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Title of Thesis: **Social Learning as a Tool to Understand Complex Adaptive Management Institutions**

Project Number: **499**

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DEDICATION

To my parents,

For introducing me to the wonders of our natural world and for their unconditional belief that I can make a difference in it.

To my sister,

For her ability to make me laugh when I need it the most.

And to Dave,

For so many things, particularly his unwavering patience and support.

ACKNOWLEDGEMENTS

First I would like to thank my supervisor, Dr. Evelyn Pinkerton. Throughout the last four years, she has been more than a supervisor; she has been a mentor. I will always be grateful to her for helping me to wade through the complexities of collaborative resource management. I would also like to thank Dr. Murray Rutherford. I sincerely appreciated his kind and thoughtful feedback.

I would like to thank the Washington Forest Practices Adaptive Management Program for its support of this research. I am very thankful for the time and insight its members have shared with me. Without them this research would never have been possible.

I am grateful for the support of the Social Sciences and Humanities Research Council of Canada through their grant #410-2004-1378 to Dr. Evelyn Pinkerton.

Last, but definitely not least, I would like to thank my fellow Remmers. I feel so lucky to have met such a great group of people. I would particularly like to thank Miku and Meghan for being such good friends and colleagues.

f c n 30
n a n 31
a a n 32
a n 39
g u n 40

Ch pter Methods 41

L a u v 41
Da a c n 41
ca n a n 42
v a n M n 43
n v g 43
Da a Ana y 45
Da a n 47
f c n g a c c v 47
L a n 48

Ch pter here Are e No ? Rese rch Findings nd Discussion 50

a u f c a L a n n n AM a 50
n a n y a u c a L a n n 53
y g n . c a L a n n an g an n g v n 56
u y n . g an B n f a a n 57
u y . Lac L n 62
u y . A Lac L a n AM a g 66

LIST OF FIGURES

u . .an .a n.....12

u 2. .a n n .ac c A .a v Mana n .a
uc u.....20

u . c ca yc.....29

u 4. L .a n n yc.....31

u . A n n La f u c .a c a n.....34

u . .ana n Bun f 35

u . .a .a v .ann n B .ac c.....37

LIST OF ACRONYMS AND ABBREVIATIONS

Admin – Administrative Committee

Board – The Washington Forest Practices Board

CMER – Cooperative Monitoring, Evaluation Research Committee

CWA – Clean Water Act

DFC – Desired Future Condition

DOE – Department of Ecology

DNR – Department of Natural Resources

DFW – Department of Fish and Wildlife

EIS – Environmental Impact Statement

EPA – Environmental Protection Agency

ESA – Endangered Species Act

FEIS – Final Environmental Impact Statement

FIC – Field Information Committee

FF – Forest and Fish

FFR – Forest and Fish Report

HCP – Habitat Conservation Plan

ITP – Incidental Take Permit

LWD – Large Woody Debris

NEPA – National Environmental Protection Act

NMFS – National Marine Fisheries Service

NOAA – National Oceanographic and Atmospheric Administration

FF Policy – Forest and Fish Policy Committee

REIT – Real Estate Investment Trust

RSAG – Riparian Science Advisory Group

SAG – Scientific Advisory Group

Services – The United States Fish and Wildlife Service and the National Marine Fisheries Service

SRC – Scientific Review Committee

TIE – Technical Information and Education Committee

TIMO – Timber Investment Management Organization

TFW – Timber, Fish and Wildlife

WFFA – Washington Farm Forestry Association

WFPA – Washington Forest Protection Association

WFPAM Program – Washington Forest Practices' Adaptive Management Program

USFWS – United States Fish and Wildlife Service

GLOSSARY

Adaptive Management

Collaborative Planning

Co-management

Consensus Building

Desired Future Condition

Incidental Take Permit

Interest-based rest

Mentoring

NVivo

Social Learning

Take

there is little research evaluating the effectiveness of these collaborative processes over extended periods. Because it is the latest iteration of over twenty years of collaborative efforts, the Washington Forest Practices Adaptive Management Program offers a unique opportunity to examine collaboration over an extended length of time. This program also provides a particularly challenging example of collaboration due to the multiplicity of parties involved and the history of litigation among them. Therefore, the goal of this research is to examine the effectiveness of long-term collaborative multi-party processes using the Washington Forest Practices Adaptive Management Program as a case study.

Specifically, this research examines how diverse groups of stakeholders share experiences, ideas and environments with one another, a concept referred to in the literature as social learning (Keen et al 2005b, Schusler et al. 2003, Woodhill and Röling 1998). The objectives of this research were threefold:

(1) determine if and how social learning is occurring in the Washington Forest Practices Adaptive Management Program;
(2) where social learning is not occurring, develop hypotheses about why and retrospectively test these to the extent possible using information collected during the data gathering phase of the research; and
(3) offer suggestions for opportunities to enhance social learning.

To determine if and how social learning is occurring in the Washington Forest Practices Adaptive Management Program a literature review was first carried out. This review was used to determine what characteristics make for effective social learning. Next, semi-structured interviews were conducted with current and past members of two key Adaptive Management Program committees, the Cooperative Monitoring and Evaluation Research (CMER) committee and the Forest and Fish (FF) Policy committee. In addition, observation of CMER and FF Policy committee meetings occurred throughout the summers of 2007 and 2008. The interviews were then transcribed and coded and analyzed using a grounded theory approach.

This report is organized into six sections. The introduction briefly describes the research question and its context. Chapter 2 provides a historical overview of forest practices in the State of Washington. The purpose of this overview is to critically examine the last 20 years of collaborative efforts to see which activities may have led to

current challenges or successes and, based on this information, to extrapolate what activities may facilitate more effective collaboration in the future. Chapter 3 describes social learning and its application to the Washington Forest Practices Adaptive Management Program. Chapter 4 describes the methods used to conduct this research. Chapter 5 analyzes the data and describes research findings. Finally, Chapter 6 summarizes the key results of the research.

CHAPTER 2: HOW DID WE GET HERE? A BRIEF HISTORY OF THE ADAPTIVE MANAGEMENT PROGRAM

The Washington Forest Practices Adaptive Management (WFPAM) Program has a long and complex history. The historical aspects of the WFPAM Program which are examined in this research are described in this chapter. Much of this historical

every aspect of salmon habitat. As a result, salmon populations began to decline causing serious negative impacts to tribes who were dependent upon them (Cohen 1986).

The Forest Practices Act

In spite of the effects of logging on fisheries, forest practices in Washington remained unregulated though the end of the nineteenth century. In 1974, the Washington State Legislature passed the

assured access to their traditional fishing grounds as part of federal treaties signed between 1854 and 1855 (Cohen 1986).

The Bolt Decision consisted of two phases. The Phase One decision was heard in 1973 and questioned whether Native Americans had treaty rights to fish outside of their

Ninth Circuit[1] review the case. In 1983, the Ninth Circuit Court of Appeals agreed to withdraw the ruling that did not uphold the Boldt II Decision (***U.S. v. Washington,*** 474 U.S. 994, 1985) and agreed to rehear ***U.S v. Washington,*** Phase II, ***en banc***[2] or in full court**.** While the ruling was never finalized, this decision by implication gave treaty

The Impetus for Collaboration

Washington State forest managers were increasingly faced with conflict and it became increasing difficult for the Forest Practices Board and other regulators to weigh the competing interests of the timber industry, tribes, environmental groups, and federal government regulators (NOAA's NMFS and the USFWS 2006, Pinkerton 1992). In 1986, the Forest Practices Board began to revise forest practice regulations concerning riparian zone protection and cumulative effects (Call 2005, Washington DNR 2005a). Due to conflicting stakeholder interests, it became apparent that stakeholders would not be satisfied with the revisions (Gunton and Flynn 1996).

The timber industry feared that the rules adopted by the Forest Practices Board would be detrimental to their operations (Pinkerton 1992). As a result, the Northwest Water Resources Committee (NWRC), a committee comprised of northwest timber corporations, hired James Waldo to analyze their options for addressing the Phase II decision. Waldo outlined four basic opportunities for the corporations. These options included (1) a judicial attack on the Phase Two appeal, (2) congressional abrogation of treaty rights, (3) judicial attacks on a case-by-case basis, and (4) direct negotiation with the tribes. Due to the high costs of continued legal proceedings Waldo recommended the final option and the corporations agreed (Call 2005).

Tribal leaders also agreed to negotiate (Cohen 1986). Billy Frank Jr., the chairman of the Northwest Indian Fisheries Commission, when asked why he was willing to negotiate, stated, "We can keep winning in court …but it doesn't protect the life of the salmon" (Cohen 1986, 146). Because litii(di)-2(n)-2(o c)4(onf)3(l)-2-1(e)4(l)-2(dus)-ked whlmon" (aou

The success of this effort caused other stakeholders to become interested in collaboration. In 1986, Jim Waldo, Bill Wilkerson, Director of the Washington Department of Fisheries, Billy Frank Jr. of the Nisqually Tribe and Northwest Indian Fisheries Commission, and Stewart Bledsoe of the Washington Forest Protection Association met and began to discuss the potential for collaborative negotiation. After agreeing to collaborate, other caucuses (stakeholder groups) followed suit, including environmental groups, timber interests, and the Departments of Natural Resources, Fisheries and Game, and Ecology. These stakeholders requested that the Forest Practices Board withhold the creation of new rules until they could reach an agreement. The Forest Practices Board agreed to this proposal but set a deadline of December 1986 (Call 2005, Washington DNR 2005a, Gunton and Flynn 1996).

In July of 1986, the Timber Fish Wildlife negotiations opened between Washington treaty tribes, the timber industry, environmental groups and state governmental agencies. The groups reached an agreement after more than 60 meetings (Gunton and Flynn 1996). This agreement was finalized in 1987 and called the Timber, Fish, and Wildlife Agreement (Washington DNR 2005a). The State Legislature then accepted the recommendations of the negotiation and amended the Forest Practices Act to follow the recommendations made in the Timber, Fish, and Wildlife Agreement (Gunton and Flynn 1996).

The high cost and low outcome litigation process was a driving force that led to the TFW Agreement. The challenges associated with litigation provided incentives or pressures for groups to collaborate (Pinkerton 1992). If social learning is not occurring today, is it possible that the desire to avoid litigation is no longer producing enough pressure to bring groups to consensus? In Chapter 5 several hypotheses and sub-hypotheses are explored to gain insight into potential barriers to social learning. Sub-hypothesis one tests this idea.

“The TFW Spirit”

Throughout these negotiations, the atmosphere of conflict that had previously clouded over forest practice issues began to shift towards collaboration. Before the TFW

negotiations, disputes over resource use led to legal struggles and bitter rivalry. However, through interest-based negotiations a remarkable shift occurred: (1) caucuses came to see other caucuses' concerns as legitimate needs requiring attention; (2) caucus actions tended to move from competitive to cooperative; and (3) levels of trust between caucuses increased (Mangin 1989). The attitude of respect and shared understanding that emerged from this agreement came to be known as the "TFW spirit".

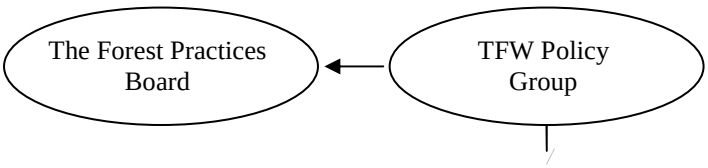
While the TFW negotiations began in an environment rife with contention, through the negotiation process caucuses came to respect and value each other's viewpoints (Mangin 1989). This represented a remarkable shift in values. Without the historical context, this collaborative approach could be difficult to understand. If new participants to the process were not taught to value collaboration, viewpoints could easily revert from collaboration-oriented to caucus-oriented. If social learning in the WFPAM program today is facing challenges could this be due to a lacking of mentoring and training of new participants? Sub-hypothesis four explores this idea.

Call (2005) suggests that several factors led to the success of the TFW negotiations. First, the skilful mediation by Jim Waldo and the mediation team allowed negotiators to build relationships and trust, therefore enabling them to reach agreements on tough issues. Second, high-level caucus leaders including Stu Bledsoe, Billy Frank, Jr., Bill Wilkerson, Marcy Golde, Dick Wallace, and others, participated in the process and were available to negotiate on behalf of their caucus. Without these leaders' involvement, negotiators would have to report back to upper management, a time consuming process which interrupts the flow of consensus building (Call 2005). If the WFPAM program is currently facing social learning challenges, could lack of facilitation or lack of high-level involvement be contributing? Sub-hypothesis three explores the lack of high-level involvement as a barrier to social learning and hypothesis four explores the lack of facilitation as a barrier to social learning.

TFW Organization

Following the TFW Agreement the Timber Fish and Wildlife Organization (TFW Organization) was created to implement the agreement. Figure 1 outlines the structure of

Figure 1: TFW Organization



Adapted From: Currie 1989, 5.

a study, the TFW Policy Committee was not required to take that study into account when making policy decisions. Lee felt that this hindered institutional learning. Could the lack of formal mechanisms linking scientific findings to policy-making that Lee describes be a factor that is negatively affecting social learning in the WFPAM program today? This question is further explored in Chapter 5 in hypothesis three.

Science: Going Where the Truth Leads

One of the building blocks of the TFW Agreement, as well as the implementation of the agreement, was trust in science. Stakeholder groups relied on the science to act as an impartial judge and jury and to direct the disagreeing parties on a way to proceed. An industry leader's statement, "we are going where the truth leads us," exemplifies this attitude (Pinkerton and Kepkay 2010). Trust in the science provided a valuable tool for bring caucuses to consensus. However, caucuses can have various expectations regarding the certainty and accuracy of the science (Kepkay 2003, 33). Today do the various caucuses of the WFPAM program have a shared understanding of how science will be used to resolve conflict? If not, is this causing barriers to social learning?

Hypothesis two tests whether the role of the science is effectively defined in the WFPAM Program.

The Forest and Fish Report

Three issues emerged in the mid-1990s that led to the creation of emergency rules, as well as permanent rule changes in Washington forest practice regulations. First, an increasing number of streams in Washington did not meet the water quality standards of the Federal ***Clean Water Act***. In Washington, by 1998, the Environmental Protection Agency (EPA) and Washington Department of Ecology (DoE) had listed more than 660 streams on the 303(d)[4] list because they did not meet the standards outlined in the ***Clean Water Act*** (Call 2005, Washington DNR 2005a).

The second issue arose over the accuracy of water typing maps. Water typing base maps were used to establish fish presence or absence in order to implement appropriate forest practices. In the early 1990's biologists with tribes and environmental groups reported sightings of fish further upstream than maps recognized. Therefore, new emergency rules that revised the gradient and width criteria for fish-bearing waters were created.

The third and final issue was the pending listing of several species of salmonids in Washington as threatened or endangered under the Federal ***Endangered Species Act*** (Washington DNR 2005a). By 1999, the National Oceanic and Atmospheric Administration National Marine Fisheries Service and the United States Fish and Wildlife Service had listed seven species of salmonids as either threatened or endangered (Call 2005). As a result of these listings, new standards would likely be required to protect these species from further decline.

In response to water quality and aquatic endangered species issues, the Board adopted emergency water typing rules in 1996 and salmonid emergency rules in 1998. In addition, in 1997 Governor Locke formed a Joint Natural Resources Cabinet and charged it with creating a salmon recovery plan for Washington State by June of 1998. This recovery plan included three components: (1) an agricultural module, (2) a forestry

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4

module, and (3) and an urban module. The Joint Natural Resources Cabinet turned to the Timber Fish and Wildlife organization to develop recommendations for the forestry module (Call 2005).

In 1996, TFW Policy invited the National Marine Fisheries Service (NMFS), the United States Fish and Wildlife Service (USFWS) and the Environmental Protection Agency (EPA), the federal agencies responsible for species listing and water quality, to join the forestry module. These officials and TFW Policy agreed that the TFW Organization would be a good forum to address the listing of threatened and endangered species and 303(d) regulations. The TFW Policy Group decided a collaborative approach, like that used in the TFW Agreement, was better than a top down approach for determining the recommendations of the forestry module. Therefore, the TFW Policy Group decided to use their group as a forum to address the forestry module. In addition to the original members of the TFW Policy Group, two new caucuses were invited to participate. These caucuses included the federal caucus and the local government caucus. The federal caucus would represent federal organizations and address federal environmental protection requirements. The local government caucus would represent local governments regarding issues of implementation and coordination at the local level (Call 2005).

TFW Policy held its first forestry module me t.

TFnd eFoc(d)-10(dr)3-1(s)au20.7(l)-2( )-10(g)1T[(e)0ge nth(e)4(nv(u20.7(72 -20.6 ()0(g)

organized and assigned to examine and frame issues based on scientific information. Essentially, the negotiations focused on the degree of protection necessary for salmon and in what areas this protection should be implemented.

Conflict and Lack of Consensus

Disagreement within and between the caucuses made reaching an agreement very challenging during the forestry module negotiations. Within the timber industry caucus some of the large companies felt the proposed regulations were too strict; others agreed with the proposed regulations but disagreed on the implementation strategies. Small forest landowners fought regulations that would disproportionately affect them. The land owned by these small landowners had a substantial amount of acreage adjacent to streams and larger riparian management zones in the proposed regulations meant that more trees would be left, therefore, negatively affecting the small landowners' profit. However, in the end the timber industry supported the proposal that included compensation to small forest landowners.

There were also divisions among tribes. Some tribes such as the Quinault and the Colville supported their own timber economies, while others such as the Muckleshoot and Puyallup supported a fishing culture. In the end, the Muckleshoot, Puyallup and Tulalip tribes opposed the final outcome (Call 2005).

As the negotiations drew to a close, environmental groups were unable to find common ground with the other stakeholders. The environmental caucus was opposed to the final outcome for two key reasons: (1) they felt there was a need to base policy decisions on better scientific information; specifically they felt that this applied to riparian buffer zones and (2) the environmental caucus was uncertain whether the forest practice rules would adapt over time as more scientific information became available. Within the Conservation Caucus there was division regarding whether they should withdraw from the negotiation. Finally, the environmental caucus announced that it did not have the resources to participate in the process and withdrew (Call 2005).

Due to the withdrawal of the Muckleshoot, Puyallup, and Tulalip tribes and environmental groups, a consensus decision was not reached. After their withdrawal, environmental groups insisted the process could no longer be called Timber, Fish and

The ***National Environmental Policy Act*** (NEPA) of 1969 states that federal agencies must integrate environmental values into their decision making process. NEPA requires analysis and full disclosure of the environmental impacts of proposed Federal actions with the potential to significantly affect the quality of the human environment. The issuance of ITPs under Section 10(a)(1)(B) or a limit from take prohibitions under Section 4(d) of the ESA by NOAA Fisheries and the USFWS are actions subject to NEPA. Therefore, the issuance of these permits to the state of Washington triggered the environmental assessment process (Washington DNR 2005a). Because Washington's forest practices had the potential to cause significant environmental impacts, an Environmental Impact Statement (EIS) was required to evaluate the Washington Forest Practices Habitat Conservation Plan (FPHCP). After developing an EIS, NOAA Fisheries and the USFWS issued the State of Washington ITPs for listed aquatic species based on the protective measures described in the FPHCP. The permit was issued June 5, 2006 and would last for 50 years (Washington DNR 2005a).

The purpose of the federal Clean Water Act (CWA) is to restore and maintain the nation's water quality (Dzurik 1996). The Washington State Water Pollution Control Act

learned" (Washington DNR 2005a, 173). The Washington Forest Practices Adaptive Management (WFPAM) Program was therefore created to ensure that programmatic changes will occur as needed to protect resources, to ensure that there is predictability and stability in the process, and to ensure that there are quality controls applied to scientific study design, project execution and the interpreted results.

Adaptive Management Program Structure

Uncertainty was an issue throughout the FFR negotiations. It was not possible in the brief span of the negotiations to resolve all the issues of scientific uncertainty facing negotiators. Therefore, FFR recommendations, many of which later became regulations, were based on limited data. However, FFR negotiators documented these areas of uncertainty in a list known as Schedule L-1. Schedule L-1 forms the base of the adaptive management program (Washington DNR 2005a). The WFPAM program was designed to scientifically research these areas of uncertainty and change regulations where necessary.

The five basic components of the WFPAM program consist of the Forest Practices Board (the Board), the Forest and Fish Policy Group (FF Policy), the Cooperative Monitoring, Evaluation and Research Committee (CMER), the Adaptive Management Program Administrator (AMPA), and the Scientific Review Committee (SRC). Each of these components plays a role in the WFPAM program and will be further examined in this section.

In many ways, this structure is similar to the structure of the original TFW Organization. Like the TFW Organization, the WFPAM program consists of the Board, Policy group, and CMER. However, the WFPAM program also has the AMPA and the SRC. The role of the AMPA is to oversee the WFPAM program and support CMER. The SRC is an independent peer review process that verifies the accuracy of CMER's work. The SCR is composed of individuals who meet the experience requirement and have no affiliation with CMER. CMER determines which documents will undergo scientific review, although generally most final reports, study proposals, final study plans, and certain recommendations undergo scientific review (Washington DNR 2005a).

CMER is responsible for conducting the scientific research that moves the WFPAM program forward (Washington DNR 2005a). The CMER Protocol and Standards Manual states that, "CMER's charge is to conduct objective scientific inquiry, regardless of ideology or organizational interests, into questions posed by the Board and FF Policy and to provide technical information and consensus based recommendations to the Board" (Pleus and Rowton 2005, 2-3). The CMER committee consists of members of each of the six caucuses. The FF Policy group essentially manages the policy forum that supports the WFPAM Program. The guidelines for the Adaptive Management Program state that, "the function of FF Policy is to develop solutions to issues that arise in the Forest Practices Program. These issues may be raised by scientific reports on rule and program effectiveness or policy questions on the implementation of forest practices" (Washington DNR 2005b). To address these issues, FF Policy is responsible for making recommendations to the Board regarding CMER priorities and projects, final project reports and forest practice rule changes or amendments. The Board is responsible for managing the WFPAM program by establishing resource objectives to infor 5-1(pons)-1(i)-2(bl)-2(e)4..3

Figure 2: Washington Forest Practices Adaptive Management Program Structure

There are many similarities between the current WFPAM program and the TFW Organization. However, one major difference is that the WFPAM program has been formally written into the rules. The current Adaptive Management Guidelines and the CMER Protocols and Standards Manual outline the adaptive management process. These documents outline the steps and timelines for different types of procedures in the WFPAM program. An outcome of this is that the FF Policy committee must take action

reached its decision on August 12, 2009 (Washington Forest Practices Board 2009a, Washington Forest Practices Board 2009b). While a DFC decision was reached, the

CHAPTER 3: THEORETICAL CONTEXT

Collaborative processes like the Washington Forest Practices Adaptive Management Program are complex. While Chapter 2 describes the historical context of the research, this chapter describes the theoretical context. Much of this information was used to shape interview questions, develop hypotheses and sub-hypotheses about potential obstacles to social learning in the WFPAM program today, and to produce recommendations on how social learning could be facilitated in the future.

various disciplinary sources and the knowledge of resource users. These plans are then monitored in order to learn from past decisions and improve future plans.

Social learning has been defined in the resource and environmental management context in several ways. Woodhill and Röling (1998, 64) defined social learning as, "a framework for thinking about the knowledge processes that underlie societal adaptation and innovation." Schusler et al. (2003, 311) define social learning as, "learning that occurs when people engage one another, sharing diverse perspectives and experiences to develop a common framework of understanding and basis for joint action." Finally, Keen et al. (2005b, 9) define social learning as, "a process of iterative reflection that occurs when we share our experiences, ideas, and environments with others." While each of these definitions describes social learning as a framework for sharing and reflecting on our experiences and building a new common understanding which will be used to collaboratively and innovatively approach existing and future resources issues, Keen et al.'s (2005b, 9) definition will be adopted for the purpose of this discussion because it is the most comprehensive.

Keen et al. (2005b: 6) state that three factors are necessary for social learning to occur. First, there must be equitable learning partnerships among communities, professionals, and governments. Second, there must be mechanisms or processes to resolve conflict, collaboratively learn, and to move from collective decisions to action. Keen et al. call these processes learning platforms. Finally, there must be a willingness to examine pre-conceptions and experiment with new ideas and approaches.

Upon initial examination it appears that the WFPAM Program meets each of the requirements necessary for social learning to occur. First, the WFPAM Program's structure allows for equitable learning partnerships through the representation of all the caucuses and open public meetings. Second, the WFPAM process encourages consensus decision making and includes a dispute resolution mechanism within the process. Third, the WFPAM Program itself allows for transformative learning. The effectiveness of Washington's forest practices are monitored at several levels (Washington DNR 2005a). These monitoring processes provide feedback into the system and the WFPAM Program provides a forum in which rules and regulations can be adjusted if targets and objectives are not being met, therefore creating a structure where transformative learning can occur.

The Components of Social Learning

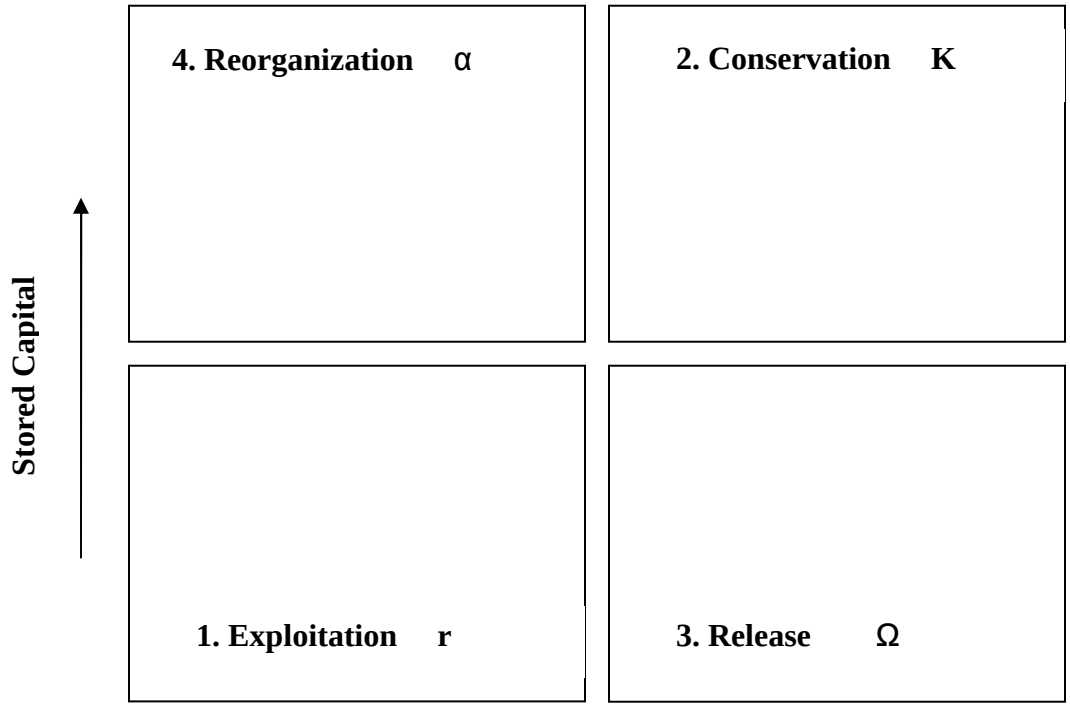
Keen et al (2005b) visualize social learning as consisting of five braided strands. Each strand represents an important aspect of environmental management. However, it is not until these strands are used (woven) together that they become a truly effective tool. The strands of social learning consist of: (1) systems orientation and systems thinking; (2) reflection; (3) integration; (4) collaboration and (5) negotiation. These strands run through all aspects of the social learning process and serve to tie together various stakeholders, levels of government, the complexities associated with ecosystem uncertainty and the phases of the social learning process itself.

Systems Orientation

The first strand of social learning is systems orientation and systems thinking. As described earlier, resource and environmental management is challenging because of the complexity of environmental decision making. Systems theory proposes a method of examining an issue by bringing together what has in the past been considered as unrelated

In Holling's view, systems undergo four cyclical changes. Figure 3 illustrates this cycle. These changes are a result of potential built up within the system and the

Figure 3: Ecological Cycles

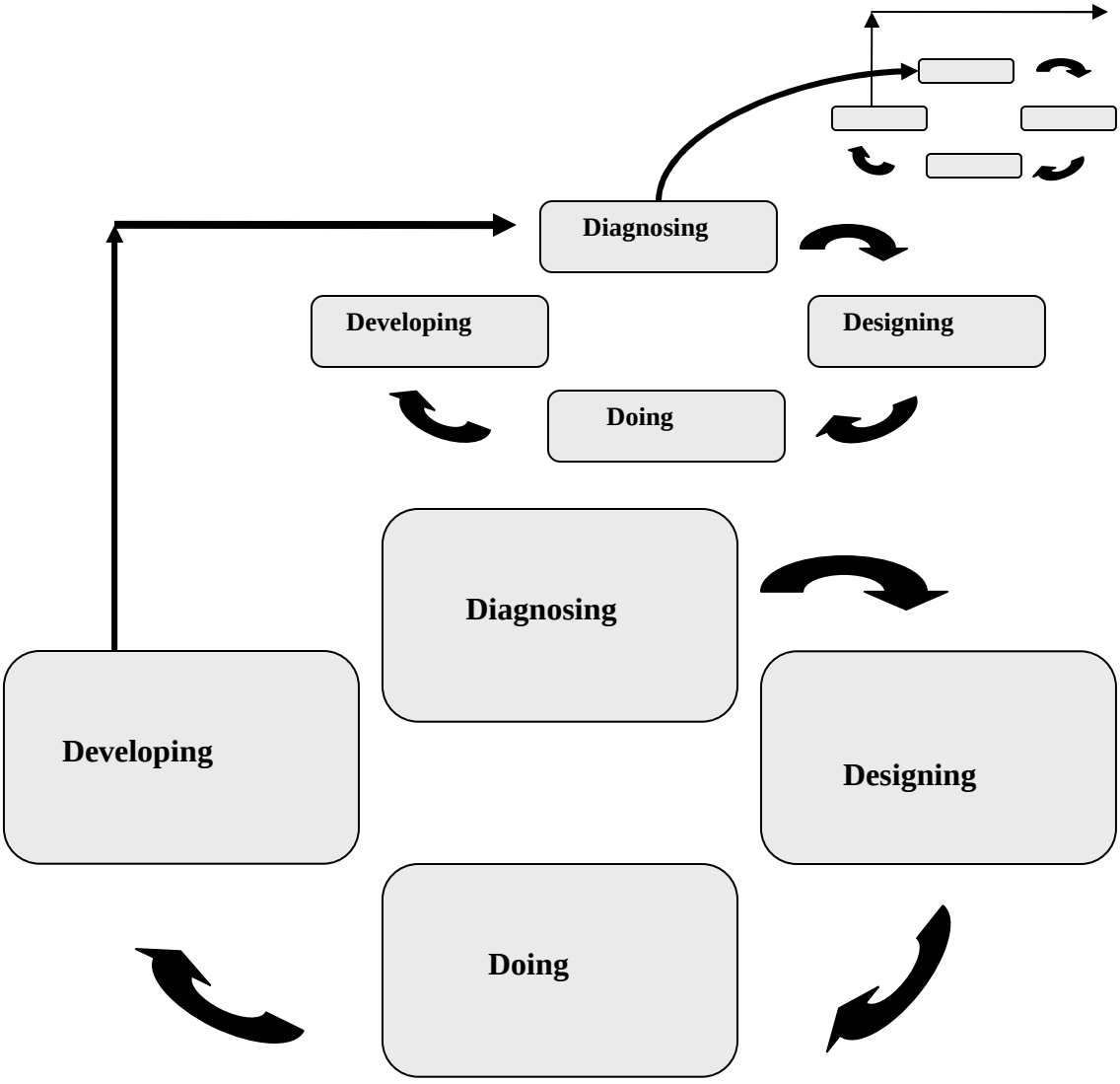


Systems thinking provides an important holistic view of environmental management issues. Ecological systems are not static but ever-changing. An environmental decision which is made based on an observation or study done at one point in time may not account for the full range of potential outcomes for that system. Furthermore, the concept of panarchies illustrates the connectedness of ecological systems and how a change in one portion of the system may cascade up or down the entirety of the system affecting the greater ecosystem in unanticipated ways. Systems thinking illustrates the need to take a comprehensive view of the issues and continually monitor management decisions and refine knowledge. This concept and its application to forest management in Washington State is explored further in the next section on reflection.

Reflection

The second strand of social learning is reflection. Reflection leads to learning by critically examining past actions and evaluating their outcomes. The process of reflection in social learning is described by Keen et al. (2005b, 9) as an iterative process of diagnosing, designing, doing and developing. The first step is diagnosing the current situation by evaluating what is occurring. In the second phase, designing, new values, interests, ideas, and sk/1 gning, new va

Figure 4: The Learning Cycle



From: Keen et al. 2005b, 9.

collecting scientific information about the outcomes of the management activity. Learning occurs as this information is analyzed (Lee 1993). The WFPAM Program is based on this principle.

Integration

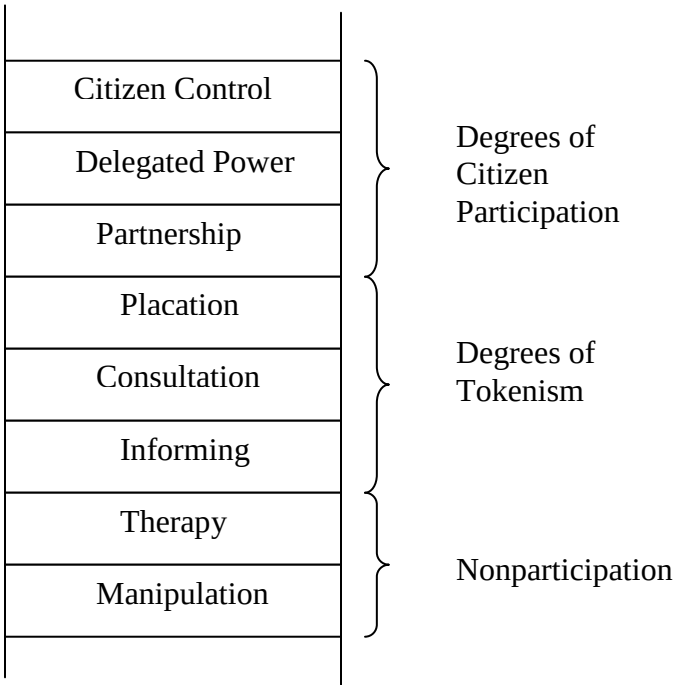
The next strand of social learning is integration. As described in the systems thinking section, sustainable environmental management is complex due to the complex

support for decisions. (3) Collaboration can build efficiency through coordination of cross-boundary activities, fostering joint management activities, and mobilizing an expanded set of resources. Finally, (4) collaboration develops the capacity of agencies, organizations, and communities to deal with the challenge of the future.

While there are many benefits to collaboration, several authors warn that there are challenges and limitations to collaborative environmental management. First, institutional culture which is resistant to change and lacks flexibility can challenge collaboration (Frame et al. 2004, 59). Other institutional challenges include lack of support from governmental organizations and difficulty reaching consensus within an organization (Gunton and Day 2003, 8; Margerum 2002; 248). Finally, the consensus rule may lead stakeholders to seek second best solutions (Gunton and Day 2003, 8). In spite of these limitations, collaboration is commonly believed to enhance environmental decision making (Frame et al. 2004, Gunton and Day 2003, Wondolleck and Yaffee 2000, Innes and Booher 1999).

Collaboration can take many forms. Arnstein (1969) constructed a ladder of citizen participation which described a scale of partnerships from bad (manipulation) to good (citizen control). Figure 5 illustrates this concept. Arnstein (1969) advocated for the public to have a more substantive role in the decision making process (Margerum 2002). While resource management agencies rarely allow for total citizen control over resource decision making, collaborative decision making using consensus building[9] is a step in that direction and is becoming more common (Selin and Chavez 1995, 189). Two forms of collaboration that have emerged from the environmental management literature,

Figure 5: Arnstein's Ladder of Public Participation



From: Arnstein 1969, 217.

Co-management

Co-management can be defined as, "power-sharing in the exercise of resource management between a government agency and a community or organization of stakeholders" (Pinkerton 1992, 331). Government's co-managing partner may be a community, First Nation, or groups of communities and First Nations. Co-management arrangements vary from situations where the co-manager plays a very small role and the government plays a large role to situations where the co-managers play a larger role than the government (Pinkerton 1992).

The effectiveness of the management effort is tied to the level of responsibility the co-manager has to manage the resource. A property right is, "the authority to undertake a particular action related to a specific domain" (Schlager and Ostrom 1993, 14). Schlager and Ostrom found that owners, proprietors and claimants that had more property rights were likely to be more successful at addressing common pool resource

issues than authorized resource users. The authors identified five key ***de jure*** (formal) or ***de facto*** (informal) property rights including (1) the right to withdraw resources, (2) the right to regulate internal use partners, (3) the right to determine who can withdraw the resource, (4) the right to sell or lease access rights, and (5) the right to transfer rights. Pinkerton and Weinstein (1995) add (6) the right to enforce harvest and habitat protection, (7) the right to monitor harvest and habitat-affecting activities, (8) the right to protect habitat, and (9) the right to coordinate with other resource users. These rights may also be conceptualized as duties to future generations. In situations where the co-managers have all of the listed property rights, co-management is very high on Arstein's ladder of public participation.

Figure 6: Co-management 'Bundle' of Rights

1. The right to withdraw resources
2. The right to regulate internal use partners
3. The right to determine who can withdraw the resource
4. The right to sell or lease access rights
5. The right to transfer rights
6. The right to enforce harvest and habitat protection
7. The right to monitor harvest and habitat-affecting activities
8. The right to protect habitat
9. The right to coordinate with other resource users

Adapted From: Schlager and Ostrom 1993 and Pinkerton and Weinstein 1995.

Collaborative Planning

Common pool resources are often subject to competing interests from various stakeholders. Frame et al. (2004, 57) state that the resolving of disputes among stakeholders over the limited abundance of natural resources is one of the primary challenges to sustainable management. Collaborative planning (CP) is an approach to

developing resource management plans which relies on consensus building and interest-based[10] negotiations.

Gunton and Day (2003) identify 10 ‘best practices’ for collaborative planning. While Selin and Chavez (1995, 190) suggest that collaborative processes be tailored to the unique demands of the situation because resource and environmental management agencies evolve dynamically in response to a host of internal and external factors, Gunton and Day’s (2003) best practices can provide a foundation or framework for creating effective collaborative planning processes. Figure 7 summarizes these best practices. Several of these ‘best practices’ are further examined in the Chapter 5 and 6 as potential recommendations to foster social learning in the future.

In their article Gunton and Day (2003) state it is important to determine if collaborative planning is appropriate for the situation. For collaborative planning to be effective there must be: (1) commitment from all stakeholders; (2) urgency that the issue needs resolution; (3) absence of fundamental value differences; (4) existence of feasible solutions. However, weighing these criteria can be challenging because the collaborations(x)=170(i)-2(s)-1(t

Figure 7: Collaborative Planning Best Practices

1. **Determine if collaborative planning is appropriate**
   - ✓ Commitment from all stakeholder interests
   - ✓ Urgency that the issue be resolved
   - ✓ Absence of fundamental value differences
   - ✓ Existence of feasible solutions
2. **Ensure inclusive representation**
   - ✓ Organize unrepresented interests
3. **Provide clear ground rules including:**
   - ✓

Defining Collaboration in Washington

Co-management and collaborative planning vary in the duration of non-governmental actor participation in the environmental management process. Collaborative planning is often the first phase of a management process during which the management plan is established. While ongoing efforts might continue in the form of an implementation or monitoring committee, the bulk of the effort is dedicated to creating the plan which will govern the management of the resource. Co-management on the other hand is the sharing of resource management responsibilities with a group or community. These management efforts do not stop or start with a phase of the process, but are intrinsic to the management process itself. Therefore the length of non-governmental involvement in the process is by definition more long term than in collaborative planning processes.

The TFW Agreement and the subsequent FFR have elements of both collaborative planning and co-management. The TFW and FF negotiations had characteristics of collaborative planning processes in that conflicting stakeholders including the federal, state and local governments, tribes, industry and environmental groups came together to negotiate a management plan using consensus building techniques as well as interest-based negotiation. However, efforts have continued beyond this initial planning phase as stakeholders implement the rules, carry out in-depth monitoring, and modify rules based on new information through the WFPAM Program. The long term nature of WFPAM therefore makes it a co-management effort. However, this is not "complete" co-management because the WFPAM Program participants do not have a complete set of rights (Pinkerton 2003). Of the nine co-management property rights, the WFPAM Program participants only have three; (1) the right to regulate internal partners, (2) the right to monitor and (3) the right to manage forests to provide habitat protection for fisheries. Because the WFPAM Program is a collaborative planning and co-management effort, both the collaborative planning and co-management literature can provide insight into this program.

Negotiation

The final strand of social learning is negotiation. While negotiation is closely linked to collaboration, these two components of social learning also vary greatly. Collaboration describes cooperation between various groups as they work towards a common goal. Conflict can arise as groups with different backgrounds, worldviews, and ideas work together. Negotiation is a tool to resolve conflict and allow groups to effectively collaborate.

Keen et al. (2005b, 15) take a constructive approach to conflict. They view conflict thus:

- Conflict is an inevitable – it is not a sign of failure of people or the system.
- Conflict is a step toward a solution – it is not a signal to give up.
- Conflict is shared – it is not the sole responsibility of any one person or group.
- Conflict is part of the process – it is not an outcome, a barrier, or an excuse.
- Conflict is a matter for negotiation – it is not the end of the line.

With the viewpoint that conflict is a stepping stone as opposed to an impassable barrier, conflict becomes easier to manage (Brown et al. 1995 in Keen et al. 2005b, 15). In cases such as the WFPAM Program, conflict arises on a daily basis and this view can make dealing with conflicts more manageable.

Fisher et al. (1991) examine principled negotiation, also know as interest-based negotiation, as a tool for resolving conflicts and reaching agreements. Principled negotiation is a method of negotiation which focuses on interests as opposed to positions. Positions are what negotiators say they must have, while interests are the underlying reasons, needs, or values that explain why individuals take the positions they do (Carpenter 1999, 6). By focusing on interests as opposed to positions, principled negotiation is designed to produce wise outcomes. A wise outcome is defined as, "one that meets the legitimate interests of each side to the extent possible, is durable and takes community interests into account" (Fisher et al. 1991, 11).

Fisher et al. 1991 identify five key aspects of principled negotiation. First, it is necessary to separate the people from the problem and treat the other party or parties with courtesy and respect. The second component of principled negotiation is to focus on interests rather than positions. The next component is investigation of options for mutual

gain. The final component of negotiation is the development of the best alternative to a negotiated agreement (BATNA). These principles are discussed in more detail in Chapters 5 and 6 as a potential recommendation for improving social learning.

Conclusions

Environmental management is complex due to the variety of ecological and socio-economic variables involved in decision making. As Holling described, ecosystems are not static but ever changing. Furthermore, there is often a variety of groups with interests

CHAPTER 4: METHODS

Literature Review

The research began with an in-depth literature review. First, I examined the history of forest practices in Washington, current Washington Forest Practice regulations, the Washington Forest Practices Adaptive Management Program, and the adaptive management literature. In addition, I reviewed the literature on common pool resources and collaborative processes that seek to address common pool resource issues as discussed in the previous chapter. This included the social learning literature, the co-management literature and the collaborative planning literature. This review grounded the research in an understanding of the common challenges faced by collaborative process and 'best practices' which can assist in overcoming these challenges.

Data Collection

The findings of the literature review shaped the research plan and assisted in the design of the research questions. Due to the limited scope required in a master's program, it was not possible to examine the entire WFPAM Program. Therefore, to scope the research I selected the Cooperative Monitoring, Evaluation, and Research (CMER) Committee and the FF Policy Committee as the focus of the study. The CMER Committee manages the scientific research which drives the WFPAM program, while the FF Policy Committee examines the science and negotiates rule changes. These two committees represent the heart of the WFPAM program and for this reason I chose them as the focus of the study.

Qualitative research methods were selected for this research. I chose qualitative research over its quantitative counterpart because of the complexity of the interactions between the various WFPAM parties and the long history these groups share. I believed

that qualitative methods, such as observation and semi-structured interviews, would allow me to gain more detailed information than surveys or other quantitative tools.

Two primary methods were used to collect data for this research, (1) observation of WFPAM meetings and (2) semi-structured interviews. Participant observation and interviewing often form the keystones of social research (DeWalt and DeWalt 2002, Rubin and Rubin 1995). Participant observation is a valuable tool for learning both explicit[11] and tacit[12] cultural aspects (DeWalt and DeWalt 2002). While participant observation is often thought of as a tool for fieldwork in non-western cultures, it is also useful for gaining insight into institutional culture. One-on-one interviewing is another important tool as it allows others to describe how they think and feel in detail beyond what can be captured in other research tools such as surveys (Rubin and Rubin 1995). The following sections describe these methods in detail.

Ethical Considerations

A key concern in qualitative research is the fair and just treatment of research participants. The research design was submitted to Simon Fraser University's Ethics office and approved. To ensure participants had sufficient information to decide if they wanted to participate in the research, I provided a letter of introduction. The purpose of this letter was to share information about the purpose of the research with potential participants, explain how data would be collected and used, and to request their involvement in the study. This letter is included in Appendix A. Due to the sensitivity of issues discussed in the interviews I decided the identity of participants would be kept confidential. Research participants had the opportunity to review the draft of this manuscript and their quotations before the final version was prepared.

[11] "Explicit culture makes up part of what we know, a level of knowledge people can communicate about with relative ease" (Spradley 1980, 7 in DeWalt and DeWalt 2002, 1).

[12] Tacit culture is aspects of culture which remain outside of our consciousness and awareness (DeWalt and

Observation of Meetings

generation. The TFW generation consists of participants who became involved in the process during the negotiation or implementation of the first collaborative agreement, the TFW Agreement. Dates of involvement for this generation range from 1987 (or pre-1987) to 1995. The FF generation consists of participants who became involved in the process during the negotiation and implementation of the second collaborative effort, the FFR. Dates of involvement for this generation range from 1996 to the present. The purpose of this sampling was to help shed light on how viewpoints within the process may shift over time, and whether or not learning was passed on to new program members. In addition, I interviewed participants throughout the state to capture state-wide views of the process.

I used the snowball technique to identify key actors in the process. At the end of many interviews, I asked the interviewee if there was anyone else they felt I should be sure to speak to. When the same names began to come up repeatedly, I felt that I had identified the key actors in the process. While I tried to speak with as many of these key actors as possible, time constraints and scheduling conflicts did not permit me to speak with everyone.

During the course of these interviews I spoke with at least one member from each caucus. The majority of the interviews were held with past or current CMER and FF Policy Committee members. Nine of the participants I spoke with were CMER Committee members and ten were FF Policy Committee members. The remaining three members supported the WFPAM program through various other roles and committees. Eight of the WFPAM program participants I interviewed were members of the TFW generation. Eleven participants were members of the FF generation. The 'generation' of the three remaining participants is not clear because this question was not asked during the interview. Generally, for the purpose of transparency a researcher would identify the caucus, the length of participation, and the location of each of the interviewees. However, due to the small size of the WFPAM Program it would likely be possible to deduce the identity of the interviewee, were this information provided. Therefore, in order to protect the identity of the research participants I omitted this information from this report. To provide a degree of transparency, each interviewee is assigned a number.

Data Reporting

The credibility of qualitative research, like its quantitative counterpart, is determined through validity and reliability. In qualitative research validity is achieved through triangulation. As described above, in order to ensure validity I triangulated my findings with similar research on the WFPAM Program, follow-up interviews, and review of the findings by interviewees. Reliability in qualitative research is achieved through saturation. Saturation occurs when further inquiries into a theme fail to yield new information (Charmaz 2006). To ensure the data were reliable I attempted to reach saturation. However, in some cases due to the scope of a Master's project and the contentious nature of some issues, saturation was not reached. In these cases inconsistencies in the data are explored. Qualitative research is based additionally on transparency and communicability (clear description) (Rubin and Rubin 1995). To ensure transparency this research clearly outlines the research design, findings and conclusions. Finally, rich descriptions of the findings, including quotations from the

Program. Examples of external factors that were not considered in the paper include: climate change, salmon interception, and changes in the global market.

CHAPTER 5:

communicate and have a basic level of trust for social learning to occur. Therefore, in order to assess social learning, participants were asked about trust and communication in the WFPAM Program.

In the interviews 19 of the 22 research participants were asked about the level of trust between the caucuses involved in the program. Questions ranged from "How would you define trust" to "Could you rate, on a scale of 1-5, the current level of trust in the process." Six of the 19 participants stated they felt there was a low level of trust between the caucuses. The following quotations are examples of participants' comments.

> … when I got here I realized that there are a lot of veterans of the TFW days who were pretty cynical and I was new and fresh and smiley and liked everybody and [I] could tell there was something going on and vowed never to become that way. But, I guess for me it [trust] has plummeted and is down to approximately 0 right now. [17]

> I think trust is the number one most important thing. Sadly and unfortunately I would have to report for your research that I don't believe that there is any trust currently and that is a major obstacle to this program. [18]

Thirteen of the 19 participants that were asked this question stated that the level of trust varies greatly. Different reasons were suggested for the varying levels of trust. Several participants stated that trust varies from caucus to caucus. One participant stated,

> I think it [trust] is strained right now. I don't think that there are high levels of trust among some of the caucuses and I think those trust relationships are differential. If you look at the six caucuses, caucus one may trust caucus two a lot more than it trusts caucus three so you don't have equivalent trust among the caucuses. Where trust is strained right now are among the caucuses that have significantly different objectives. [12]

Others suggested that trust is dependent on groups following through with what they agreed to. If caucuses have not completed what they had agreed to do in the past, this can strain relationships and reduce trust. For example, one participant stated, "When people don't deliver what they said they would deliver, your trust level goes down and so we all have expectations of each other and if those expectations aren't met then it is difficult to

trust" [6]. Another participant stated trust is dependent on having time to develop relationships.

> There is a friendship that develops over time and some level, varying levels of trust. So I think there is a genuine desire a lot of the time to see the other person's side of it, and see if they can't fit their own needs into that just because of the personal connection that is there. But that doesn't always work. [2]

No participants described a high level of trust among all the various caucuses. At least one member of each caucus is included in this sample. This suggests that trust does not exist or is not strong amongst all the caucuses. Without trust, it would likely be difficult for groups to be able to work together effectively enough to allow social learning to occur.

Thirteen research participants were asked if there is effective communication within the WFPAM Program. One of these thirteen participants felt that communication within the WFPAM Program was fairly effective. This participant stated, "It [communication] is not bad. I think there is some lack of follow through" [11]. The remaining twelve participants who were asked this question, as well as an additional participant who was not asked this question, stated that communication is lacking in the process. One member of each of the caucuses was represented in this group of 12 participants. One participant stated, "I think the communication is not as robust as it should be" [14]. Other participants described a lack of communication between the various caucuses.

> It used to be that in old CMER and old TFW,….industry and tribes would step aside and say here is what I need, lets do it this way and then go back and say "stop arguing here is what we are going to do." They would work things out between them in the old days. I don't see that happening much if at all any more. [22]

Participants also described communication challenges within the WFPAM Program, particularly between CMER and FF Policy.

process today.

First, I generated the hypothesis that social learning is more challenging in the WFPAMP Program today than previously as a result of internal and external factors which have changed since the TFW Agreement. While this hypothesis was gener

that there is less commitment to the WFPAM Program then there was to the TFW Agreement due to the lack of consensus agreement.

The third sub-hypothesis examines leadership. Strong leadership was one of the factors that led to the success of the TFW negotiation (Call 2005). A lack of strong or effective leadership could be a factor limiting social learning in the program today. This idea was tested with the hypothesis that there is not the same level of leadership in the process today that there was during the negotiation and implementation of the TFW Agreement.

Finally, while the TFW negotiations began in an environment rife with contention, through the negotiation process caucuses came to respect and value each other's viewpoints (Mangin 1989). This represented a remarkable shift in values. Without the historical context, this collaborative approach could be difficult to understand. If new participants to the process were not taught to value collaboration, viewpoints could easily revert from collaboration-oriented to caucus-oriented. To test this idea I hypothesized that collaborative values were not passed on from the TFW generation to subsequent generations involved in the WFPAM Program through

Much of the collaborative planning and dispute resolution literature states that a clearly defined process is essential for bringing stakeholders to an agreem

that there is not pressure bringing stakeholders together are members of the TFW generation, or members that became involved around the time of the TFW negotiation.

potentially result in more stringent regulations. This idea was generated late in the data analysis phase. Therefore, no participants were asked about this possibility and no analysis was performed. However, this would be a useful issue to examine in future research.

One participant raised an important point regarding the assumption that the pressures that fostered the TFW Agreement might continue to foster collaboration. This participant explained that conditions have changed over the last 20 years and conditions that fostered collaboration during the TFW negotiation are different from the current conditions in the WFPAM Program.

> In my mind there is not a direct one-on-one relationship between the original TFW and what is going on today. I mean the economics have changed dramatically. Politics have changed. Management techniques and operations have changed and the issues facing the population here in Washington have changed and so it is hard to say we should go back and duplicate what we did in the past. I think what we need to do is create the collaborative atmosphere that is correct for today. [3]

Therefore it is important to understand how dynamics have changed between caucuses

> believe a family owned company, and they are not going to change. But other companies that are under these other tax instruments such as REITs and TIMOs, they may have a different objectives now. Because of the more disparate mix of forest landowners now within WFPA, it becomes harder for them to have a unified position when they come to the table. So it is harder to negotiate with them now. [9]

Another participant mentioned diversification within the tribal caucus.

> Another factor is the tribes. It used to be one person could speak for the tribes. The tribes perhaps though not as splintered maybe as the WFPA, have splintered, somewhat…. So you are getting less ability for one person to speak for many there. [22]

Therefore, caucuses that may have had a more homogeneous viewpoint on an issue in the past now may have divided and splintered into seeing an issue from various viewpoints.

One participant also mentioned that changing market conditions limit the industry caucus' current ability to negotiate due to companies' reduced profit margins.

> …much of the industry in 1987 was still in the hands of more or less the original owners or the people who acquired the land, you know during expansion and in early statehood and …. and now for the most part almost all of the land has changed hands and is now in the hands of people who have purchased the land at market value and they are not "exploiting" naturally grown timber any more; they are harvesting what they can grow and the profit margins on that are very slim and so they are operating in a completely different economic position than they were in 1987. [3]

This comment suggests that due to changing economic conditions, the timber industry may not be able to negotiate the way they did in the past.

Another important difference that was discussed above is the involvement of the Services and issuance of the ITP. One participant commented on this difference and explained that federal agencies are bound by federal rules and regulations and that this changes how they interact with the process.

> We now have the federal government intimately involved with what we do and that is a significant change because they have, the federal agencies have, a different way of acting and working with these issues. They are prohibited from negotiating solutions. What they can do is sit in the room and tell you what they think might work. But in the end they have to go through their process of public review before they come to a decision,

the lack of widespread support for the FFR be one of the factors currently hindering social learning in the WFPAM Program? To test this idea I hypothesized that there is less commitment to the WFPAM Program then there was to the TFW Agreem.56 0 Td 4p5cqeg

thing (FF) got started then on that foot, anything I gave I lost, and now everyone feels like they lost the negotiations. So anything that needs a change now everyone says well I already gave at the office. I have heard them use that very phrase. I gave at the office, meaning, I already gave till it hurts and I am not giving any more. [22]

What continually surprises me was the consistent message that you get from everyone was they got screwed and it doesn't, it is everybody that is there with the possible exception of the local government. From the industry perspective if you are a large industrial, it is we gave up too much. If you are a small landowner, it is you ignored us completely throughout the process. If it's the tribes, well a lot of them walked away from the table and weren't even there at the end, so they have no ownership in it. If you are the conservation caucus it is, well so many things got agreed to that they negotiated political decisions with little science behind it and we got screwed in that way. And you have the agencies who are trying to implement all of it, kind of caught in t

> about Forest and Fish Policy or CMER or the individual projects, no one has as much time to put into those things as they should. [4]

This shortage of time effects the program in negative ways as the participants do not have the time to dedicate to learning the rules, communicating with other stakeholders, taking up leadership activities, mentoring, and carrying out all the readings and reviews necessary for bringing scientific studies through the WFPAM Program.

Seven of the eight participants were asked how time and funding affect the process. In addition to these seven participants, nine other participants mentioned a lack of commitment to funding for the WFPAM Program. The eighth participant commented on another aspect of the program. One participant said,

> One of the challenges, we are trying to work through is that L1 list, and we are having this issue of a funding short, of an expected funding shortfall starting I think in 2010, is where we will have more projects that we are supposed to be working on than we have funds to do and so that means that the likelihood of picking up new projects is very low and that creates some tension… [14]

The lack of funding is particularly troublesome to members of the small landowner caucus and other caucuses who must fund their participation from a limited budget. Initially the WFPAM Program received a substantial amount of federal support. However, soon this funding will come to an end. In addition, due to the declining American economy, issues with funding are likely to continue or become more serious.

To conclude, because this idea emerged during the analysis phase of the research, no participants were directly questioned about how the outcome of the FF negotiation currently impacts collaboration in the WFPAM Program. However, several participants made comments that were applicable to this analysis. Nine participants questioned whether all participants were truly committed to the process and five participants stated that there is a feeling of dissatisfaction with the outcome of the FF negotiation. These findings suggest that lack of consensus did affect collaboration in the WFPAM Program. Due to dissatisfaction with the outcome of the FFR caucuses may be using the WFPAM Program to get back what they feel they lost. This potentially represents a major barrier to social learning because, rather than building on shared experience and knowledge to

> There is a disconnect between what happens at the program level, so CMER participants and Policy participants and what the principals or employers are aware of and it creates kind of a vicious circle because at the CMER and Policy tables… you have certain caucuses who say we need to make sure we can show it is working at this level so that I can go get my principals' attention who are over worked and under resourced just like we are and then there is other people in the program who would say no, we need to get the principals to agree to this and to pass it from the top down and I think [this is] one challenge that we are facing…. [18]

This comment suggests that there are challenges with not having the caucus leads at the FF Policy table because the FF Policy representatives must return to their respective caucuses and receive approval from the caucus before they can agree to a decision. This adds time to the negotiation process. It is also likely more challenging for a FF Policy member to create support for a proposal within their caucus than it is for a caucus lead.

Another participant suggested a reason that the caucus leaders have become less involved with the process.

> The sense of urgency has sort of gone away…. all the leadership of all the various caucuses and so forth have many other issues they have to deal with and this is one that they have dealt with many times in the past and I think that there is a feeling out there that we have dealt with it from a policy point of view and so much of the stuff we are getting down to is the uncertainty of the science. There is a lot of technical stuff going on, that is what the difference is. So I think that is not necessarily the spirit of collaboration that has gone away but the big picture or the framework has been laid out and the leadership has gone on, they have moved on and it has been downloaded to staff… [21]

This comment suggests that after the initial FFR was reached the sense of urgency around the forest practice issues subsided and caucus leaders moved on to address higher priority issues.

In conclusion, these findings suggest that there is a lack of leadership within the

findings were significant and accepted the hypothesis. Because one of the caucuses was not included in the questioning, the strength of this finding is moderate.

Sub-hypothesis Four: Mentoring and the TFW Spirit

the TFW generation. An additional member of the TFW generation responded that s/he

Hypothesis Two: The Role of Science

The first hypothesis and its four sub-hypotheses examine the nature of the social contract that the stakeholder groups have created and how this contract has been modified over time as a result of changing external and internal factors. However, the final three hypotheses examine if the WFPAM Program has sufficient program protocols. The second hypothesis examines the role of science in the WFPAM Program by testing the hypothesis that the role of science in not clearly defined. This hypothesis emerged from the data analysis and as a result, no participants were directly asked about the role of science in the process. However, two themes emerged from research participants' comments: (1) policy agendas enter into CMER and (2) inconsistent viewpoints of how science is used to draft policy decisions.

The first theme raised by participant comments is the issue of policy agendas entering into CMER decisions. The Adaptive Management Program Guidelines draw a clear line between the policy side of the process and the science side of the process. This line is called the CMER/Policy firewall and it is demonstrated in Figure 2 taken from the Adaptive Management Program Guidelines**.** Although this firewall clearly distinguishes the policy side of the process, which addresses the economic and social concerns of the stakeholders, from the CMER side of the process, whose responsibility is to conduct pure science, ten participants stated that they feel that political agendas are entering into the CMER committee. Members from five of the six caucuses commented on this topic. Below are three examples of these comments.

> There is a variety of needs being brought to the table, some of which benefit by maintaining the status quo, some of which benefit by slowing other projects down, [which] makes money more available for some other project. Some folks come to the table with their intention to not move science forward and that is the reality of it. They are there to slow things down and so they are the question monsters, they are the 11th hour monkey wrenchers …. That doesn't happen that often, but if you watch the wheels, you know, after awhile you start realizing, that oh there's certain topics, especially certain topic areas that benefits people to maintain the status quo, certain groups and I am talking all ends of the spectrum, you know maintaining the status quo or keeping certain work from occurring is beneficial to them in some way or another so their intention to come to a meeting and monkey wrench or throw in these 11th hour comments is to slow things down. Some folks come into it, they are

just blind, they don’t know, maybe haven’t prepared for the project, you know or something and they, their questions are all valid but they, they’re based on a lack of knowledge but uh that’s not entirely the case. [14]

There is a theoretical firewall between policy and technical

> because the scientists should be providing the best scientific information and recommendations they can for the Policy group and then the Policy group makes a management decision of what to do with that. When you have the mix at the table, to me it doesn't work…….Well again it puts the, if you are a scientist and you work for your particular organization and you are sitting listening to the Policy person present the caucus policy position that has to affect the way you approach the next discussion at the technical group. [4]

This comment suggests that because FF Policy members do not have the time to dedicate to the science, CMER members are being brought to FF Policy meetings. As a result CMER members are being exposed to caucus views which are influencing their decisions. The other comment suggested that participants are inherently biased, because they receive funding from their caucus.

The interviews raised another science related theme regarding inconsistent beliefs about the way that science should inform policy decisions. As described earlier, because this theme emerged during the analysis participants were not asked about how science informs decision making. Instead, I compared and contrasted participants' statements on how science is used to make policy decisions. While this method can produce some

This comment suggests that there are varying opinions on the role science will play in policymaking and that the role of science is not clearly defined by the process.

The question of the role that science plays in the process came to the forefront during DFC negotiations. The initial DFC study carried out by Dave Schuett-Hames suggested that the regulatory DFC targets were below the basal area found in natural stands. However, the study did not provide policy direction. Some felt that the regulatory target should reflect the average basal area found in the Schuett-Hames study. Others felt a rule change was not necessary as the McConnell study found that DFC targets were often met (McConnell 2007). One participant stated,

> You have to be willing to live with the decision science gives you and then move on, and then a few years down the road go back and say we have tackled some of these [other] issues, now we can go back and revisit the DFC, we just don't think that is really right and here is some new evidence after we implemented the new rule why we think it is not working. [18]

Another stated,

appears that the role of science in decision making has not been defined and is not agreed upon by participants. Because no participants directly commented on this issue, only four of the six caucuses commented on this issue, and the analysis was conducted by comparing comments on other issues, the findings are weak. However, this comparison does suggest that this is a question that may merit further research.

Hypothesis Three: The Role of Clearly Defined Program Guidance

The third hypothesis states that the Adaptive Management Program does not have clearly outlined process rules and regulations. The collaborative planning literature suggests that effective rules and regulations are important in the success of collaborative processes. Currently, several procedural documents exist to guide the WFPAM Program. These documents were created following the establishment of the WFPAM Program in order to help guide the WFPAM Process. The first of these is the Adaptive Management Guidelines. Several additional rules were created as the WFPAM Program matured and these include the CMER Protocols and Standards Manual and the CMER/Policy Interaction Document. These rules have formalized the process and have helped to address the policy gap that Lee (1993) identified by connecting the science/policy loop and ensuring Policy acts on CMER scientific findings. However, are these process guidance documents enough to ensure the process can run effectively?

In examining this hypothesis, several key themes arose from the interviews. The first was the lack of clearly defined process rules. Ten participants were asked if they felt the WFPAM Program has clearly defined rules and process guidance. Three of these participants, and five other participants who were not asked this question, stated there is a lack of clearly defined process rules or described an incident where there was confusion over the rules. Members from four of the six caucuses are included in this group. The following quotation provides an example of these comments.

> That is usually what the challenge is, that we are going to do it through an adaptive management process but we don't have a process and frankly that is what has happened here in Washington. We said we are going to do it through adaptive management and we signed on the dotted line and then after the fact we have come up with a process, the process has only been designed by doing.…In as much that I am no big fan of process, or of developing process, it helps establish the path and if you know where the

> path is, there is a bright and shinny path you can follow you know and no matter how dark the wood. [14]

Two of the participants who were asked about the effectiveness of the WFPAM Program rules stated that there is a need to balance rules and using rules as delay ta

Yeah it [the WFPAM Program] has got a lot, got loads of potential and I would hate to see a great process and again, I mentioned earlier about differentiating between a great process that is not being worked well from a process that needs to be changed, and I don't think we have a process that needs to be significantly changed. I think we need to improve our behaviour within the process and tune the process to work a little bit better. It is like having a Ferrari in the driveway. If you don't know how to drive, you are going to drive down the street and not get anywhere. You are going to stall it and fry the clutch and drive into a telephone pole so the driver is just as important as the car. If the participants can be viewed as the driver and the car is the process or the program, I think we have

needs to whatever, and people need to have bought into that before hand but they don’t do that, they wait till the study comes out, the information gets put on the table and then based on what it is they decide to

these concepts (Washington DNR 2005b). However, three themes from the interviews tied directly to the failure of these principles to be consistently applied.

First, nine of 22 participants, from four of the six caucuses, stated that members of the WFPAM Program were not being open about their interests. The following two quotations illustrate these ideas.

> But I want it to be based on putting all of the cards on the table and being upfront with everybody. People seem to beat around the bush and are so careful about what they say at the table. Just be upfront and honest. [16]

> So I don't know how much has changed uh I don't know, I guess some people felt like the discussions they had back in the old days were honest and frank and people are more guarded now and maybe that is an indication of trust being lower. [10]

Based on these comments it appears that not all participants openly state their interests.

Next, eight of 22 participants, from five of the six caucuses, stated that members of the WFPAM Program are becoming entrenched in their positions and are unwilling to look for other solutions. The three quotations below provide examples of these comments.

> You know we came, the way it was paraphrased by one of the earlier members was, we came into this process and you had a problem and that became my problem and now it's, the agendas are all out there at the table and they say I will give you this but there is no compromise, … I think it is really interesting that we, we point it out to ourselves, nobody has left the table, so there is a desire to get some closure on these things and I think, but, what we constantly have to do is, you know, remind ourselves that we are here to work together and not to get specific agendas, you know that is maybe only pertinent to certain groups. [5]

> than saying well what is the problem you are trying to solve and how can I do that, it starts you down a bad road. [4]

> I think we need to have caucuses make a much greater commitment of their people time and I think we need to have caucuses commit to not unnecessarily delay things to really own the problems together solve problems and make changes together and to not think so much about just what is in it for me. [12]

Based on these comments, it appears that several caucuses decided that they are unwilling to negotiate on certain issues. This breaks one of the key rules of negotiation.

The WFPAM Program contains a dispute resolution process. The purpose of this process is to provide participants with additional opportunities to reach an agreement when the group has failed to reach a consensus decision. FF Policy had not invoked dispute resolution at the time of this research. Therefore, while the FF Policy committee co(c)4(h)-10(56o pa)-6(r)(956o pa)-6(r)raee

process isn't working by immediately entering into dispute resolution, and trying to maintain the status quo by stalling the process.

While dispute resolution was not used in the past, it appears that some feel it would have been beneficial to invoke the dispute resolution process. One participant stated,

> I think what also is apparent is that we sent consensus recommendations to the Board when there really wasn't true consensus around the issue because people were closed and I think next time around if a dispute arises I think people will be more ready to activate the dispute resolution mechanism that exists within Policy and not just sort of punt it to the Board. [12]

Based on this comment and observations of FF Policy meetings, it appears there will be a greater willingness to invoke dispute resolution in the future.

To conclude, I return to the hypothesis that the lack of a facilitator is reducing social learning in the process. While 11 of 22 participants interviewed felt that the process would benefit from the use of a facilitator, other participants are hesitant to hire a facilitator. These reservations appear to stem from-2(hi)464(I)13( )-10(e)]TJ 2(l)-2(i.7G 20(c)40 Td]TJ

CHAPTER 6: WHERE ARE WE GOING? CONCLUSIONS AND RECOMMENDATIONS

To summarize, the objectives of this research were threefold. The first objective was to identify whether social learning is occurring within the WFPAM Program. This objective was examined in Chapter 5 and it was concluded that there are likely barriers to social learning within the program. It was assumed that for social learning to occur the caucuses would have to maintain a basic level of trust and communication. However, the data suggested that there are low levels of both trust and communication. Nineteen of 22 research participants were questioned about trust in the process. Six of the participants felt trust was low in the program and the remaining 13 participants felt that trust varied from caucus to caucus, suggesting that there was a lack of trust between some caucuses. Thirteen research participants were questioned about the effectiveness of communication in the program. While one of these participants stated communication was effective, the remaining 12 participants noted a lack of communication in the program. This data suggests there are barriers to social learning in the WFPAM Program. FF Policy's inability to provide the Board with a DFC policy recommendation further supports the argument that social learning has stalled in contentious situations within the process.

Because analysis of the first research objective suggested a lack of social learning in the WFPAM Program, the second and third objectives were (respectively) to hypothesize about barriers to social learning and develop recommendations to overcome these barriers. The status of social learning in the WFPAM Program could not be ascertained until midway through the research. Therefore, hypotheses on barriers to social learning were generated after the bulk of the interviews were conducted. As a result, much of the data analysis was performed on research participant comments that were not always in direct response to the question identified in the hypothesis. While this form of analysis can provide useful information, it has limitations. Therefore, levels of confidence are stated with each finding. The remainder of this chapter will summarize

the findings of the analysis and offer recommendations on how current program participants might overcome social learning barriers by building upon past and existing social learning frameworks and utilizing collaborative ‘best practices’. Potential future research opportunities are also identified.

Due to the weakness of these findings, future research on this topic is recommended. A useful future research direction could trace the impetuses of the TFW negotiation and see if these forces continue to bring caucuses to consensus and what (if anything) these forces have been replaced with. Future research on how the ITP has affected the program is also recommended. Is the ITP providing an incentive for groups to collaborate? Alternatively, could the issuance of the ITP be stalling social learning because those working in the forest industry feel their interests are protected under the ITP and therefore their incentives to collaborate are reduced?

The second sub-hypothesis states that there is less commitment to the WFPAM Program today then there was following the TFW Agreement because caucuses did not reach a consensus-based agreement during the FF negotiation. Five participants from three caucuses mentioned that caucuses feel that they lost during the FF negotiation. In addition, nine participants from three caucuses mentioned they felt there was a lack of commitment from all the caucuses in the program. This suggests that because caucuses feel as if they were cheated during the negotiation, they are using the WFPAM Program as an opportunity to gain back what they feel they lost. However, this does not represent a true commitment to adaptive management and this is what may be reflected in the other nine participants' comments. Because the sample size for this analysis was small and because only 3 caucuses commented on this issue, the strength of the finding is moderate. Future research is recommended on this topic. The findings suggest that a recommitment to process is required. Because the progress can be stalled by one actor in a consensus based program, commitment from all caucuses will be required to truly recommit to the process. [15]

In addition, a lack of time and funding commitment were identified as part of this analysis. Fifteen participants from all the caucuses identified a lack of time dedicated to the process and sixteen participants from all the caucuses identified a lack of funding dedicated to the process. This strongly suggests that there are insufficient resources;

[15] At the time of this research a TFW Reinvigoration

human and financial, dedicated to the program and that the appropriate resources should be allocated. However, this will likely prove challenging within the current economic climate.

Sub-hypothesis three tested the possibility that the WFPAM Program is lacking leadership. The literature review identified leadership as an important factor in the success of the TFW negotiations. Six research participants were questioned on the

While the first hypothesis and its four sub-hypotheses explored new external and internal factors which may currently be impeding social learning, the final three hypotheses examined the effectiveness of protocols which have been established to guide the WFPAM Program. The fifth hypothesis tested the idea that the role of science is not clearly defined in the WFPAM Program. This hypothesis was generated purely as a result of participant comments. The program guidance, including the Adaptive Management Program Guidelines and the HCP, identify a science/policy barrier between CMER and FF Policy. However, ten participants commented on policy agendas entering into CMER. Four of the six caucuses are represented in this group. In addition, from participants' comments I observed varying opinions on how the science would be incorporated into policy. Therefore, the findings suggest that there are conflicting viewpoints on the role of science. Based on these findings it is recommended that the various levels of the WFPAM Program assess discrepancies on how science studies will be translated into policies and clarify this process. Because only 4 of the 6 caucuses commented on the topic, the strength of the finding is considered moderate. Further investigation on this topic is recommended in future research.

Clear process guidance is a factor identified in successful efforts within the collaborative planning literature. Hypothesis three tested the possibility that the WFPAM Program does not have effective process guidance. Eight participants mentioned a lack of clear process guidance, two participants noted the need to ensure the program is not sidetracked by process, and five participants stated the process guidance was effective. Members from five of the six caucuses commented on this issue. In addition, ten participants noted that many participants are not as familiar with the rules as they could be; nine participants said that the WFPAM Program are not held accountable by the rules; and five participants mentioned a need to up-date outdated rules. In addition, ten participants identified a need for a comprehensive strategy. Because there were varying opinions on the effectiveness of the rules, only five of the six caucuses' members commented on this issue, and factors such as a lack of knowledge of process rules can confound findings on the effectiveness of process guidance, the strength of these findings is moderate. The findings suggest that this topic warrants further exploration in future research.

The findings for hypothesis three suggested there was a lack of understanding of the program rules, a lack of accountability to the rules, and a need to update outdated rules. Furthermore, the program was lacking a comprehensive strategy to guide the process. Therefore, several recommendations are made. First, training on the rules is suggested for all levels of the WFPAM Program committees.[16] Second, it is recommended co-chairs be familiarized with the rules and that they enforce these rules at the various WFPAM Program committee meetings. Next, it is suggested that out-dated rules be updated through negotiation. Finally, the findings suggest that a comprehensive strategy would be a useful tool for guiding the WFPAM Program. The development of this strategy should encompass all the levels of the WFPAM Program and all levels should agree on the research goals and methods identified in this strategy.

Finally, the fourth hypothesis tested the possibility that the lack of a facilitator is hindering social learning in the WFPAM Program. Eleven of 22 participants suggested a facilitator would benefit the program and one suggested it would not. Reservations about employing a facilitator appeared to arise from lack of success with facilitators in the past and lack of funding. A lack of adherence to basic negotiation principles also suggests the need for a facilitator. As half of the research participants mentioned that having a facilitator would benefit the WFPAM Program, and because observations revealed that the principles of alternative dispute resolution are not always upheld during meetings, I felt that these findings were significant and I accepted the hypothesis that lack of a facilitator may be reducing social learning in the process. Because half of the participants, including members from each of the six caucuses, suggested a facilitator, the findings are considered strong. Two recommendations stem from these findings. (1) A skilled facilitator experienced in scientific based negotiation would likely assist the WFPAM Program participants in finding mutually satisfactory solutions to disputes. (2) In situations where a dispute cannot be resolved, it is suggested the internal dispute resolution should be invoked.

[16] Following the fieldwork for this research, training for CMER and Policy on the WFPAM Program rules was carried out, and follow-up interviews suggested that this training was beneficial (Personal communication, 2 members of the WFPAM Program, [22], September 23, 2009 and [3], October 12, 2009).

I can be reached for any questions, or if you think of further information I should have at (208) 559-8152 and at kfurman@sfu.ca or Dr. Pinkerton at (604) 291-4912 and at epinkert@sfu.ca. I do not anticipate any risks with the study, but if you have any concerns or complaints feel free to contact Dr. Hal Weinberg, the director of the Office of Research Ethics, at hal_weinberg@sfu.ca and at (778) 782-3447. Please keep a cop

Yes

Appendix B: Sample Interview Framework

Interviewee Information

Interviewee name and current title_____

Phone_____ Email_____

Other contact_____

Preferred means of contact_____

Willing to review draft? (Y/N)

Date and Time_____

Place_____

Checklist

____ Go over letter of introduction
- _____ Goal of research
- _____ Identity will remain confidential
- _____ Length of interview
- _____ Contact info
- _____ Research results will be posted on web

____ Permission to record

____ Any questions for me before the interview?

When you became a CMER/Policy member did you have a mentor or were you given training on the Adaptive Management process and process rules?

If mentor

What do you feel were the most valuable lessons learned from your mentor?

Do other participants have mentors?

If training

What areas did the training cover, for example TFW histor T5m-2(a)6 0(r)3(e)-2(e)4(s)-1

Do they exercise leadership in breaking impasses and building trust in a way that is helpful, on a scale of 1-5, 5 being the most effective?

> What principles do they invoke or what tactics do they use to make members work together effectively?

How would you rate these on a scale of 1-5, 5 being the most effective?

Do you feel they are neutral?

> Why or why not?
>
> (If not) Would a more independent and neutral facilitator improve the processes?

(CMER/Policy co-chairs) What is your understanding of the co-chair role?

> Were you trained in some way to meet these expectations of this role?
>
> What practices do you use to build consensus or get the group to work together effectively?
>
> How would you rate the effectiveness of these techniques on a scale of 1 to 5, 5 being the most effective?
>
> What are the challenges of this role?

To me it seems that working in this process is very challenging and time consuming. Are there incentives for excelling in the AM program or even for showing up to the meetings regularly? (Examples: personal motivation such as curiosity or desire to help, to rewards within their agency, to reputation more broadly)

Time/Resource Questions

Can you tell me about how resources such as time and funding impact the process?

Are you resourced?

> What difference does this make to you in the process?

Are there realistic time frames to complete projects, review reports, and make decisions in CMER and Policy?

Communication Questions

To me it seems that another factor that would affect how groups work together is the quality or effectiveness of communication. Can you describe to me communication within CMER or the Policy group?

How effective is communication between different levels of the adaptive management program? For instance between the CMER and the Policy group?

> Does Policy provide clear research goals to CMER?
>
> Does CMER research provide the research Policy is looking for?

Clear Ground Rules Questions (Process Question)

Another factor that has been discussed in the literature is having a framework or process in which learning can occur. It seems to me that the AM manual, the CMER protocol and standards manual, and ground rules all establish this kind of framework. Do you feel these establish an effective framework for the process?

On a scale of 1-5, with one being less informed and 5 being more informed, how familiar do you believe most members are with the AM program rules such as the TFW/FFR ground rules, the Board Manual, and the CMER Protocol and Standards Manual?

> If not understood: What are the barriers to understanding?
>
> If understood: Are the rules providing the necessary framework to guide the process? If not followed what are the challenges?

Monitoring Questions

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