatives to participate in other collaborative endeavors.

As shown in Table 6, historical collaborative processes in the Skeena watershed have experienced some success, however challenges during both the SWC and SWI undermined the effectiveness of these collaborative undertakings. This research identified: limited willingness of various historical Skeena collaborative process participants to cooperate and engage in reciprocity, long-standing resistance to cooperate and/or compromise regarding Skeena-related matters among historical Skeena collaborative process participants, behavioural issues during collaborative interactions that negatively impacted relationships, eroded social capital and fractured relationships among Skeena interested parties, the historical and ongoing aspect of conflict, and the persistence of historical Skeena process participants in current fisheries-related discussions. Research results do not suggest that cooperative behaviour at a watershed scale is likely, therefore fisheries-related collaboration at a watershed scale for the Skeena is not recommended at this time.

Summary of Recommendations

The overarching recommendation is to develop a tri-partite collaborative governance Working Group (WG) as an adjunct to the DFO's existing Salmon IHPC process. The proposed WG would be limited to three categories of 'partners', including federal and provincial governments and First Nations rather than participation at a watershed scale, and would involve subject matter experts in development of independent science-related advice for consideration at the IHPC table. As such, WG advice would inform subsequent development of IHPC advice provided to the DFO for consideration. This governance arrangement is not currently reflected in the current IHPC structure, nor is development of independent science-related advice part of the

IHPC mandate. The limited WG scope of governance enables application of research findings to increase the likelihood for collaborative success (Ostrom, 2002) in a way that is sensitive to impacts and implications of historical Skeena conflict in the spirit of learning-by-doing and adaptation (Berkes et al., 2007; Westley et al., 2007; Wondolleck & Yaffee, 2000). This approach presents an opportunity to draw on lessons learned during this research, while it utilizes an existing process as a nested enterprise for Skeena fisheries-related issues that is responsive to consultation fatigue and resource constraints. Proposed governance 'partners' are intended to facilitate a proactive approach to addressing interjurisdictional issues and rebuilding relationships among federal and provincial governments and First Nations while respecting constitutionally protected aboriginal interests. Conversely, the recommended approach does entail weaknesses attributed to IHPC WG autonomy, such as a dependence on the inclination of First Nations and governments to participate, potential resistance from sectors that prefer to be involved in science-related work, and potential constraints related to funding requirements for the WG.

The suite of potential WG governance 'partners' (Table 4) and collaborative process-design recommendations (Table 5) respond to key historical Skeena collaborative issues identified during this research, including process design deficiencies, impacts of historical conflict and external factors, with consideration of current Skeena fisheries-related contexts. Note also that recommendations build on the cooperative Skeena leadership model posited in Figure 4 (Chapter 6). Further, the recommended approach, summarized in Chapter 7's Table 4, entails numerous incentives for each prospective cooperative governance 'partner'.

Recommendations were designed with consideration that contextual factors change over time, funding constraints exist and will likely continue to exist, and that explicit yet flexible

recommendations provide a more robust research outcome than a highly prescriptive approach. As such, Table 5 in Chapter 7 provides a collaborative process-design framework that could support an IHPC WG and includes recommendations pertaining to: leadership, regulator commitment, representation, clear objectives, learning opportunities, information sharing, and operational guidance. The table also provides suggestions for TOR development that includes: provisions for membership, equal standing participation, documentation of participant mandates, clearly delineated roles and responsibilities, language that explicitly acknowledges and respects First Nation rights, funding, clear definitions, anti-lobbying provisions, communication guidance, consensus, and dispute resolution.

In summary, recommendations in this dissertation encompasses a suite of aspects intended to:

1. Apply Skeena lessons regarding historical collaborative success and challenges identified in this dissertation in a practical context;
2. Address key Skeena fisheries management/allocation-related issues and interjurisdictional issues in a current context;
3. Respond to historical Skeena conflict and implications such as fractured relationships;
4. Support rebuilding relationships in the Skeena watershed among interested parties;
5. Utilize an existing process in a way that is sensitive to funding and resource constraints and consultation fatigue; and
6. Provide practical tools to support operationalization.

Recognizing that contextual factors such as international considerations, evolving policy, and/or clarification of First Nation rights may change and influence the suitability of proposed options, recommendations are based on a realistic view of historical and current contexts and were designed to remain responsive to these contexts.

Recommendations for Future Research

Several gaps identified during the course of this research bear further mention in the context of recommendations for future research. Very little operational guidance for practitioners was found that clearly and succinctly identifies criteria that suggest when a process may not be appropriate, or provides easy to follow guidance of how to design a collaborative process. Wondolleck and Yaffee (2000) provide useful questions that can inform discussions of whether a collaborative process might be appropriate. Development of an explicit framework that synthesizes questions such as Wondolleck and Yaffee's with collaborative process design knowledge would be useful, as it would provide practitioners with a tool that could inform the determination of whether collaboration might be appropriate, as well as practical guidance to support the design of collaborative initiatives.

This dissertation focussed on collaboration process design from a *post hoc* perspective to draw lessons from historical Skeena collaborations and to share and apply learning in a practical format. As such this study did not focus on collaborative governance *per se*, however research findings have implications for governance that would be a fruitful avenue of investigation. For example, further inquiry into the appropriateness of collaboration in the context of the impacts of historical context in cases outside of the Skeena watershed, such as long-term historical conflict, overlapping jurisdictional responsibilities and friction, and strong personalities and recurrent behavioural issues such as adversarial conduct. This would be valuable as research could enable

additional insights into impacts associated with historical context on collaboration that might contribute to theoretical understandings at scales broader than the Skeena watershed.

References

Aboriginal Affairs and Northern Development Canada (AANDC). (2011). *Aboriginal Consultation and Accommodation: Updated guidelines for federal officials to fulfill the duty to consult*. Retrieved from http://www.aadnc-aandc.gc.ca/DAM/DAM-INTER-HQ/STAGING/texte-text/intgui_1100100014665_eng.pdf

Aboriginal Affairs and Northern Development Canada (AANDC). (2010). *Agreements under negotiation: British Columbia*. Retrieved from http://www.aadnc-aandc.gc.ca/eng/1100100031852/1100100031853

Agrawal, A. (2002). Chapter 2: Common Resources and Institutional Sustainability. In Stonich, S., Stern, P. C., Dolsak, N., Dietz, T., Ostrom, E., & Weber, E. U. (Eds.), *The drama of the commons* (pp. 41-85). Washington, USA: National Academies Press.

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

ARA Consulting Group Ltd. (ARA) (1994). *The Skeena watershed: Fish resources and the economy*. Retrieved from https://www.for.gov.bc.ca/hfd/library/documents/Bib92989.pdf

Armitage, D., Berkes, F., & Doubleday, N. (2007). Chapter 1: Introduction: Moving beyond co-management. In Armitage, D., Berkes, F., & Doubleday, N. (Eds.), *Adaptive co-management: Collaboration, learning, and multi-level governance* (pp. i-18). Vancouver, Canada: University of British Columbia Press.

Armitage, D.R., Plummer, R., Berkes, F., Arthur, R.I., Charles, A.T., Davidson-Hunt, I.J.,… Wollenberg, E.K. (2009). Adaptive co-management for social-ecological complexity. *Frontiers in Ecology and the Environment, 7*(2), 95-102.

Axelrod, R. (1984). *The evolution of cooperation*. New York, USA: Basic Books Inc. Publishers.

Barber, W.E., & Taylor, J.N. (1990). The importance of goals, objectives, and values in the fisheries management process an organization: A review. *North American Journal of Fisheries Management, 10*(4), 365-373.

Battiste, M. (2011). Introduction: Unfolding the lessons of colonization. In M. Battiste (Ed.), *Reclaiming indigenous voice and vision* (pp. xvi-2). Vancouver, Canada: University of British Columbia Press.

Berkes, F. (1999). *Sacred ecology: Traditional knowledge and resource management*. Philadelphia, PA: Taylor and Francis.

Berkes, F. (2002). Chapter 9: Cross-scale institutional linkages: Perspectives from the bottom up. In Stonich, S., Stern, P. C., Dolsak, N., Dietz, T., Ostrom, E., & Weber, E. U. (Eds.), *The drama of the commons* (pp. 293-322). Washington, USA: National Academies Press.

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

Berkes, F., Armitage, D., & Doubleday, N. (2007). Chapter 16: Synthesis: Adapting, innovating, evolving. In Armitage, D., Berkes, F., & Doubleday, N. (Eds.), *Adaptive co-management: Collaboration, learning, and multi-level governance* (pp. 308-327). Vancouver, Canada: University of British Columbia Press.

British Columbia Treaty Commission (BCTC). (2009). *Negotiation Update*. Retrieved from http://www.bctreaty.net/files/updates.php

Cameron, E., & Green, M. (2009). *Making sense of change management: A complete guide to the models, tools techniques of organizational change, 2nd edition*. Philadelphia, USA: Kogan Page Limited.

Carlsson, L., & Berkes, F. (2005). Co-management: Concepts and methodological implications. *Journal of Environmental Management, 75*(1), 65-76.

Carr-Harris C., Gottesfeld A.S., & Moore J.W. (2015). Juvenile salmon usage of the Skeena River estuary. *PLOS ONE 10*,(3). doi: 10.1371/journal.pone.0118988

Castro, A.P., & Nielsen, E. (2001). Indigenous people and co-management: Implications for conflict management. *Environmental Science & Policy*, *4*, 229–239.

Challenge. (n.d.) In *Google*. Retrieved from https://www.google.ca/webhp?sourceid=chrome-instant&ion=1&espv=2&ie=UTF-8#q=synonym+for+challenge

Compass Resource Management Ltd. (CRM). (2015). *Structured Decision Making*. Retrieved from http://www.compassrm.com/services/structured_decision_making.php

Conn, C. (2011). Conservation biology through the lens of a career in salmon conservation. *Conservation Biology*, *25*(6), 1075-1079.

Constitution Act. (1982). Retrieved from http://laws-lois.justice.gc.ca/eng/Const/page-15.html#h-38

Cooperation. (n.d.). In *Merriam-Webster*. Retrieved from http://www.merriam-webster.com/dictionary/cooperation

Counterpoint Consulting (Counterpoint). (2008). *Economic dimensions of Skeena watershed salmonid fisheries: Prepared for the Pacific Salmon Foundation October 2008*. Retrieved from http://skeenawatershedinitiative.com/libraryfiles/lib248.pdf

Davies, A.L., & White, R.M. (2012). Collaboration in natural resource governance: Reconciling stakeholder expectations in deer management in Scotland. *Journal of Environmental Management, 112*, 160-169.

Davis, N. (2008). Evaluating collaborative fisheries management planning: A Canadian case study. *Marine Policy, 32*, 867-876.

de Nooy, W. (2013). Communication in natural resource management: Agreement and disagreement within stakeholder groups. *Ecology and Society*, *18*(2), 44pp. Retrieved from https://dlc.dlib.indiana.edu/dlc/bitstream/handle/10535/9079/ES-2013-5648.pdf?sequence=1&isAllowed=y

Denzin, N. K. (2010). Moments, mixed methods and paradigm dialogues. *Qualitative Inquiry, 16*(6), 419-427.

Ebbin, S. A. (2004). The anatomy of conflict and the politics of identity in two cooperative salmon management regimes. *Policy Sciences, 37*(1), 71-87.

Eisenhardt, K.M. (2002). Building theories from case study research. In M. Huberman & M. Miles (eds.), *The Qualitative Researcher's Companion* (pp. 4-33). Thousand Oaks, USA: Sage Publications.

First Nations Leadership Council (FNLC). (2006). *BC First Nations Fisheries Action Plan*. Retrieved from http://www.fns.bc.ca/pdf/FNLC_FisheriesActionPlan.pdf

Fisheries Act. (1982). Retrieved from http://laws-lois.justice.gc.ca/eng/acts/f-14/

Fisheries & Oceans Canada (DFO). (1993, August 18). [Letter to Joy Thorkelson]. Fisheries & Oceans Canada Archives, Prince Rupert, BC.

Fisheries & Oceans Canada (DFO). (1995). *Skeena Watershed Committed: Enhancement & habitat restoration workshop, February 18-19, 1995*. Unpublished manuscript.

Fisheries & Oceans Canada (DFO). (1998). *A new direction for Canada's Pacific salmon fisheries: October 1998*. Retrieved from http://www.dfo-mpo.gc.ca/Library/230220.pdf

Fisheries & Oceans Canada (DFO). (1999). *An allocation policy for Pacific salmon: A new direction: The fourth in a series of papers from Fisheries and Oceans Canada, October 1999*. Retrieved from http://www.dfo-mpo.gc.ca/Library/240366.pdf

Fisheries & Oceans Canada (DFO). (2004). A policy to govern Pacific region advisory bodies. Unpublished manuscript.

Fisheries & Oceans Canada (DFO). (2005a). *Canada's policy for conservation of wild Pacific salmon*. Retrieved from http://www.pac.dfo-mpo.gc.ca/fm-gp/species-especes/salmon-saumon/wsp-pss/docs/wsp-pss-eng.pdf

Fisheries & Oceans Canada (DFO). (2005b). *Integrated Salmon Harvest Planning Committee: Terms of reference*. Retrieved from http://www.pac.dfo-mpo.gc.ca/consultation/smon/ihpc-cpip/tor-man-eng.htm

Fisheries & Oceans Canada (DFO). (2009). *Sustainable fisheries framework*. Retrieved from http://www.dfo-mpo.gc.ca/fm-gp/peches-fisheries/fish-ren-peche/sff-cpd/overview-cadre-eng.htm

Fisheries & Oceans Canada (DFO). (2013). *Preparing and Integrated Fisheries Management Plan*. Retrieved from http://www.dfo-mpo.gc.ca/fm-gp/peches-fisheries/ifmp-gmp/guidance-guide/preparing-ifmp-pgip-elaborationng.htm#a1

Fisheries & Oceans Canada (DFO). (2014a). *Canadian Science Advisory Secretariat (CSAS)*. Retrieved from http://www.dfo-mpo.gc.ca/csas-sccs/index-eng.htm

Fisheries & Oceans Canada (DFO). (2014b). *Strategy Four Pilots: Key Findings. May 27, 2014*. Unpublished manuscript.

Fisheries & Oceans Canada (DFO). (2015). *Mission, Vision and Values*. Retrieved from http://www.dfo-mpo.gc.ca/about-notre-sujet/org/vision-eng.htm

Flyvbjerg, B. (2006). Five misunderstandings about case-study research. *Qualitative Inquiry, 12*(2), 219-245.

Frame, T. M., Gunton, T., & 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.

Francino, M., Lefeaux-Valentine, W., & Fryer, J. (1996). *Tangled lines: A federal-provincial review of the Mifflin plan, [by the] Pacific Salmon Revitalization Plan Review Panel*. Retrieved from http://library.projectwatershed.ca/items/show/2235

Gardner, J. (2009). *Knowledge integration and salmon conservation and sustainability planning: Towards effective implementation of wild salmon policy strategy four*. Retrieved from http://www.davidsuzuki.org/publications/downloads/2009/Wild_Salmon_Policy_Strategy_4_Report_-_J_Gardner_2009.pdf

Gardner Pinfold. (2011). *Performance review of the Wild Salmon Policy*. Retrieved from http://www.cohencommission.ca/DownloadExhibit.php?ExhibitID=2559

Garner, K., & Parfitt, B. (2006). *First nations, salmon fisheries and the rising importance of conservation: report to the Pacific Fisheries Resource Conservation Council*. Retrieved from http://docplayer.net/178469-First-nations-salmon-fisheries-and-the-rising-importance-of-conservation.html

Gottesfeld, A., Barnes, C., & Soto, C. (2009). Case history of the Skeena Fisheries Commission: Developing aboriginal fishery management capacity in northern British Columbia. *American Fisheries Society Symposium, 70*, 921-939.

Gottesfeld, A.S., & Rabnett, K.A. (2008). *Skeena River fish and their habitat.* Portland, Oregon: Ecotrust USA.

Government of Canada and Province of British Columbia (Can-BC). (1997). *Canada-British Columbia Agreement on the Management of Pacific Salmon Fishery Issues*. Unpublished manuscript.

Greene, J.C. (2008). Is mixed methods social inquiry a distinctive methodology? *Journal of Mixed Methods Research, 2*(1), 7-22.

Gutiérrez, N.L., Hilborn, R., & Defeo, O. (2011). Leadership, social capital and incentives promote successful fisheries. *Nature, 470*(7334), 386-389.

Huxham, C. (2000). The challenge of collaborative governance. *Public Management, 2*(3), 337-357.

Impact. (n.d.). In *Google*. Retrieved from https://www.google.ca/webhp?sourceid=chrome-instant&ion=1&espv=2&ie=UTF-8#q=define+impact

Isaacs, W. (1999). *Dialogue and the art of thinking together: A pioneering approach to communicating in business and life*. New York, USA: Doubleday.

Jones, R. (2006). *Working models for fisheries collaborative management: Prepared for: First Nation Marine Society*. Retrieved from http://www.acee-ceaa.gc.ca/050/documents_staticpost/cearref_21799/83896/Working_Models_for_Fisheries.pdf

J.O. Thomas and Associates Ltd. (JOT). (2010). *Steelhead Bycatch and Mortalities in the Commercial Skeena Net Fisheries of British Columbia from Observer Data: 1989 to 2009*. Retrieved from http://skeenawatershedinitiative.com/library/lib250

Kearney, J., Berkes, F., Charles, A., Pinkerton, E., & Wiber, M. (2007). The role of Participatory Governance and Community-Based Management in Integrated Coastal and Ocean Management in Canada. *Coastal Management, 35*(1), 79-104.

King, L. (2004). Competing knowledge systems in the management of fish and forests in the Pacific Northwest. *International Environmental Agreements: Politics, Law and Economics, 4*, 161-177.

Klimova, B.F., & Semradova, I. (2012). Barriers to communication. *Procedia-Social and Behavioural Sciences, 31*, 207-211.

Knox, G. (2008). *First Nation ingenuity: A promising approach to the Skeena salmon crisis* (Master of Arts Thesis). Retrieved from http://skeenawild.org/images/uploads/First_Nations_Ingenuity.pdf

Lachapelle, P.R., McCool, S.F., & Patterson, M.E. (2003). Barriers to effective natural resource planning in a 'messy' world. *Society & Natural Resources, 16*(6), 473-460.

Lam, M.E., & Campbell, M.E.C. (2012). The privilege to fish. Ecology and society, 17(4), 19pp.

McCay, B.J. (2002). Chapter 11: Emergence of institutions for the commons: Contexts, situations, and events. In Stonich, S., Stern, P. C., Dolsak, N., Dietz, T., Ostrom, E., & Weber, E. U. (Eds.), *The drama of the commons* (pp. 361-402). Washington, USA: National Academies Press.

Metcalfe, M. (2008). Pragmatic inquiry. *Journal of the Operational Research Society, 59*(8), 1091-1099.

Ministry of Forests, Lands and Natural Resource Operations (FLNRO). (2015). *Provincial framework for steelhead management in British Columbia: Draft January 2015*. Unpublished manuscript.

National Round Table on the Environment and the Economy (NRTEE). (1998). *Sustainable strategies for oceans: A co-management guide.* Retrieved from http://nrtee-trnee.ca/ocean-co-management-guide

Notzke, C. (1995). A new perspective in aboriginal natural resource management: Co-management. *Geoforum, 26*(2), 187-209.

Office of the Auditor General of Canada (OAG). (1999). *1999 September and November Report of the Auditor General of Canada.* Retrieved from http://www.oag-bvg.gc.ca/internet/English/att_9920aa_e_9907.html

Ostrom, E. (1990). *Governing the commons: The evolution of institutions for collective action*. Cambridge, UK: Cambridge University Press.

Ostrom, E. (2008). Design principles of robust property-rights institutions: What have we learned? Keynote address presented at conference on 'Land Policies and Property Rights,' Lincoln Institute of Land Policy, Cambridge, MA, June 2-3, 2008. 28 pp. Retrieved from http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1304708

Pacific Fisheries Monitoring & Compliance Panel (M&C). (2012). *M&C Panel*. Retrieved from http://www.pfmcp.ca/

Pinkerton, E. (1989). Chapter 1 Introduction: Attaining better fisheries management through comanagement – problems prospects and propositions. In *Cooperative management of local fisheries*, 3-35. Vancouver, Canada: University of British Columbia Press.

Pinkerton, E. (1994). Local fisheries co-management: A review of international experiences and their implications for salmon management in British Columbia. *Canadian Journal of Fisheries and Aquatic Sciences*, *51*(10), 2363-2378.

Pinkerton, E. (1996). The contribution of watershed-based multi-party co-management agreements to dispute resolution: the Skeena Watershed Committee. *Environments, 23*(2), 51-68.

Pinkerton, E. (1999). Factors in overcoming barriers to implementing co-management in British Columbia salmon fisheries. *Conservation Ecology*, *3*(2). Retrieved from http://www.consecol.org/vol3/iss2/art2/

Pinkerton, E**. (**2007). Chapter 8: Integrating holism and segmentalism: Overcoming barriers to adaptive co-management between management agencies and multi-sector bodies. In Armitage, D., Berkes, F., & Doubleday, N. (Eds.)**.** *Adaptive Co-Management: Collaboration, Learning, and Multi-level Governance*. Vancouver, Canada: University of British Columbia Press.

Pinkerton, E. (2009a). Chapter 7: Partnerships in management. In *A fishery manager's guidebook, 2nd Edition*. Cochrane K.L., & Garcia S.M. (Eds.). West Sussex, UK: The Food and Agriculture Organization of the United Nations and Wiley-Blackwell.

Pinkerton, E. (2009b). The Skeena watershed partnership: learning from success and failure in salmon management. In Pacific salmon: ecology and management of western Alaska's populations. *American Fisheries Society, Symposium*, 70, (pp. 903-919).

Pinkerton, E., Angel, E., Ladell, N., Williams, P., Nicolson, M., Thorkelson, J., & Clifton, H. (2014). Local and regional strategies for rebuilding fisheries management institutions in coastal British Columbia: What components of comanagement are most critical? *Ecology and Society, 19*(2), 72.

Pinkerton, E. & Weinstein, M. (1995). *Fisheries that work: Sustainability through community based management: A report to the David Suzuki Foundation*. Retrieved from http://dlc.dlib.indiana.edu/dlc/bitstream/handle/10535/4487/Fisheries_that_work_sustainability_through_community-based_management.pdf?sequence=1

Platt, J. (2007). Case Study. In W. Outhwaite & S. Turner (eds.), *The Sage handbook of social science methodology* (pp.102-120). Thousand Oaks, CA: Sage Publications.

Plummer, R. & FitzGibbon, J. (2007). Chapter 3: Connecting adaptive co-management, social learning and social capital through theory and practice. In Armitage, D., Berkes, F., & Doubleday, N. (Eds.), *Adaptive Co-Management: Collaboration, Learning, and Multi-level Governance* (pp. 38-61). Vancouver, Canada: University of British Columbia Press.

Pomeroy, R. S., & Berkes, F. (1997). Two to tango: the role of government in fisheries co-management. *Marine Policy, 21*(5), 465-480.

Pomeroy, R.S., & Rivera-Guieb, R. (2006). *Fishery co-management: a practical handbook.* Ottawa, ON: CABI Publishing.

Porter, M., Pickard, D., Casley, S., & Ochoski, N. (2014). *Skeena salmon conservation units habitat report cards: Chinook, coho, pink, chum, and river sockeye: Report prepared by ESSA Technologies Ltd. for the Pacific Salmon Foundation*, 66 pp. Retrieved from http://skeenasalmonprogram.ca/libraryfiles/lib_356.pdf

Province of British Columbia (Gov. of BC). (1997). The BC Fisheries Strategy: Towards a 'made-in-BC' vision to renew the Pacific salmon fishery discussion paper, May 1997. Retrieved from https://www.for.gov.bc.ca/hfd/library/documents/bib75137.pdf

Province of British Columbia (Gov. of BC). (2010). Updated procedures: For meeting legal obligations when consulting First Nations. Retrieved from http://www.gov.bc.ca/arr/reports/down/updated_procedures.pdf

Ragin, C. (2007). Comparative Methods. In W. Outhwaite & S. Turner (eds.), *The Sage handbook of social science methodology* (pp. 67-80). Thousand Oaks, CA: Sage Publications.

Raymond, C. M., Fazey, I., Reed, M. S., Stringer, L. C., Robinson, G. M., & Evely, A. C. (2010). Integrating local and scientific knowledge for environmental management. *Journal of Environmental Management*, *91*(8), 1766-1777.

Rettig, R.B., Berkes, F., & Pinkerton, E. (1989). Chapter 16: The future of fisheries co-management: A multi-disciplinary assessment. In *Co-operative management of local fisherie*s (pp. 273-290). Vancouver, Canada: University of British Columbia Press.

Relational. (n.d.). In *Oxford Dictionaries*. Retrieved from http://www.oxforddictionaries.com/definition/english/relational

Richerson, P.J., Boyd, R., & Paciotti, B. (2002). Chapter 12: An Evolutionary Theory of Commons Management. In Stonich, S., Stern, P. C., Dolsak, N., Dietz, T., Ostrom, E., & Weber, E. U. (Eds.), *The drama of the commons* (pp. 403-442). Washington, USA: National Academies Press.

Rothbauer, P. M. (2008). Triangulation. *The Sage encyclopedia of qualitative research methods*, *2*, 892-894.

Round Tables on the Environment and Economy in Canada (RTEEC). (1993). *Building consensus for a sustainable future: Guiding principles*. Retrieved from http://westcoastaquatic.ca/wp-content/uploads/2012/03/Report_Consensus_Guiding_Principles_E.pdf

Rudeen, A.K., Fernandez-Gimenez, M.E., Thompson, J.L., & Meiman, P. (2012). Perceptions of success and the question of consensus in natural resource collaboration: Lessons from an inactive collaborative group. *Society & Natural Resources, 25*(10), 1012-1027.

Scholz, R. & Tietje, O. (2002a). The architecture of knowledge integration in embedded case studies. In *Embedded case study methods* (pp. 29-44). Thousand Oaks, CA: Sage Publications.

Scholz, R. & Tietje, O. (2002b). Types of case studies. In *Embedded case study methods* (pp. 9-14). Thousand Oaks, CA: Sage Publications.

Seidman, Irving. (2013). *Interviewing as qualitative research: A guide for researchers in education and the social sciences (Fourth ed*.). New York, USA: Teachers College Press.

Sigurdson, G., Stuart, B., & Gallaugher, P. (2008). *Summary of the Skeena Watershed Committee debriefing session*. Unpublished manuscript.

Singleton, S. G. (1998). *Constructing cooperation: the evolution of institutions of comanagement*. Ann Arbor, Michigan: University of Michigan Press.

Singleton, S. (2000). Co-operation or capture? The paradox of co-management and community participation in natural resource management and environmental policy-making. *Environmental Politics, 9*(2), 1-21.

Skeena Watershed Committee (SWC). (1992a). *Memorandum of understanding for the Skeena Watershed Committee respecting fisheries management in the Skeena River*. Unpublished manuscript.

Skeena Watershed Committee (SWC). (1992b). *Skeena Watershed Committee Consensus*. Unpublished document.

Skeena Watershed Committee (SWC). (1994). *Memorandum of understanding for the Skeena Watershed Committee respecting fisheries management in the Skeena River*. Unpublished document.

Skeena Watershed Committee (SWC). (1995). *Skeena Watershed Committee Workshop Proceedings: Enhancement and habitat restoration workshop, selective harvesting workshop*. David Conley (Ed). Courtenay, Canada: Coregan, Conley & Associates.

Skeena Watershed Initiative (SWI). (n.d.a). *Purpose*. Retrieved from http://skeenawatershedinitiative.com/purpose

Skeena Watershed Initiative (SWI). (n.d.b). *Skeena Watershed Initiative*. Retrieved from http://skeenawatershedinitiative.com/

Skeena Watershed Initiative (SWI). (n.d.c). *Strategic Planning Committee*. Retrieved from http://skeenawatershedinitiative.com/structure/planning

Skeena Watershed Initiative (SWI). (n.d.d). *Technical Committee Structure*. Unpublished document.

Skeena Watershed Initiative (SWI). (n.d.e). *The Public*. Retrieved from http://skeenawatershedinitiative.com/structure/public

Skeena Watershed Initiative (SWI). (2011). *Technical Advisory Group Terms of Reference*. Unpublished document.

Slocombe, D.S. (1998). Lessons from experience with ecosystem-based management. *Landscape & Urban Planning*, *40*(1), 31–39.

Stake, R. (2006). *Multiple case study analysis*. New York, NY: Guilford.

Stake, R. (1995). *The art of case study research*. Thousand Oaks, CA: Sage Publications.

Stern, P. C., Dietz, T., Dolsak, N., Ostrom, E., & Stonich, S. (2002). Chapter 13: Knowledge and questions after 15 years of research. In Stonich, S., Stern, P. C., Dolsak, N., Dietz, T., Ostrom, E., & Weber, E. U. (Eds.), *The drama of the commons* (pp. 445-490). Washington, USA: National Academies Press.

Success. (n.d.). In *Google*. Retrieved from https://www.google.ca/webhp?sourceid=chrome-instant&ion=1&espv=2&ie=UTF-8#q=define%20success

Tangible. (n.d.a). In *Oxford Dictionaries*. Retrieved from http://www.oxforddictionaries.com/definition/english/tangible

Tangible. (n.d.b). In *Merriam-Webster*. Retrieved from http://www.merriam-webster.com/dictionary/tangible

The New Relationship. (2005). Retrieved from http://www2.gov.bc.ca/assets/gov/business/natural-resource-industries/consulting-with-first-nations/agreements/other-docs/new_relationship_accord.pdf

Ury, W. (2007). *The power of a positive no: How to say no and still get to yes*. New York, USA: Bantam Dell.

Vandebroek, I., Reyes-García, V., Albuquerque, U. P., Bussmann, R., & Pieroni, A. (2011). Local knowledge: Who cares. *Journal of Ethnobiology and Ethnomedicine, 7*(35), 1-7.

Walters, C.J., Lichatowich, J.A., Peterman, R.M., & Reynolds, J.D. (2008). *Report of the Skeena Independent Science Review Panel: A report to the Canadian Department of Fisheries and Oceans and the British Columbia Ministry of the Environment*. Retrieved from

http://waves-vagues.dfo-mpo.gc.ca/waves-vagues/search-recherche/display-afficher/336136

Westley, F., Zimmerman, B., & Patton, M. Q. (2007). *Getting to maybe: How the world is changed*. Toronto, ON: Vintage Canada.

Whaley, L., & Weatherhead, E. K. (2014). An integrated approach to analyzing (adaptive) co-management using the 'politicized' IAD Framework. *Ecology and Society*, *19*(1), 10pp.

Wondolleck, J. M., & Yaffee, S. L. (2000). *Making collaboration work: Lessons from innovation in natural resource management*. Washington, USA: Island Press.

Wood, C.C. (2001). *Managing biodiversity in Pacific salmon: The evolution of the Skeena River sockeye salmon fishery in British Columbia*. Blue millennium: managing global fisheries for biodiversity. World Fisheries Trust, Victoria, British Columbia, 4-34. Retrieved from http://www.unep.org/bpsp/Fisheries/Fisheries%20Case%20Studies/WOOD.pdf

Yaffee, S.L., & Wondolleck, J.M. (2003). Collaborative ecosystem planning processes in the United States: Evolution and changes. *Environments, 31*(2), 59-72.

Appendix A: Semi Structured Interview Guide

Historical Fisheries Management Questions:

1. With regard to the Skeena Watershed Committee:
    a. How was this committee started?
    b. How did you get involved and what was your involvement?
    c. What were your objectives for getting involved and did you fulfill your objectives?
    d. What do you think was successful about the process?
        i. Why do you think these were successes? (I.e. what were strengths that contributed to these successes?)
        ii. What do you think the impact(s) were of these successes?
    e. What were collaboration difficulties or challenges? (I.e. what was unsuccessful?)
        i. Why do you think these were challenges?
        ii. What do you think were the impact(s) of difficulties or challenges?
    f. Do you have any recommendations for future processes?

2. With regard to the Skeena Watershed Initiative:
    a. How was this committee started?
    b. How did you get involved and what was your involvement?
    c. What were your objectives for getting involved and did you fulfill your objectives?
    d. What do you think was successful about the process?
        i. Why do you think these were successes? (I.e. what were strengths that contributed to these successes?)
        ii. What do you think the impact(s) were of these successes?
    e. What were collaboration difficulties or challenges? (I.e. what was unsuccessful?)
        i. Why do you think these were challenges?
        ii. What do you think were the impact(s) of difficulties or challenges?
    f. Do you have any recommendations for future processes?

Fisheries Management Questions:

3. Are you currently involved currently in fishery management discussions such as the IFMP process, post-season or in-season management?
4. If yes to Question 9, do you have any thoughts on the effectiveness of current fishery management process(s) and/or discussion(s)?

General Questions:

5. What does collaboration mean to you?
6. What aspects or elements do you think are essential to collaboration?
7. a) What role do you see yourself in when participating in collaborations?
   b) What role do others see you in?
8. What is important to you as a participant within collaborative processes?
9. What motivates you to participate in collaborative processes?
10. Do you have any recommendations that you think would improve collaborative fisheries management?
11. I'd like to share preliminary research findings with you in a few months and at the same time assess how much you agree or disagree with findings. Are you open to a brief 20 minute follow-up email survey in a few months?
12. With interview questions in mind, do you recommend any materials that would be useful to this study? People I should talk to?
13. Is there anything else you'd like to share?
14. May I contact you if I have any further questions?

Reflective memoing

Include Participant observation after interviews to include:

1. in person/phone
2. Tone
3. Behavior
4. Language/profanity
5. Emotion of interviewee
6. Energy/demeanor

Other observations/comments:

-

Appendix B: Email Survey

Preliminary Findings Questionnaire

Statements are not in any specific order and are not prioritized.

Please select your answer on a scale between 1 and 5 (**1=strongly agree, 2=agree, 3=neutral/don't know, 4=disagree, 5=strongly disagree**).

*Select your response by either: highlighting the chosen number; or making the number **bold**.*

Once completed, please email back to Diana Freethy

Collaborative Successes

1. A key element that contributed to SWC collaborative successes was accountability (i.e. fulfillment of roles and responsibilities)
   1 2 3 4 5
2. A key element that contributed to SWC collaborative successes was interest-based negotiation
   1 2 3 4 5
3. A key element that contributed to SWC collaborative successes was political support as lobby prevention
   1 2 3 4 5
4. A key element that contributed to SWC collaborative successes was proactive planning
   1 2 3 4 5
5. A key element that contributed to SWC collaborative successes was interpersonal communication & relationship-building
   1 2 3 4 5
6. Facilitation during the SWC supported relationship building activities
   1 2 3 4 5
7. Funding made work during the SWC more effective
   1 2 3 4 5
8. Funding made work with the SWI more effective
   1 2 3 4 5
9. A clear objective provided guidance for the SWC
   1 2 3 4 5
10. Clear leadership was present during the SWC
    1 2 3 4 5
11. A specific problem was present during the SWC
    1 2 3 4 5
12. Incentive(s) to participate in the SWC were present
    1 2 3 4 5

13. There was a regulatory commitment to seriously consider and/or implement SWC consensus recommendations

1 2 3 4 5

Collaborative Challenges

14. Poor behaviour (e.g. adversarial comments, profanity, yelling, etc.) negatively impacted relationships during the SWC

1 2 3 4 5

15. Poor behaviour (e.g. adversarial comments, profanity, yelling, etc.) negatively impacted relationships during the SWI

1 2 3 4 5

16. Conflict and strained relationships were prevalent during the SWC

1 2 3 4 5

17. Histories of interpersonal grievances resulted in escalated conflict and strained relationships during the SWI

1 2 3 4 5

18. The lack of structure (e.g. lack of a terms of reference or code of conduct, clear roles and responsibilities, membership/representation, etc.) during initial stages of the SWI led to difficulties that inhibited timely progress

1 2 3 4 5

19. Clear leadership was lacking during the SWI

1 2 3 4 5

20. A specific problem was lacking during the SWI

1 2 3 4 5

21. Incentive(s) to participate in the SWI were lacking

1 2 3 4 5

22. There was a lack of regulatory commitment to seriously consider and/or implement SWI consensus recommendations

1 2 3 4 5

23. Lack of clear objectives made SWI progress difficult

1 2 3 4 5

24. SWC participation was inconsistent

1 2 3 4 5

25. SWI participation was inconsistent

1 2 3 4 5

26. There was a lack of participant commitment to the SWI process

1 2 3 4 5

Underlying Causes of Collaborative Challenges

27. Larger policy contexts, such as the Pacific Salmon Treaty, had an impact on SWI discussions

1 2 3 4 5

28. Way of Life & Economic Impacts: Environmental, Economic and Social changes over recent decades have involved deep, lasting impacts that continue to impact fishery-related discussions

1 2 3 4 5

29. Lobbying was fairly commonplace throughout the SWI

1 2 3 4 5

Key issues that aggravated collaborative frictions experienced during the SWC *and/or* the SWI

30. Fishery resource access (e.g. harvest, catch & release, cultural practices, etc.)

1 2 3 4 5

31. Allocation (e.g. among user groups and gear types)

1 2 3 4 5

32. Increased upriver fishing opportunities (e.g. upriver First Nation economic fishery access)

1 2 3 4 5

33. The growth of the recreational fishery

1 2 3 4 5

34. Harvest planning (e.g. commercial and recreational fishing plans)

1 2 3 4 5

35. The struggle to implement the WSP (e.g. development of conservation units, benchmarks, etc.)

1 2 3 4 5

36. Science (e.g. disagreements around: study design, data quality, the interpretation of data, and the meaning of results, etc.)

1 2 3 4 5

37. Knowledge inequities among participants (e.g. some had a higher level of technical/scientific understanding)

1 2 3 4 5

38. Steelhead (e.g. stock and population health, related management measures, etc.)

1 2 3 4 5

39. Industrial development and prospective habitat issues (e.g. proposed LNG projects, proposed pipelines, etc.)

1 2 3 4 5

40. Differing opinions around recreational fishing practices (e.g. catch and release practices, etc.)

1 2 3 4 5

Appendix C: Summary analysis of survey responses

*Legend	Value
Agree	1.0-2.9
Neutral	3.0
Disagree	3.1-5.0

Statement #	Data set 1		Data set 2		Difference between Data set Averages (+/-)	Cumulative interpretation (*see legend)
	Raw Data analysis		Excluded Data Analysis			
	N	Average	N	Average		
1	10	2.8	5	2.6	**0.2**	Agree
2	10	2.3	9	2.2	0.1	Agree
3	8	2.6	6	2.5	0.1	Agree
4	10	2.8	7	2.7	0.1	Agree
5	10	1.6	9	1.4	**0.2**	Agree
6	10	1.8	9	1.7	0.1	Agree
7	9	2.1	8	2.0	0.1	Agree
8	6	2.8	5	2.8	0.0	Agree
9	10	2.6	6	2.3	**0.3**	Agree
10	10	2.4	8	2.3	**0.2**	Agree
11	9	1.6	8	1.4	**0.2**	Agree
12	10	2.3	6	1.8	**0.5**	Agree
13	8	2.9	8	2.9	0.0	Agree
14	10	3.2	9	3.2	0.0	Disagree
15	9	2.6	8	2.5	0.1	Agree
16	10	2.1	9	2.0	0.1	Agree
17	8	2.0	8	2.0	0.0	Agree
18	9	2.7	7	2.6	0.1	Agree
19	8	2.3	7	2.1	0.1	Agree
20	9	2.7	7	2.6	0.1	Agree
21	9	2.8	7	2.7	0.1	Agree
22	8	2.4	6	2.2	**0.2**	Agree
23	9	2.6	7	2.4	0.1	Agree
24	10	4.0	10	4.0	0.0	disagree
25	9	3.1	8	3.1	0.0	disagree
26	9	3.1	6	3.2	0.1	disagree
27	8	3.6	4	4.3	**0.6**	disagree
28	15	1.4	15	1.4	0.0	agree
29	9	2.1	9	2.1	0.0	agree
30	16	1.7	13	1.4	**0.3**	agree
31	16	1.4	15	1.3	0.1	agree
32	16	2.0	14	1.9	0.1	agree
33	16	1.8	16	1.8	0.0	agree
34	16	2.3	12	2.0	**0.3**	agree
35	9	2.1	7	1.9	**0.3**	agree
36	16	2.4	15	2.4	0.0	agree
37	16	2.9	13	2.9	0.0	agree
38	16	1.9	14	1.7	**0.2**	agree
39	8	3.9	7	4.0	0.1	disagree
40	16	2.5	15	2.5	0.0	agree

Appendix D: Summary of survey respondents according to representation

Survey Response Representation	**# Responses Received**
Provincial	2
Aboriginal	2
Federal	3
Recreational	3
Commercial	2
Environmental	1
Contextual*	3
Total Survey Responses	16

*Note. Contextual survey responses include those interviewed to fill in gaps as described in the Methodology section in Chapter 3, one of which tested the survey prior to broader distribution.

Endnotes

[i] "Nine organizations are represented on a Steering Committee that coordinates the MCC (includes calling meetings, budget, contribution agreement, reviewing of committee structure and participation, and other consultation issues). Present MCC Steering Committee: Canadian Parks and Wilderness Society - BC Chapter; David Suzuki Foundation; Living Oceans Society; Pacific Streamkeepers Federation; Raincoast Conservation Foundation; SkeenaWild Conservation Trust; Steelhead Society of British Columbia; Watershed Watch Salmon Society; and World Wildlife Fund Canada." Retrieved from http://mccpacific.org/pages/about/mccstructure.htm

The MCC Steering "Committee participants are drawn broadly from the marine conservation community, subject to review by the MCC Steering Committee. Current, active committees and participant groups [for salmon] are: David Suzuki Foundation (Jeffery Young); Pacific Streamkeepers Federation (ZoAnn Morten); Raincoast Conservation Foundation (Misty MacDuffee); Watershed Watch (Craig Orr, Stan Proboszcz, Ken Wilson, Aaron Hill, Vicky Husband, Terry Glavin)". Retrieved from http://mccpacific.org/pages/about/committeesandappointments.htm

[ii] This paragraph draws on personal experience, however information that guides the IFMP process is located at http://www.dfo-mpo.gc.ca/fm-gp/peches-fisheries/ifmp-gmp/index-eng.htm.