2 LEGIT 2 QUIT: THE EFFECT OF INSTITUTIONS ON THE PERCEPTIONS OF LEGITIMACY IN THE GREAT BEAR RAINFOREST

by

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Abstract

Collaborative planning in natural resource management involves a number of non-state actors and different institutions to make decisions that fall under the realm of governance. However, legitimacy, a quality considered necessary in successful governance, has not been thoroughly investigated empirically. This research examines the perceived importance of three different dimensions of legitimacy—representativeness, meaningfulness, and effectiveness—by actors in the Great Bear Rainforest (GBR) decision-making process and the perceived role of three institutions—shadow networks, bridging organizations, and boundary objects—in relation to the legitimacy of the GBR plan. Based on semi-structured interviews (N=17), this research provides an empirical investigation of the nuances of legitimacy in collaborative natural resource planning and the institutions involved in that planning from the perspective of those involved or otherwise affected by the GBR decision-making process. The results illustrate the importance of representing the different participants’ interests and values in the final outcome, trustworthy relationships to build accountability and ensure commitments, strategically using representation to ensure a fair and meaningful decision-making process, and using small groups of capable negotiators to ensure the different values and interests are included at the different levels of decision-making. These observations highlight the importance of not just representation, but meaningful engagement, of actors in negotiating processes. They also emphasize the importance of shadow networks for brainstorming alternative solutions and creating personal relationships; of bridging organizations to effectively represent and coordinate the interests of a collective of actors that do not always have the same goals; and of boundary objects to reflect the interests and values of actors, thereby ensuring effectiveness through commitment to implementation.
Lay Summary

Over the past 20-30 years, natural resource governance has become more collaborative in its decision-making processes. However, this means that people and organizations not elected by the public or otherwise chosen to represent those interests have more agency in how these decisions are made. This invites questions about how the legitimacy of these collaborative efforts is perceived. Through interviews with participants or those otherwise affected by the process that created the Great Bear Rainforest management plan, this research endeavored to determine whether formal or informal institutions are perceived as building up or eroding the legitimacy of the final outcome. This study found that meaningful engagement of a representative group of participants in the decision-making process and its auxiliary institutions to create an outcome reflective of those different actors’ interests contributed to perceptions of legitimacy.
Preface

All the work presented herein is the original, unpublished, independent work by the author, A. Henry. The fieldwork reported in Chapter 3 and Chapter 4 was covered by UBC Behavioral Research Ethics Board Certificate number H16-02722.
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<td>CFCI</td>
<td>Coast Forest Conservation Initiative</td>
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<td>CFN</td>
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<td>Commission on Resources and Environment</td>
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<td>JSP</td>
<td>Joint Solutions Project</td>
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I would like to take the time to acknowledge those vital to this research and its development. First of all, I would like to thank my advisors, Shannon Hagerman and Rob Kozak, for helping me develop these ideas into a research project. I would also like to acknowledge Hisham Zerriffi as a member of my committee for his guidance and input in this research as well. Similarly, I would like to thank members (past and present) of the SES lab, the Q lab, and ERDE lab for listening to presentations of my research at different stages and giving me feedback to help shape it and make it better. I would like to thank those whom I interviewed for taking time out of their schedule to participate in this work and help contribute to the knowledge on this topic as well. I would also like to thank the other faculty and staff within the Forest Resources and Management and the Wood Sciences department for providing ongoing support and assistance.
Dedication

I’d like to dedicate this work to the amazing friends and family that supported me through my graduate endeavors. While writing this thesis, I also was discovering who I was as an adult. My parents provided me with amazing emotional support and reassurance, and my sister was always there with love. My roommates and friends sympathized, empathized, and put up with many late nights of venting and complete exhaustion. I could not be more thankful they were there to get a beer with me and dance at the end of a long week. I want to thank my partner, Paul, for putting up with me while I was stressed, trying to understand what my research is about, and always being there to help me bear my burdens. Though it may seem silly to write a dedication to someone that could never read it, my dog Riley has been my foundation this last year. He reminds me that there is always love, light and joy to be had if you just change your frame of mind. He was there to give me so much support and so many cuddles at the times where I even felt alone.

I would also like to dedicate this to my forestry family. My advisors, Rob and Shannon, were amazingly patient through this process. They gave me guidance, encouraged me, inquired after my wellbeing, and were patient even when I would get caught up in paper upon paper, each with a new and intriguing idea. The amazing peers I had the privilege of working with in the Social Ecological Systems lab, and the other residents of 2237, were crucial to the success of this thesis. Without our thoughtful discussions, their ability to bring humor back into any situation, and their willingness to be whatever was needed, I am not sure I would have completed this thesis or grown as much as I did as a person. My other friends in forestry, I thank you for the lunches, the breaks in our work, and beers at the Bean. Your friendship, especially for a girl moving to a place where she knew no one, has been a cornerstone in my Vancouver community.
1. Introduction

Collaborative planning in natural resource management has become more prominent over the past 20-30 years due to an erosion in the legitimacy of many centralized, hierarchical governance structures (Lockwood et al., 2010; Wondolleck and Yaffee, 2000). The increased use of collaborative planning globally stems from issues such as public mistrust of the managing authority, incongruence between how the public and managing authority believes the resource should be managed, a lack of avenues for public input and/or participation in the decision-making process, or simply ineffective management in either the planning or implementation stages (Wondolleck and Yaffee, 2000; Berkes, 2010; Hogl, 2012). These issues can detract from the legitimacy of the natural resource management (NRM) or the natural resource governance (NRG) if not addressed. They are evidence of problems of representation, of meaningful deliberation by the parties involved, or ineffective results. These issues have been particularly clear in the past two decades in British Columbian forest management (Frame, 2004).

The previous natural resource governance in British Columbia (BC), known for heavy resource development (Day et al., 2003), faced criticism due to mistrust stemming from a lack of participation and oversight by the public (Ibid). Furthermore, natural resource governance in BC has continually faced challenges in court from local First Nations as their land was never ceded, thus making provincial government authority in the area tenuous and adding to contention from the public (Low and Shaw, 2011). Discontent over lack of participation or representation of the public’s interests escalated, eventually peaking in the “War in the Woods” protests. One protest during 1993 in Clayoquot Sound was the largest act of civil disobedience in Canada with close to 900 arrests (Tindall, 2013) until the 2012 student protests in Montreal. Following this period, environmental non-governmental organizations (ENGOs) sought to protect 6.4 million hectares of coastal temperate rainforest in BC they dubbed the Great Bear Rainforest (GBR). They had not previously pursued a campaign of this scale. Due in part to mistrust in government, their initial efforts, rather than engaging the government, targeted the forest industry directly (Page, 2014). In doing so, the GBR was the focus of a decision-making process involving collaboration through formal and informal institutions, Land
and Resource Management Planning (LRMP) tables, and a new government-to-government (G2G) decision-making table (see Appendix I for timeline).

Collaborative planning, an approach that involves both state and non-state actors in planning and decision-making with the intent of integrating their different views into the final product (Wondolleck and Yaffee, 2000), has extended the circle of participants and/or decision-makers from elected or appointed government officials to non-governmental organizations (NGOs), industry, communities, and other institutions (Lemos and Agrawal, 2006). Governance refers to the interactions between actors, processes, and policies that determine the distribution of powers, the objectives and priorities, and the degree of representation and participation (Graham et al., 2003). Governance differs from government in that it refers to the expanded circle of decision-making, which includes non-governmental entities (Lebel et al., 2006) and thus results in more collective action (Stoker, 1998). As the circle of decision-making is expanded, governance then also includes informal processes as opposed to the formal processes that characterize government (Graham et al., 2003).

While institutions exist in both government and governance, prominent institutions in governance may be informal and can be made up of actors within and outside of government. Scott defines institutions as, “social structure[s] that have attained a high degree of resilience [and are] composed of cultural-cognitive, normative, and regulative elements that, together with associated activities and resources, provide stability and meaning to social life” (2008, p. 48). This definition encompasses both formal institutions (e.g. government planning tables) and informal institutions that are less tangible (e.g. cultural norms and values) (Pelling et al., 2008). Despite the recognized role that formal and informal institutions and their outputs have in facilitating successful collaboration through building trust between often opposed parties, creating a space for knowledge coproduction, and allowing exploration into alternative solutions and opportunities (Wondolleck and Yaffee, 2000), their effect on the perceived legitimacy of these collaboratively-made decisions has yet to be empirically investigated.

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1 Within the context of this thesis, ‘table’ is used to denote spaces of negotiation.
The perceived legitimacy of a governance regime, or a system characterized by particular management and rules, can lead to its continued success or its eventual downfall.

The GBR process diverged from the previous NRG that operated via state-controlled authority and formal institutions that often made either unilateral decisions or coordinated policy-making with industry (Cashore et al., 2001). Instead, multiple actors influenced and were directly involved in the decision-making process, both in formal and informal capacities. After running a successful marketing campaign targeting the BC timber industry, the Rainforest Solutions Project (RSP)—a group consisting of ForestEthics, Greenpeace, and the Sierra Club—forced forest industry companies to sit down to negotiations on the management of the coastal forest. These five companies\(^2\) formed the Coast Forest Conservation Initiative (CFCI) in January 2000 and, together with the RSP, officially became the Joint Solutions Project (JSP) in 2000 (though informal talks preceded this organization) (Page, 2014). Later on, due to discontent from the provincial government and First Nations over being left out of these discussions, a collaborative process was adopted and pursued, eventually concluding in 2016. There has been much research and discussion in the literature on the GBR process (Moore and Tjornbo, 2012), whether it was a shift from government to governance (Howlett et al., 2009), and whether it could be used for a model of management in other areas of resource development conflict

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\(^2\) While Interfor and Western Forest Products were consistently involved throughout, Weyerhauser, Norske Canada and Canfor involvement at the beginning changed to BC Timber Sales, Catalyst Paper Corporation, and Howe Sound Pulp and Paper due to changes in the market and mill ownership.
(McGee et al., 2010; Low and Shaw, 2011). However, little empirical research has been conducted on how different actors perceive the legitimacy of collaborative NRG with foundations in different institutions (Birnbaum et al., 2015), which makes the GBR an important case study to better understand those institutions’ roles and effects.

In this thesis, I focus on three key institutions added to the institutional landscape as being central to the GBR: bridging organizations, shadow networks, and boundary objects. The institutional landscape, as used by Sandstrom et al. (2013), acknowledges new institutions are created and used within an existing institutional context that defines the general pathways for collaboration. Bridging organizations refer to formal organizations that bring together different groups for the production of knowledge, collaboration, trust-building, and conflict resolution (Berkes, 2009). Examples of bridging organizations in the GBR include the Joint Solutions Project (the organization including both forest industry and ENGO representatives) and the Coastal First Nations (an organization representing Central and North Coast First Nations). Shadow networks refer to informal networks that are more flexible and thus better able to explore alternative ways of addressing a problem (Olsson et al., 2006). In the GBR, American philanthropic organizations such as the Rockefeller Brothers Fund, the William and Flora Hewlett Foundation, and the David and Lucile Packard Foundation helped fund half of the Coast Opportunities Fund (COF) through work in a shadow network. Boundary objects refer to objects or products created through a collaborative process involving deliberation and negotiation (Crona and Parker, 2012). Both the COF and the ecosystem-based management (EBM) plan, a framework all parties agreed to formulate, could be considered boundary objects in the GBR.

Although it took twenty years to complete, the GBR has been praised for its large scope, collaborative decision-making, and EBM foundation as reported in news outlets worldwide such as The Globe and Mail, the British Broadcasting Company (BBC), and National Public Radio (NPR). The premise of this research is that the three institutions, namely bridging organizations, shadow networks and boundary objects, played a crucial role in constructing GBR management plan, and so it is critical that their potential role in shaping perceived legitimacy is understood to determine the potential long-term success of such agreements.
Research Objectives and Questions

As the GBR negotiations have come to a close and the implementation of the finalized agreement begins, this is an opportune moment to examine views about the role of institutions in fostering or eroding the perceived legitimacy of the GBR agreement. Much remains unknown about how institutions such as bridging organizations, shadow networks, and boundary objects contribute to or detract from the legitimacy of NRG and how it is viewed as successful or not. Therefore, two objectives of this thesis are:

1) To examine the perceived importance of different dimensions of legitimacy to natural resource governance.
2) To examine the perceived role of three key institutions, specifically bridging organizations, shadow networks, and boundary objects, in relation to the central dimensions of legitimacy.

Research questions

To address these objectives, I adopt a case study approach of the Great Bear Rainforest to answer three main questions:

1) What are the central dimensions of legitimacy as described in the natural resource governance literature, and how do they help us better understand and explain the evolution of the GBR agreement?
2) To what extent are these key principles of “good governance” and understandings of legitimacy identified as important by actors involved in the GBR process?
3) How do involved actors view the roles of different bridging organizations, shadow networks, and boundary objects in the Great Bear Rainforest? In what ways were these institutions perceived as enhancing or eroding the legitimacy of the GBR process?
2. Conceptual Approach to Studying Legitimacy and the Role of Key Institutions

2.1. Legitimacy

The concept of legitimacy as it relates to governance is understood differently within various related fields of inquiry, such as political science, governance, and natural resource management. Legitimacy has been argued to play a determining role in the political atmosphere in which decisions are made and can be separated into four types: normative (is a system of authority acceptable), descriptive (whether and why subjects accept a system as justified), evaluative (what are the standards for something to be considered legitimate and how are they met), and strategic (how is legitimacy managed and used as a resource) (Hogl et al., 2012).

Beetham (1991) largely focuses on normative legitimacy and differentiates legitimacy within law, philosophy, and social science. Legitimacy in law “is equivalent to legal validity” (p. 4), and in philosophy “entails the moral justifiability of power relations” (p. 5). Max Weber (1956, as cited in Beetham, 1991), one of the most influential social science researchers, focused on legitimacy within a descriptive lens and defined power as legitimate if people believe it to be so. Beetham (1991) rejects this definition as he purports that legitimacy can exist outside of people’s beliefs; under Weber’s definition, legitimacy only exists as a belief of the people, thus removing it from being a characteristic of a system of power that can be judged rationally or objectively. Furthermore, it does not question why the people believe in the legitimacy of a system. For Beetham, “Legitimacy for social scientists is always legitimacy-in-context, rather than absolutely, ideally or abstractly” (1991, p. 14). By this, he means that the study of legitimacy in social science focuses on the degree to which various systems have been or are legitimate. Beetham further defines a power relationship as legitimate, “because it can be justified in terms of [the public’s] beliefs” and thus judging legitimacy becomes an “assessment of the degree of congruence” rather than a report on the people’s beliefs (1991, p. 11). He outlines different criteria for legitimacy: conformity to rules (legal validity), justifiability of rules in terms of shared beliefs (congruence), and legitimation through expressed consent (1991, p. 20). These criteria help answer why people find a system legitimate. An additional criterion, as described by Cosens (2013, derived from
Esty, 2006), is how research-based knowledge is incorporated into decision-making and policy creation.

Within the realm of governance and social science, different fields explain legitimacy further. Fishkin (1981), a scholar of political theory, views legitimacy as related to public loyalty and acceptance, while Sandström et al. (2013) define it as stakeholder acceptance. Benhabib (1996, p. 69), in discussing the deliberative democracy branch of political theory, touches on normative legitimacy and says, “The basis of legitimacy in democratic institutions is to be traced back to the presumption that the instances which claim obligatory power for themselves do so because their decisions represent an impartial standpoint said to be equally in the interests of all. This presumption can be fulfilled only if such decisions are in principle open to appropriate public processes of deliberation by free and equal citizens.” Many current theories on legitimacy in changing governance stem from the rise of supranational organizations, such as the European Union, and how these systems are viewed as legitimate, or not (Scharpf, 2009; Schmidt, 2013). This conversation concentrates on two kinds of legitimacy, input and output, but has also started to focus on a third kind: throughput legitimacy. These theories focus on descriptive and evaluative types of legitimacy, but sometimes touch on normative legitimacy as well.

Schmidt (2013) addresses input legitimacy, output legitimacy, and throughput legitimacy in her paper discussing the EU. Input legitimacy is determined by the authority’s “responsiveness to citizen concerns as a result of participation by the people” (Schmidt, 2013, p. 2), while output legitimacy is determined by the effectiveness of the system or its policy outcomes. Schmidt (2013) comments that throughput legitimacy or legitimacy that is “judged in terms of the efficacy, accountability, and transparency of the [authority’s] governance processes along with their inclusiveness and openness to consultation with the people” (p. 2) is often missing from the conversation on governance legitimacy.
As Figure 2 shows, the different types of legitimacy are related and have feedback between one another. If the public evaluates the government as less effective, congruence between the authority and the public begins to decrease and erode legitimacy, a predicament that many existing modes of government are currently facing (Connelly, 2006). This erosion is due to a decrease in output legitimacy. As this legitimacy erodes, the public can redirect their consent through the electoral process or through mobilization/public participation in the political sphere (Beetham, 1991). Were the system in place to be unresponsive to such actions, it would also decrease input legitimacy, another factor in the erosion of legitimacy in current government systems (Scharpf, 2009). Throughput legitimacy echoes the ideas of Benhabib and other deliberative democracy scholars such as John Dryzek and John Parkinson in that a key factor in determining legitimacy is the quality of the deliberations and who is able to participate in those deliberations. These types of legitimacy and their relationship to one another has become increasingly important in natural resource management and governance in Canada.

While traditional Western modes of government—democratic, hierarchical, and centralized—generally derive their legitimacy from being elected (Hogl et al., 2012),
they have increasingly been replaced by collaborative, network forms of governance in natural resource management (Papadopoulos, 2003), particularly in Canada (Doberstein and Millar, 2014), that consist of representatives not necessarily elected or otherwise put in place by the public. Rather, they are often representatives from special interest groups. Harshaw (2010) outlines a number of factors that eroded the legitimacy of BC’s centralized land-use decision-making: a resource extraction/industry-focused sector, increased uncertainty as a result of environmental interests’ and First Nations’ protests and claims, and a lack of opportunities for public engagement.

As this erosion occurred, there was a growth in network governance systems, which presents a challenge to the typical mechanisms of legitimacy present in centralized authority systems (Doberstein, 2014). These network governance systems engage parties from different sectors in collaborative decision-making by creating a more equitable forum for policy formulation. Throughput legitimacy is particularly important in this sphere of governance, “because it is process-oriented, based on the interactions of actors in governance settings…The locus of inquiry is the ‘black box of governance,’ the space that measures the quality of governance processes and decision-making patterns” (Doberstein, 2014, p. 264). As demonstrated by Mascarenhas and Scarce (2004), network governance often has questionable legitimacy, particularly whether the system is truly representative or instead represents interests of those involved in the process and/or those with the most power. Further they show that legitimacy (undesignated by type) is essential to collaborative decision-making and deserves more empirical exploration.

Following this review of legitimacy as understood in the literature in NRG and related fields, I identify three central dimensions that determine the legitimacy of a collaborative decision-making process and its outcomes: it must be representative of the public’s interests and congruent with their beliefs, it must be meaningful or the result of genuine deliberation between all parties, and it must be effective at addressing problems and achieving its goals to demonstrate the collaboration and its outcomes work. These criteria derive from the most important aspects determining input, throughput, and output legitimacy, respectively, as illustrated in Figure 2. In addition to these three main criteria, other criteria, such as legal validity, transparency, accountability, and utilization of expertise in crafting policy, become inherent to deeming a system of power as legitimate
or not (Bentham, 1991; Lockwood et al., 2010). This study hereafter looks at how these central dimensions of legitimacy and the different types of legitimacy they are related to interact with different institutions in the GBR.

2.2. Changes in natural resource governance

Addressing environmental challenges, and specifically natural resource management, has undergone a transformation from centralized, state-derived authority to more participatory new modes of governance, or NMG (Lockwood et al., 2010). Lemos and Agrawal (2006) clarify that governance includes actors from the community, as well as the private and non-governmental sectors, in conjunction with state actors. Hogl et al. (2012, p. 5) elaborate on three prominent characteristics of ‘new governance’ within the sphere of environmental governance: participation, coordination, and expertise. They further describe these, respectively, as increasing participation of non-state actors in decision-making, improving coordination across scales, and integrating the best knowledge available (be it scientific or otherwise) into policy in a fair manner. Lemos and Agrawal (2006) further clarify environmental governance as how this variety of actors then influence the ways by which environmental actions and decisions are made. Lockwood et al. (2010) outline eight principles for NRM governance: legitimacy, transparency, accountability, inclusiveness, fairness, integration, capability, and adaptability. However, as discussed earlier, other sources of literature link the majority of these principles as factors affecting legitimacy. These aspects are emphasized in various literatures regarding the efforts to foster legitimacy in a decentralized governance system (Connelly, 2006; Ansell and Gash, 2007), and are further stressed in ecosystem-based management, a form of NRM that has been particularly popular since the mid-1990s (Long et al. 2015; Arkema et al., 2006). Thus, understanding how legitimacy contributes to the success of a governing authority and its policies is critical as NRM continues to move towards NMG. As Wolf (2002, p. 40) says, “The primary normative guideline for governance is not democracy but legitimacy.”

Why study perceived legitimacy of NRM?

To be successful, natural resource management, or any type of governance, must be legitimate and perceived as such. Since natural resource management has become a
more collaborative and participatory decision-making process over the last 20-30 years (Lockwood et al., 2010; Wondolleck and Yaffee, 2000), “the legitimacy of the decision-making process is far more significant than the actual plan itself” (Mascarenhas and Scarce, 2004, p. 25-26). This assumes that with the participation of all those concerned at every part of the process, the resulting plan will be agreed upon and effective due to the participants’ commitments to it. One of the most globally prominent examples of representation as a factor affecting the legitimacy, and overall success, of a NRM project is the UN Reducing Emissions from Deforestation and Forest Degradation (REDD+, formerly REDD) program. Promoted by the UN worldwide since 2007, UN REDD+ has struggled in its implementation stages due to issues of community participation. It was not until after the 2010 Conference of Parties, or COP-16 meetings in Cancun where UN REDD became REDD+ that they emphasized participation of local communities and peoples, as well as other relevant actors (theredddesk.org/what-redd, 2016). However, as noted by Korhonen-Kurki et al. (2012), participation can be greatly improved; although the legal framework requires a certain degree of participation, it has been rare in practice. Even a well-backed project, such as REDD+, still depends on the fundamental aspects of legitimacy: representation, meaningful participation, and effectiveness. Thus, understanding the interplay between institutions, governance, and legitimacy is fundamental to successfully implementing natural resource management.

2.3. Bridging organizations, boundary objects, and shadow networks

In NRM and other forms of governance and organization, be they collaborative or not, bridging organizations, boundary objects, and shadow networks are often used as means towards achieving agreeable ends. Bridging organizations are common in collaborative decision-making in Canada, particularly in instances involving indigenous peoples working with the government. They provide a forum to bridge different resources and knowledge and also facilitate trust-building (Berkes, 2009). These organizations are used to foster collaboration as well as to pursue knowledge coproduction between participants (Crona and Parker, 2012). They can help with both vertical (cross-scale) and horizontal (cross-level) collaboration by lowering the barriers and providing incentives for participation (Hahn et al., 2006, p. 586). Bridging organizations differ from other forms of collaboration as they not only mediate, but act as stakeholders in themselves.
While it is theorized that co-management arrangements gain legitimacy through equitable representation of relevant parties (Berkes, 2009; Hahn, 2006), there is little empirical research showing how bridging organizations affect the perceived legitimacy of such management.

Shadow networks, or informal networks that explore alternative solutions to a variety of problems (Olsson et al., 2006), are important not only to collaborative management, but can also serve as a precursor to bridging organizations. They are particularly important as incubators for alternative forms of management in NRM (Olsson et al., 2006; Folke et al., 2005; Gunderson et al., 1995), but can also be important in setting up the conditions to make such an alternative ultimately successful. Shadow networks can be particularly instrumental by setting up economic incentives to help seize a window of opportunity (Olsson et al., 2006). However, empirical research regarding their effect on legitimacy is also lacking, particularly due to their informal nature and lack of accountability (Hahn, 2011). Shaw defines an organization’s shadow system as “the complex web of interactions in which social, covert political and psycho-
dynamic systems coexist in tension with the legitimate system” (1997, p. 235), inherently separating it from legitimacy. Pelling et al. (2008) comment that shadow networks can be the most significant forum for innovation when they are recognized by their formal counterpart and still allowed to proceed as separate entities (p. 869). They also note that shadow systems can be viewed as less accountable, less transparent, and are sometimes considered a source of inequality between those included in the network and those that are not (p. 879). High et al. (2005) further reference informal institutions’ perceived complexity, corruption, and/or inefficiency as barriers to including them in some formal capacity.

Boundary objects are outputs of a collaboration that “are both adaptable to different viewpoints and robust enough to maintain identity across them” (Star and Griesemer, 1989, p. 387). They are objects that parties involved in a collaboration work together on to address a problem, such as models, classification systems, maps, or management systems (Crona and Parker, 2012). While boundary objects often function as central points for knowledge integration and coordination, their legitimacy is dependent on whether their production “has been respectful of stakeholders’ divergent values and
beliefs, unbiased in its conduct, and fair in its treatment of opposing views and interests” (Cash et al., 2003, p. 8086). As such, though they can act as a nexus for collaboration, they can also isolate those that do not view their production as equitable and meaningful (White et al., 2010). EBM is a type of management that emphasizes both multipartite participation and incorporating and integrating different realms of expertise. As such, it is debated in the literature whether this further representation of participants and epistemologies empirically adds to the legitimacy of the management. The GBR is thus an important case study to investigate to begin answering these questions.

2.4. How legitimacy and institutions interact

As the different institutions discussed in Section 2.3 are all involved in governance, they also interact with the concepts that frame legitimacy. Following Figure 3, it can be seen that bridging organizations exist mostly within the realm of throughput legitimacy. As bridging organizations consolidate representation and knowledge, they span both input and throughput legitimacy. Boundary objects span throughput legitimacy and output legitimacy realms. They can be used as a means of facilitating negotiations or as objects within negotiations (e.g. resource planning maps), and they can also be the outcomes of negotiations or help facilitate those outcomes. Boundary objects, therefore, affect legitimacy within the process and in the ultimate outcome. Shadow networks exist in tension with the legitimate governance system, and so cannot exist under one type of legitimacy. However, shadow networks interact with throughput legitimacy as they are often precursors to bridging organizations and used as an alternative means of finding solutions. Shadow networks have the most tension with input legitimacy as they are informal networks that are not necessarily representative. Shadow networks could be used to ease implementation and thus can interact with output legitimacy as well.
**Input legitimacy** is response to concerns as a result of participation by the people.  
**Throughput legitimacy** is through governance processes with the people.  
**Output legitimacy** is judged by the effectiveness of governance outcomes for the people.  
**Bridging organizations** bring different groups together under one umbrella and act as a point of collaboration and knowledge co-production.  
**Boundary objects** are outputs of collaborative processes.  
**Shadow networks** are areas different groups or individuals can work on alternative or innovative solutions.

![Figure 3: Legitimacy conceptual framework. This figure shows the interaction between the three types of legitimacy and the three institutions being investigated.](image)

### 2.5. Bridging organizations, shadow networks, and boundary objects in the Great Bear Rainforest agreement

This proposal is designed to explore the proposition that three types of institutions played important roles in the creation of the GBR and thus may influence the perceived legitimacy of the subsequent agreement. This is first evident in a shadow network consisting of forest industries and ENGOs after the forest industry suffered losses from the ENGO international marketing campaign, which then led to the creation of a collaborative management agreement around the GBR. This shadow network was later formalized into a set of bridging organizations: different forest companies, usually totaling five altogether despite changes in the company ownership and thus their names, came together under the Coast Forest Conservation Initiative (CFCI); different ENGOs, usually totaling three, came together under the Rainforest Solutions Project (RSP); and CFCI and RSP worked under the umbrella organization of the Joint Solutions Project (JSP). Some First Nations throughout the area entered the management network under two different bridging organizations: Coastal First Nations (CFN) and the Nanwakolas Council; membership within these First Nation bridging organizations did fluctuate. These bridging organizations were essential to the GBR negotiations, as they reduced the
number of people at the negotiating table without affecting the representation. Lastly, the main boundary object in the GBR is the EBM plan called for and negotiated by all involved parties with technical support and recommendations from the Coast Information Team (CIT).

The EBM plan is considered a boundary object in this context because it is the negotiated outcome of collaboration. More broadly, as the concept of EBM often functions as a systemic form of management that extends past poligeographical boundaries, it inherently demands collaboration among different actors to implement it across the multiple levels of management, agencies, and/or government. The EBM concept seeks to integrates knowledge from different realms of biology and ecology, knowledge from local communities, and oftentimes sociological knowledge. As Cohen (2012) comments, in demonstrating watersheds as boundary objects, the fundamental principles of EBM emphasize ecological management at the landscape level, coordination across scales, and integration of different knowledge. EBM has always focused on ecological integrity and has increasingly incorporated principles related to human wellbeing overtime as well (Appendix VI). Actors in the GBR focused on an EBM plan as the main outcome of their collaboration, because it manages for both ecological integrity and human wellbeing through the integration of knowledge and management across scales and levels. The Coast Opportunities Fund (COF), a $120 million fund to support “sustainable economic development and conservation management” (Tedesco, 2015), was incorporated to facilitate reaching the human wellbeing goals. It can be considered a boundary object within a boundary object.

An important and often overlooked shadow network present in the GBR agreement was the network between Canadian ENGOs and American ENGOs and philanthropists. Tedesco (2015) found in tracing the cash flows of three American foundations (the David and Lucile Packard Foundation, the William and Flora Hewlett Foundation, and the Rockefeller Brothers Fund) between 1997 and 2007 that they provided three-quarters of the money, or $90 million, to establish the COF. They further contributed around $55 million to the RSP (as well as additional funds to organizations that made up the RSP) and a little over half a million dollars to the CFN. However, as
these contributions are often overlooked in the general literature on the GBR agreements, their effects on the legitimacy of the agreement is unknown.
3. Methodology

3.1. Approach
A case study methodology was used to address the research objectives and questions. Though some qualitative researchers posit that a case study is merely a choice of what to be studied rather than a methodology because it cannot be generalized, others disagree (Creswell, 2013; Thomas, 2010). Thomas (2010) describes case studies as useful in creating a narrative with which people can connect and from which they can gain insight and understanding into a problem. Stake (1978) elaborates on these points and stresses that a case study is distinctive because it draws particular lines around the case, or “the boundaries are kept in focus. What is happening and deemed important within those boundaries (the emic) is considered vital and usually determines what the study is about” (p. 7). The Great Bear Rainforest defines the particular context and boundaries within which this research will investigate the effect of institutions on perceptions of legitimacy.

3.2. The Case of the Great Bear Rainforest
The GBR case was selected because it exemplifies the trend in governance from a state-driven governance regime to one characterized by both state and non-state actors working collaboratively across multiple scales. The provincial government was in the process of forming and completing a Land and Resource Management Plan (LRMP) for the GBR area called the Central Coast Land and Resource Management Plan (CCLRMP) during the time that informal talks were occurring between the CFCI and RSP. An LRMP table is a government-directed collaborative forum for creating plans by which to manage an area or resource. Though stakeholders represented at the LRMP table encompass environmental, resource industry, and community interests, results of surveys of LRMP participants show that only slightly more than half of the participants are satisfied with the results even though almost all agreed to plans by consensus (Frame et al., 2004). ENGOs refused to participate in the CCLRMP unless there was a ban on logging during the talks. Similarly, First Nations in the GBR refused to participate in any capacity other than observational as to not condone the forum since it did not recognize their right to the lands. Both the provincial government and First Nations were unhappy at being left out of the JSP talks, but quickly became centrally involved. Some First Nations formed the
Coastal First Nations\(^3\) in the spring of 2000, which, in conjunction with the Nanwakolas Council, began to represent the interests of the 26\(^4\) First Nations in talks with the JSP, as well as the RSP and CFCI separately. On May 29, 2000, the JSP began talks with the First Nations and working with the provincial government’s LRMP process. On April 4, 2001, the JSP, CFN, and BC provincial government released the Great Bear Interim Agreement announcing the collaborative decision-making process the ENGOs, forest industry, provincial government, and First Nations would pursue to create a new system of management in the GBR (Page, 2014). This initial collaboration went through many phases, most notably the commitment in 2009 to EBM and 50% protection of the land base from logging (Figure 4). Nearly twenty years after action to protect the Great Bear Rainforest started, the Great Bear Rainforest final agreement was reached on February 1, 2016 (as shown in Figure 4 and Appendix II) and the Great Bear Rainforest Act was introduced on March 1, 2016. The final agreement secured high levels of old growth forest protection (70% of range of natural variation, or RONV), protects 85% of forests in the GBR, and leaves the remaining 15% open to logging under the restrictions of the EBM plan. It also secures $120 million for capacity building in the region and transitioning the economy to a conservation-based one. The GBR was a novel collaborative process that received both local and global attention (Price et al., 2008; Page, 2014) and is reflective of recent trends in natural resource management and governance. EBM was key as a management plan within this process as parties agreed from the beginning, or when Joint Solutions Project was formally founded, that they would pursue an EBM approach for forest management in the GBR (Joint Solutions Project, 2001).

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\(^3\) The Coastal First Nations was initially known as the Turning Point Initiative.

\(^4\) Numbers of the First Nations involved in the negotiations changed throughout the GBR talks. While previous literature references 27 First Nations, the final GBR agreement and act reference 26 First Nations.
3.3. Data collection

Data collection included 17 in-depth, semi-structured interviews with participants that met the criteria detailed in Section 3.4. Interviews lasted between 20 and 80 minutes, with the majority lasting between 30 minutes and 1 hour. Semi-structured interviews were chosen so as to explore specific research themes (e.g. as relates to legitimacy, institutions, and collaborative outputs), while still allowing for the identification of additional themes that interviewees see as important and that may not have been anticipated in the initial research design and framing (Marshall and Rossman, 2016). While a core set of interview questions were asked of every interviewee, a semi-structured interview approach provided the flexibility to follow up on an interviewee’s individual perspective beyond what the research might presuppose as being most important. Interview topics covered the interviewee’s background, their objectives as participants in the GBR, their views on the different institutions utilized during the course
of the GBR negotiations, and their perceptions of the legitimacy of the process and final product (Appendix III). Analytically, the themes explored through the interview were representativeness, meaningful deliberation, effectiveness, and agreement/disagreement between participants or those involved and those not.

Table 1: Number of interviews by affiliation

<table>
<thead>
<tr>
<th>Interview group</th>
<th>Number of interviews (Total sample n=17)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Industry</td>
<td>5</td>
</tr>
<tr>
<td>ENGOs</td>
<td>4</td>
</tr>
<tr>
<td>BC Provincial Government</td>
<td>2</td>
</tr>
<tr>
<td>First Nations (involved)</td>
<td>2</td>
</tr>
<tr>
<td>Others (involved)</td>
<td>3</td>
</tr>
<tr>
<td>Others, First Nations (not involved)</td>
<td>1</td>
</tr>
</tbody>
</table>

The breakdown of the interviews is shown in Table 1. Interviewees were selected to achieve a balance of participants with experience at each level of the process. As such, since industry and ENGO representatives worked most closely together at the JSP tables, of which 5 different forest companies and 3 different ENGOs were a part, interviews from each of those groups were close in number. Of the others (involved) that were interviewed, one was the mediator of the JSP table and the larger process, one was working with ENGOs and philanthropic organizations, and one was a consultant that worked more on the industry side. At the government-to-government level, of which the BC provincial government, Coastal First Nations, and Nanawakolas Council were a part, this study also aspired to represent a balance between the groups. Lastly, one member of a First Nation not involved in the GBR process was interviewed to provide some contrast to the perceptions of those involved in the process.

3.4. Sampling strategy

This research used a purposeful sampling strategy (Creswell, 2013), to ensure that interviewees could provide particular insight into my research questions. It used a combination of maximum variation sampling, or sampling interviewees with as diverse or varied qualities as possible, and opportunistic sampling, or sampling that takes advantage of referrals, to interview a range of different views and people, but also still allow the researcher the opportunity to interview people referred to me by others (Ibid). Criteria for
inclusion was substantive in that respondents either had been included in the GBR negotiations and decision-making, had been facilitators during the negotiations, or were directly affected by the negotiations regardless of whether they were included in them or not. This, as such, required representation from the Coast Forest Conservation Initiative (the forest industry coalition), the Rainforest Solutions Project (the ENGO coalition), the Coastal First Nations, the Nanwakolas Council, and the BC Provincial government. Additional participants were either representatives of the communities within the GBR territory, facilitators for the negotiations, representatives of the American philanthropic organizations that helped fund the COF, those who benefited from the GBR, or those who disagreed with it. Both participants involved in the negotiations and those not involved are included within the criteria to have results representative of the varied perspectives. Participants were representing themselves when answering questions within the context of their membership and representation of these different actor groups in the GBR proceedings.

3.5. Ethics
Ethics approval was obtained through UBC’s Behavioral Ethics Review Board (BREB) to ensure informed and ongoing consent, confidentiality, and appropriate procedures for data storage. An invitation letter was sent to invite potential interviewees to participate in the research (Appendix IV). Consent forms (Appendix V) were sent to interview participants at least 48 hours prior to the interview and required a signature before the beginning of the interview. Free, prior, and informed consent was required both before and during the interviews. All quotes used in this thesis were sent to interviewees for approval prior to writing. No information that can disclose identity is included.

3.6. Data Analysis
A set of *a priori* themes related to legitimacy (representativeness, meaningfulness, and effectiveness) were identified through the literature review and synthesized in the legitimacy framework presented in Table 2. These themes informed the core design of the interview schedule. For example, the questions were designed to elicit perceptions of how the informal institutions affected perceptions of the representativeness, the meaningfulness, and the effectiveness of the final GBR agreement. In the tradition of
grounded theory, emergent ideas and issues raised by the interviewees themselves were also pursued (Charmaz, 2006). Interviews were audio-recorded and uploaded into NVivo. Transcripts were transcribed verbatim and then coded line by line to identify recurrent concepts and ideas (codes). The different codes were successively organized, merged, or split as they fit in with other codes. These codes were then consolidated and developed into four central analytical themes discussed in Chapter 4. Findings generated through this process address the research objectives by shedding light on perceptions of how different institutions add or detract from legitimacy.

Table 2: Concepts and their descriptive categories as derived from the literature

<table>
<thead>
<tr>
<th>Concepts</th>
<th>Categories</th>
<th>Literature source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Input legitimacy</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Participation-oriented</td>
<td>Citizen representation</td>
<td>Scharpf, Schmidt, Doberstein</td>
</tr>
<tr>
<td></td>
<td>Legality</td>
<td>Beetham</td>
</tr>
<tr>
<td></td>
<td>Congruence</td>
<td>Beetham</td>
</tr>
<tr>
<td></td>
<td>System legitimacy</td>
<td>Schmidt</td>
</tr>
<tr>
<td></td>
<td>Civil society representation</td>
<td>Schmidt</td>
</tr>
<tr>
<td></td>
<td>Collective identity/political will</td>
<td>Schmidt</td>
</tr>
<tr>
<td>Throughput legitimacy</td>
<td>Intermediation</td>
<td>Schmidt</td>
</tr>
<tr>
<td>Process-oriented</td>
<td>Participation</td>
<td>Schmidt, Doberstein</td>
</tr>
<tr>
<td></td>
<td>Access to DM</td>
<td>Schmidt</td>
</tr>
<tr>
<td></td>
<td>Accountability</td>
<td>Schmidt</td>
</tr>
<tr>
<td></td>
<td>Transparency</td>
<td>Schmidt</td>
</tr>
<tr>
<td></td>
<td>Degree of influence</td>
<td>Schmidt</td>
</tr>
<tr>
<td></td>
<td>Negotiation of knowledge</td>
<td>Schmidt, Doberstein</td>
</tr>
<tr>
<td>Output legitimacy</td>
<td>Human wellbeing</td>
<td>CIT, Scharpf, Schmidt</td>
</tr>
<tr>
<td>Performance-oriented</td>
<td>Ecological integrity</td>
<td>CIT, Scharpf, Schmidt</td>
</tr>
<tr>
<td></td>
<td>Build identity</td>
<td>Schmidt</td>
</tr>
<tr>
<td></td>
<td>Reflects diversity of values</td>
<td>Schmidt</td>
</tr>
<tr>
<td>Bridging Organizations</td>
<td>Trust-building</td>
<td>Berkes</td>
</tr>
<tr>
<td></td>
<td>Collaboration</td>
<td>Crona and Parker, Hahn</td>
</tr>
<tr>
<td></td>
<td>Knowledge co-production</td>
<td>Crona and Parker</td>
</tr>
<tr>
<td></td>
<td>Cross-scale</td>
<td>Crona and Parker, Berkes</td>
</tr>
<tr>
<td></td>
<td>Agency</td>
<td>Westley and Vredenburg</td>
</tr>
<tr>
<td></td>
<td>Equitable representation</td>
<td>Berkes, Hahn</td>
</tr>
<tr>
<td>Shadow Networks</td>
<td>Flexibility</td>
<td>Olsson</td>
</tr>
<tr>
<td></td>
<td>Innovative solutions</td>
<td>Olsson, Folke, Gunderson, Pelling</td>
</tr>
<tr>
<td></td>
<td>Not accountable</td>
<td>Hahn, Pelling</td>
</tr>
<tr>
<td></td>
<td>Not transparent</td>
<td>Hahn, High, Pelling</td>
</tr>
<tr>
<td></td>
<td>Social learning</td>
<td>Pelling</td>
</tr>
<tr>
<td></td>
<td>Source of inequality</td>
<td>High, Pelling</td>
</tr>
<tr>
<td>Boundary objects</td>
<td>Shared knowledge</td>
<td>Cash</td>
</tr>
<tr>
<td></td>
<td>Knowledge integration</td>
<td>Cash</td>
</tr>
<tr>
<td></td>
<td>Collaboration output</td>
<td>Star and Griesemer, Crona and Parker</td>
</tr>
<tr>
<td></td>
<td>Acknowledges divergent values/beliefs</td>
<td>Cash, Star and Griesemer</td>
</tr>
<tr>
<td></td>
<td>Fair</td>
<td>Cash</td>
</tr>
</tbody>
</table>
3.7. Validity and generalization in qualitative inquiry

Qualitative researchers seek to understand the different accounts they hear, form a confirmable interpretation of them, and represent those findings in their reports (Creswell, 2013). Since the researcher is a tool of the research, they must recognize their positionality, their participants’ positionality, and how they react to one another through the course of the study. This research used the following standard validation strategies (Maxwell, 2013) to address validity threats and confirm the interpretations made: triangulation, peer review and de-briefing, member-checking, consideration of counter-factuals, and clarifying researcher bias strategies.

Triangulation, or the strategy of using multiple sources to corroborate evidence, was used to confirm and clarify different themes or perspectives that arose during this research (Creswell, 2013). In this study, the primary method of data collection was interviews. I cross-referenced interviewees’ statements about mentioned policies and compared these with published accounts. Research advisors provided peer review and de-briefing for the primary researcher; they checked the methods and challenged the interpretations or how they were reported. This process all coordinated with the search for counter-factuals, or where the researcher considered what other interpretations could explain the findings (Creswell, 2013). Quotes from 13 of 17 interviewees’ statements are included in this report. I sent the quotes to the respective individual that made them to confirm their accuracy. All 13 individuals replied with minor corrections and confirmed the accuracy of their statements. A full draft of a research paper, once prepared for publication, will be sent to all interviewees for further member-checking prior to publishing beyond this thesis.

In considering validity threats, it is important to clarify researcher bias. In this study, the primary researcher has a BA in environmental studies and a history in environmental activism and advocacy. They also participated in workshops on indigenous research, worked with indigenous communities for research, and studied indigenous inquiry and methodology. They are from an area in the United States with limited forests and were previously unfamiliar with the natural resource management landscape in British Columbia.
As this thesis uses a case study methodology, it does not attempt to generalize the results into a theory that extends past this case (external generalization). Rather, only internal generalization, or generalizability of results within this case study, was done (Maxwell, 2013). Though this research can speak for how the central dimensions of legitimacy were and were not identified as important and how they interacted with the particular institutions being researched within the Great Bear Rainforest, it does not aim to generalize these results to other NRM cases. Rather, the findings can add to the empirical knowledge on these topics and can later be synthesized with other case studies for external generalization. Figure 5 illustrates that 17 interviews was a sufficient number to achieve saturation of relevant concepts and themes on this topic. Saturation is when the cumulative number of codes (e.g. ideas, themes) identified through the analysis levels out and no new ideas or themes are encountered with additional interviewees.

![Figure 5: Accumulation of codes over interviews.](image-url)
4. Results

The empirical evidence from the interviews is organized and presented below according to four central themes identified through the data analysis. These themes shed light on how representativeness, meaningfulness, and effectiveness, as central dimensions of legitimacy, help us better understand the GBR decision-making process, if and how actors identified these dimensions as important, and how they perceived the different institutions this study focuses on as enhancing or weakening these dimensions and thus the legitimacy of the agreement at large. These themes are:

1) **Boundary objects acted as points of convergence and contributed to throughput and output legitimacy:** Boundary objects such as the EBM plan reflect diverse interests and values, and in so doing, contributed to perceptions of the GBR process and outcomes as legitimate.

2) **Building trust in formal and informal spaces is fundamental for legitimacy:** Frank, trustworthy relationships between representatives, whether professional or personal, were vital to creating and maintaining throughput legitimacy. Perceptions of output legitimacy were colored with concern over the possibility that these relationships would not be passed down over time.

3) **The importance of representation is widely recognized and used strategically by different actors:** All actors recognize that certain groups (i.e. ENGOs and First Nations) must be included within a decision-making process for that process and its outcome to be perceived as legitimate. Different actors use this knowledge to achieve different ends, such as gaining a more powerful role in negotiations or demanding a decision-making role.

4) **Throughput legitimacy was increased with small working groups:** Negotiations and decision-making were perceived as more productive and meaningful when limited to a small group of capable people. Despite not all parties being represented at these tables, they did the bulk of negotiations leading to the final outcomes as part of a tiered decision-making.

The following presents interviewees’ insights and their relationship to the research questions and objectives within these four themes, and they are then discussed in depth in Chapter 5.
4.1. Boundary objects acted as points of convergence and contributed to throughput and output legitimacy.

Interviewees spoke to the importance of the boundary objects in securing legitimacy in the GBR outcomes. Specifically, many interviewees commented on the importance of the EBM plan balancing the two goals of ecological integrity and human wellbeing. Others also mentioned how the COF was crucial in further enabling the human wellbeing portion to be delivered with some financial certainty for First Nation communities in the region.

From the beginning of the GBR agreement, there were two equal goals of the EBM plan: ecological integrity and human wellbeing.

So, the bedrock principle was that we're trying to achieve, concurrently achieve to the greatest degree possible, low ecological risk and high degrees of human wellbeing, and recognizing that sometimes the concurrent piece meant that you wouldn't actually be able to get both. [17, Others]

While the management plan attacked these two goals through different strategies, they were seen as inseparable and inherently related.

And it was absolutely crystal clear to all of the parties involved that you don't do the ecological integrity piece without the human wellbeing piece and vice versa. They go hand in hand. [9, BC Gov]

In the [EBM] Handbook, there's actually this term called 'first amongst equals'. To me, this was revolutionary. First Amongst Equals is the acknowledgment although sustainable communities require a healthy ecosystem (therefore the health of the ecosystem is ‘first’), it is equally important that locally communities have confidence that their needs and aspirations can be met. Otherwise, conservation will not be durable. [10, ENGOs]

Furthermore, if there was any imbalance between these goals, there would not have been final agreement and support from all parties that crafted the plan.

Well, this is what I love about ecosystem-based management. If you try and take any one piece of it out, then everybody disagrees with it. Or most people disagree with it, right? It's like if you tried to say, 'Well we need to protect the ecosystem,' off by itself, without saying, 'We need to protect First Nations' rights and title. We
need to make sure that local communities can have their own economic wellbeing,' and if you don't also say, 'And the forest industry needs to kind of stay whole,' then you can't get agreement. But if you say all of those things together, then everybody's like, 'Woohoo! Yea, we'll do that.' [12, ENGOs]

The Coast Opportunities Fund was also seen as a useful boundary object, largely put together by the ENGOs and philanthropists and later matched by the BC Government, to help achieve the human wellbeing piece of EBM.

The Coast Opportunities Fund was a great idea from the environmental groups, because we at the time were having this conversation about economy and how do we support, you know, the remote communities, which are mostly First Nations in this area. How do we ensure that their communities are sustainable? People have jobs and income and have wellbeing. Human wellbeing. So how do we ensure that? And the conversation was about a switch to- and it's probably happening in lots of places in the world these days- a switch to a more conservation-based economy. [16, BC Gov]

The ability of boundary objects such as the EBM plan and the COF to secure commitments from the different participants highlights the importance of effectiveness as a dimension of legitimacy, as discussed further in Sections 5.1.3. and 5.2.3.

4.2. Building trust in formal and informal spaces is fundamental for legitimacy.

Many participants cited relationships with other representatives, particularly their personal relationships, as being essential to pulling them through the GBR negotiations and process. The descriptions from the interviewees showed that these relationships were important particularly in enforcing principles of throughput legitimacy. These relationships created trust and built up credibility between participants that led to higher accountability in the process. Furthermore, as these relationships helped participants see each other as other human beings with particular interests and values, they helped facilitate interest-based negotiations. However, as these relationships were so essential to the agreements, participants also mentioned how there remains some uncertainty regarding the durability of the GBR agreement.
4.2.1. Trust and credibility: Higher accountability in the negotiating process

Interviewees spoke to how working with one another over a such an extensive amount of time laid the foundations for trust.

So, you know, have the same people working on the same issue for a long time, even from different organizations, in a lot of ways the delineation between the organization that you work with and your membership on the team started to get a little bit muddy, and in a lot of ways started to sort of become team members and there's just a level of trust that just naturally starts to grow through familiarity and small wins on small, specific issues. [11, Industry]

This time spent together led to the formation of both trust as well as personal relationships, as interviewees often spent time together socially after work as well. These relationships helped participants trust one another and hold them accountable to their actions. These personal relationships were fundamental to a shadow network between representatives that allowed them to speak to each other informally when negotiations hit rough patches.

I think the trust comes partly from, you know, the development of the personal relationships over a period of time. Organizational relationships are important. Maintaining commitments and obligations, holding each other accountable to maintain those things. [9, BC Gov]

4.2.2. Relationships facilitating interest-based negotiations

This trust and respect built up over time further helped participants take a more interest-based approach to negotiations as opposed to maintaining positional stances, creating space for more meaningful negotiations.

But at the end of the day, it was trust and respect, and trying to understand the other person's perspective and the other group's perspective, and then take that and then, 'What is it that we can do to make this work?' [7, Industry]

Oftentimes, it was being able to fall back on these trusting and respectful relationships that allowed participants to move through difficult parts in negotiations, at which time it was more likely for participants to fall back into positional negotiating.
You know, those guys, you know, I had relationships with that would allow us, for when we got to very tough parts, to have the very frank conversations and the conversations that were aimed at trying to find, you know, solutions and answers to the specific issues. [2, Industry]

4.2.3. Maintaining an agreement when key players move on: the importance of maintaining relationships to the effectiveness dimension of legitimacy

As interviewees viewed the relationships that were built up over time as instrumental to the eventual agreement on the GBR plan, there is concern about how the work will be continued as the people involved in those relationships begin to retire. As these concerns would affect effectiveness of the GBR agreement, these comments then relate to concerns about the output legitimacy.

But it really is about all the relationships and there's a lot of concern now about that, because a lot of the staff who have done the work are retiring, so there's not going to be that kind of institutional memory moving forward. [16, BC Gov]

This concern has resulted in the effort to not only transmit knowledge as representatives retire, but to also work on transmitting the relationships given their importance to the process.

I should say one of the worries that I do have is that as [another new generation of] people come on [to implement and monitor EBM]- because we went through this to some degree [already]- is that there'll be a loss of corporate memory as well. Because EBM can be pretty complicated, and so we've got written agreements that could be misinterpreted too. So, we just need to ensure in moving forward that the transmission of knowledge takes place and so [do] the relationship[s], because at the end of the day, this has been all about relationships. [13, ENGOs]

4.3. The importance of representation is widely recognized and used strategically by different actors.

Representation and meaningful participation came up time and again as inherently important to the legitimacy of the process and its outcomes. Some interviewees talked about how they were able to use their representation to gain power and/or leverage, because their representation was so important to perceiving the process and outcomes as legitimate. It was the perception that representativeness was an important dimension in
assigning legitimacy that gave different groups leverage to demand negotiations that were more meaningful, as discussed further in Section 5.1.1.

Interviewees commented on how there are views that certain people have to be involved in a process for it to be considered legitimate, and thus it is related to power.

So, there's, like I said, there's formal power and then there's informal power, and legitimacy is something that, it's sort of in between those two. It's a perception by others that one group or another, or an individual or another, actually has to be involved in a set of decisions or- right? So, it's an acknowledgement. [9, BC Gov]

As such, interviewees commented on how the industry wanted to have the ENGOs represented in the GBR management planning process, but given their disagreements, the ENGOs were not willing to simply be present without their voices actually being listened to and included.

They wanted to have the environmentalists there. They felt like they didn’t have legitimacy if they didn’t have the environmental voice there. They would’ve done anything to get the right environmental voices there, at some level, but then they didn’t actually have much interest in listening to and/or changing as a result of it, right? So, we created legitimacy by virtue of being there, but what we did with our legitimacy was consciously very disruptive. We said, ‘We’re not willing to just be here and be your green person who you get to greenwash everything with. We’re unwilling to do that. You don’t get to use our legitimacy that way. Not unless we get something from it.’ [12, ENGOs]

Through the market campaign, ENGOs gained more influence within the matter of how the GBR was managed, and thus their representation and the meaningful inclusion of their concerns was more crucial to the process being perceived as legitimate.

So now all of a sudden, we're being listened to and given legitimacy, because we can economically hurt each other. [12, ENGOs]

Additionally, rulings from the Supreme Court of Canada gave a greater degree of influence and importance to the participation of First Nations. The 1997 Delgamuukw case and the 2004 Haida case created the grounds for adequate consultation and accommodation of First Nations regarding resource development projects in their claimed territories. This changed their participation in the negotiations from being considered
stakeholders at the beginning to being fundamentally involved as decision-makers in the government-to-government (G2G) tables. Thus, the degree of their participation also became a factor in whether the GBR proceedings were perceived as legitimate or not.

With First Nations and their power, they gained it through two ways: one, Supreme Court decisions, which was like a formal way of, you know, their gaining legitimacy, the legitimacy of their existing power. [10, ENGOs]

The lack of participation, be it meaningful participation or any participation, by concerned parties, particularly First Nations not represented by the Nanwakolas Council or CFN, is viewed by some as a sticking point that will surface in later years and possibly detract from the legitimacy.

So, you're either First Nations with representation at the GBR table, or you're a First Nation who is independent of these two organizations [Nanwakolas Council and CFN]- you might've been a member of some other organization, but you were not a member of these two organizations [in the GBR negotiations] …And I have a feeling that this is going to be one of the weak links in the future of GBR, that those unaligned First Nations are seriously questioning and wondering where was their say [as they likely had less influence on the building of the land use order without qualified experts at the technical table]. [8, Industry]

[Some of the members of a Kwakwaka'wakw nation] were quite surprised [about the GBR Land Use Order]. They were… 'Well, we never approved it.' There has been a letter that has been sent to government and it just said. There has been some media, but the Musgamagw Dzawada'enuxw [are] saying that, 'No, we don't believe in the Great Bear Rainforest. Get out.' etc. [6, Others, First Nations not involved]

4.4. *Throughput legitimacy was increased with small working groups.*

Despite representation being important to perceptions of legitimacy and the power balance, interviewees involved in the negotiating process often mentioned how important it was to meet with a small group of capable people in actually achieving concrete agreements and their details. While these meetings were often held with only a limited number of people and often in private spaces, the results of these meetings were then transmitted to the larger group of representatives and decision-makers as recommendations for the final GBR outcome.
There were a variety of bilateral, trilateral, and multilateral sessions and planning and decision-making tables that were central to the GBR negotiating process. These spaces of negotiation were sometimes formal, but sometimes negotiations moved into the informal space of shadow networks, as discussed further in Section 5.2.1.

Through time, there were a whole series of those bilateral sessions, some of them very formal, some of them very, very informal, including social elements, that led to the building blocks, I would say, of the ultimate outcome here that were then imported either into, when the planning tables were still going there, the multiparty planning tables, or afterwards still into the government to government discussions involving First Nations and the province directly. [1, Others]

Larger tables where all concerned parties were represented were seen as unproductive tables where discussions often became positional and thus were not meaningful for collaboration.

We really didn't want to go [to the land use planning tables]. I mean it was, frankly, it was the best education we could have ever had, going to those tables, but it was also like you were never going to come up with a solution that was going to work at those tables. That was not a negotiating table. So, we started having that quote-on-quote 'private' conversation. [12, ENGOs]

I would say that one of the things that really struck me was that when you got into bigger rooms with more people around the table, it became the theater. Right? And so, there's lots of posturing, lots of more positional stuff that happens there. [2, Industry]

Much of the agreements were brought together by a small group of people outside of the formal planning tables. Oftentimes, the solutions or agreements that were developed in these smaller sessions were fed into the larger process as recommendations. These smaller sessions often consisted of representatives within bridging organizations negotiating with one another.

So, we were sort of constantly going away, having a separate conversation, figuring out the next bit, and then coming back and feeding it back into the process. So, we would go away, figure it out, come back, feed it into the process. [12, ENGOs]
Interviewees perceived the smaller groups as being more capable of innovative solution building and that these smaller groups were more easily able to come to agreement as well.

…but it really took a small group, a small group of individuals to actually start thinking about a solution that would work for both of us, and that's where we just started to realize that there was going to be some give and take. [7, Industry]

And it was in the little boardroom, in the one-on-ones, in the smaller conversations with the people that you could work with, that kind of got us to yes. [2, Industry]

Part of why these smaller groups were seen as more effective is that the representatives chosen to represent each party at those small tables were seen as having the capacity and the ability to negotiate.

Like, first of all, we were funded by foundations in the States. They gave us good capacity, ok? So, we all came to the table with equal capacity, and that was important, ok? Enviros were both funded and resourced well, forest companies had their own resources, government, etc. From that perspective, there was good balance at the table. [4, First Nations]

The only way to actually do it is a small- The right people, and it's got to be the people that can respect the people that they're working with, are technically savvy, understand negotiations, understand the other person's, the other side's perspective, and then try and work through it. [7, Industry]

Negotiations that consisted of small groups of capable people created the conditions necessary for representatives of different groups to engage in meaningful deliberation, as discussed in more depth in Sections 5.1.2. and 5.2.2.
5. Discussion

These results describe the larger narrative of the process that created the Great Bear Rainforest. Arising from acrimony, parties of different interests came together to solve these conflicts. They were largely able to do so because of a change in the balance of power; in this instance, ENGOs increased their power and leverage by campaigning in the BC forest products markets and First Nations increased their power and leverage through challenging the consultation process in the courts. Talks before all of these groups were formally collaborating were informal and had little oversight, but they were mediated and used as opportunities to build trust and begin work towards a particular vision.

As this vision was settled on, and later became the EBM plan, the previous talks formalized into bridging organizations, formal recommendations, and decision-making tables. The key to the EBM plan being the solution was its balance of endeavors towards two goals: ecological integrity and human wellbeing. These bridging organizations largely functioned outside of the government-led LRMP process; as the two stakeholders with the most interests and conflict in the Great Bear Rainforest, the JSP regularly met outside of the LRMP process and then would return to the LRMP table with recommendations to be reviewed by other stakeholders and then passed on to the G2G decision-making table where negotiations would continue between the two governments. At the decision-making table, bridging organizations of First Nations helped to reduce the number of people at the table and present a unified front. These organizations were given funding to maintain the capacity to negotiate at the decision-making tables. Other groups of First Nations or individual First Nations that were not part of Coastal First Nations or the Nanawakolas Council were not included in this decision-making, but they will still be met with as a part of the consultation process.

The EBM plan as a boundary object helped to address the interests of all parties in the region engaged in the decision-making process; as the GBR is vast in area, particular targets could be met over the whole land base by adjusting protections at the regional levels. The southern part of the GBR is highly modified and the more productive and economical area for logging companies. As such, this area is more open to industry activities and the northern part of the GBR has higher percentages of protected areas.
Furthermore, the COF as a boundary object was created to help build capacity in the region to meet the human wellbeing goals, including $60 million to support conservation and capacity building in the region and $60 million for economic development to build ecologically sensitive businesses. The Coast Sustainability Trust, created by the government and kept separate from the GBR Coast Funds, was established to mitigate negative economic impacts on residents of the coastal BC area.

Within this narrative, this research sought to examine (1) the perceived importance of different dimensions of legitimacy and (2) the perceived role of shadow networks, bridging organizations, and boundary objects in relation to legitimacy in the GBR by those involved in or otherwise affected by the decision-making process. The results showed that due to the recognized importance representativeness has in deeming a decision-making process legitimate, representation was used strategically as leverage for a more meaningful and even decision-making process. The results also demonstrated that trust was fundamental to maintaining meaningfulness in deliberations as it set foundations for credibility, accountability, and commitment, as well as help players focus on interest-based negotiations rather than perpetuating positional stances. Interviewees further considered the continuation of this trust and the foundation it created as essential to the long-term effectiveness of the GBR. Much of this trust was built up and maintained through shadow networks. As some of these shadow networks were formalized into bridging organizations, some still used shadow networks to get them through difficult parts of negotiation. Bridging organizations such as the JSP and CFN also helped by reducing the number of people at the table without excluding their interests, which proved to help negotiations move forward. The outcome of these negotiations was a boundary object based on the principles of EBM that all participants could agree and commit to as it reflected their interests and values. Since they all agreed and committed to this plan, participants further thought this would add to the future effectiveness of the GBR order. This discussion further investigates how these results speak to the research objectives.
5.1. The perceived importance of different dimensions of legitimacy to natural resource governance

As discussed in the introduction, three criteria are central to identifying a decision-making process as legitimate: it must be representative, it must be meaningful, and it must be effective. These dimensions also coincide with different types of legitimacy. Oftentimes, input legitimacy is characterized by representation, throughput legitimacy is characterized by meaningful negotiations, and output legitimacy is characterized by effective results. The following elaborates on how interviewees perceived the importance of the different dimensions of legitimacy and what that means for study of the different types of legitimacy.

5.1.1. Representativeness

These results, along with the literature, describe that collaborative processes have to achieve legitimacy by hitting a middle-ground where concerned parties are represented, but are still able to come to an effective agreement. They must be present and participatory, but for meaningful negotiations to occur, also must allow those negotiations to move into a smaller room with capable people. Thus, input legitimacy is gained by having different concerned parties present, but throughput legitimacy is obtained by those parties engaging in meaningful deliberation, sometimes through different avenues such as smaller working groups. Often talked about in the literature on legitimacy, representation was recognized as important, particularly to the perception of legitimacy. In the literature, it is questioned whether representation is enough or whether it creates an ‘illusion of inclusion’. This question regards throughput legitimacy and whether the representatives of different parties’ participation was actually meaningful and whether their interests were taken into account in the final outcome.

These results exhibit different parties strategically using their representation as a means of leverage for gaining influence in negotiations. Different actors were able to use representation strategically in this manner, because the different parties were aware that certain actors needed to be represented for the process to be considered legitimate. For example, as the ENGOs ran a market campaign that put pressure on the BC forest industry to change their logging methods in the Great Bear Rainforest, the forest industry recognized the ENGOs had to be represented at the LRMP tables. However, the ENGOs
were not willing to merely be present and greenwash the process. Instead, they used their representation and their market campaigns as leverage to increase their power in the negotiations. Since First Nations and the provincial government also moved towards a new relationship following the 1997 and 2004 Supreme Court rulings, distinguishing them as decision-makers rather than stakeholders was necessary to perceiving the final agreement as legitimate. As First Nations gained this power, they no longer had to rely on alliances with ENGOs as they had in previous natural resource debates and were able to make more demands for the interests of their communities. They were able to support sustaining ecological integrity while still also working towards increasing capacity and human wellbeing in the region, as well as fighting for sustaining cultural integrity in the area. These results then confirm the theory in the literature that representation is not enough without meaningful participation in the process, at least by those most affected by the decisions. It remains to be seen how the GBR will move forward in unceded territories in the GBR of First Nations not involved in the decision-making process.

5.1.2. Meaningfulness

As the above discusses, representation is important, but negotiations need to be meaningful and take these different actors’ interests into consideration for the process and outcomes to be perceived as legitimate too. In the Great Bear Rainforest, meaningfulness was largely achieved through a tiered decision-making process and personal relationships. The tiered decision-making process involved the appropriate actors at the necessary times through different bilateral, trilateral, and multilateral tables of stakeholders and decision-makers. Small groups of capable negotiators worked on the recommendations and then submitted them to a larger, more representative group for feedback. Thus, the collaboration progressed while still maintaining representation of different interests and values. For this tiered process to work, participants needed to build trustworthy, transparent, and accountable relationships with one another, because with those relationships in place, the larger group could entrust the smaller group with the responsibility for decision-making, the representatives could move past positional stances into interest-based negotiations, and representatives could count on one another’s commitment to the outcome.
Elaborated on more in consensus-building and collaboration literature (Susskind et al., 1999) than in the literature on legitimacy, small groups of capable people were seen as instrumental to throughput legitimacy. This also builds on the literature of the capable agent, or a representative who has the capacity and ability to negotiate. As Huxham (1996) describes, collaborative inertia can result from a lack of progress or slow-moving negotiations. This highlights the importance of the capacity of those involved in the negotiations: they must have the funding to continue to participate as well as the endurance to continue in their role. In their research on factors that influence successful collaboration, Mattessich and Monsey (1992) also cite sufficient funds as well as the ability of members to compromise, among others, as important to collaboration. Williams (2002) refers to these capable agents as ‘boundary spanners’ and characterizes them as being able to build sustainable relationships through communication skills, empathizing skills, having an approachable personality, and ability to build trust; being able to influence, bargain, negotiate, mediate, and broker, as well as network; being able to manage complexity and interdependencies; being able to understand the roles, motivations, and accountabilities of the different participants. These capable agents are necessary for a meaningful negotiation, because they can remain engaged in the process and use their skills to engage in meaningful negotiations and build trustworthy, committed relationships.

Though not often emphasized in literature on legitimacy, these interviews highlighted the importance of trusting relationships in a formal and informal setting and how they are essential to the participants’ perception that a decision-making process was legitimate. These findings do, however, agree with the existing literature on collaboration and consensus-building. Interviewees commented on how a large change in the relationships that occurred was a building of trust between people representing different interests. Without this trust, as some interviewees mentioned, there was no perceived legitimacy. Along with building trust, representatives also built up their credibility with one another. This also allows for an increased perception of legitimacy as each representative can trust in the commitments of the other representatives. The relationships between participants built in accountability to the process as they depended on each other to follow through on their agreements. Furthermore, as representatives built relationships
with one another, they could fall back on those personal relationships to get them through particularly difficult spots of negotiation. As the interest-based negotiations were important to creating an EBM plan that could be agreed upon by everyone, having relationships that pulled participants away from positional stances in negotiations were important to achieving the ultimate result.

5.1.3. Effectiveness

As the Great Bear Rainforest agreement is fairly new, it has yet to be determined how effective it is. Companies, the BC provincial government, and First Nations are still or have been determining how implementation of EBM will work. However, participants did speak to their perceptions of how effective the GBR will be. Interviewees cited three aspects in particular that affected their perception of the GBR’s prospective effectiveness: the reflection of their interests and values in the outcome, one another’s commitment to the outcome, and institutional memory.

Many participants expressed that they expected the GBR to be effective, because they had all agreed to it. Interviewees commented that they would not have agreed to the final GBR order if their values and interests were not represented in the final outcome (elaborated on further in Section 5.2.3.). As such, participants are committed to ensuring a beneficial outcome in the GBR, partially to see their interests are fulfilled and partially due to the commitments they made to other representatives. Interviewees did bring up concerns, however, about institutional memory. Since relationships between representatives were so important to building up dependability and accountability in the GBR process, some wondered how the outcome would be affected if these relationships were not also passed down.

5.2. The perceived role of shadow networks, bridging organizations, and boundary objects in relation to legitimacy in the GBR

Legitimacy is never inherent to a decision-making process. Rather, it has to be built into it. In this research, we focused on how three institutions (shadow networks, bridging organizations, and boundary objects) contributed to the perception of legitimacy or detracted from it. It is then important to look at how these institutions affected the three dimensions of legitimacy described above and their interactions with the different types of legitimacy.
5.2.1. Shadow networks

Shadow networks are key in building the relationships that allowed the decision-making process to be as meaningful as it was. Through talks outside of a formal process, members of different interests began discussing possibilities and building innovative solutions. It is important that representatives can meet outside of formal institutions to negotiate and explore innovative alternatives, as evidenced by the COF boundary object whereby shadow networks were used to obtain resources to fulfill human wellbeing goals of EBM. They otherwise may have been difficult to achieve and proven to be an obstacle in negotiations moving forward. Furthermore, participants’ private interactions with one another, a part of the shadow network in the Great Bear Rainforest, allowed them to create personal relationships that could move them past difficult points in the negotiations when they otherwise may have remained positional. As the interest-based negotiations were important to creating an EBM plan that could be agreed upon by everyone, having relationships that pulled participants away from positional stances in negotiations were important to achieving the ultimate result. It must be recognized, as well, that these relationships were not built solely through familiarity at the negotiations table. Many of these relationships were built in social settings, sometimes encouraged by a mediator, and sometimes not. However, the relationship building that occurred in these informal areas, and the discussions that would continue to occur in these informal settings through personal relationships, did not appear to detract from participants’ perceptions of the legitimacy of the process or the outcome. Rather, participants seemed to see these relationships as essential to the GBR coming to fruition. It should be noted that interviewees did not mention the negative aspects attributed to shadow networks. Rather, these results seem to support Pelling et al.’s (2008) assertion that if participants acknowledge the shadow network but allow it to have a life of its own, it can contribute a lot to learning and innovation.

5.2.2. Bridging organizations

Bridging organizations played a key role in this decision-making process. They helped reduce the number of people at the table by vesting interests of many groups into only a couple of representatives. They also contributed to this tiered decision-making process, because member groups met on their own to formulate decisions, and then
representatives of those member groups met as part of a bridging organization to further synthesize their interests with other representatives into one platform. This allowed bridging organizations to conduct themselves as a single actor with particular interests and values. By being able to represent the interests of many through one or two individuals at a negotiating table, negotiations were more productive and moved past positional stances.

It is also important to look at the role bridging organizations played in the preliminary negotiations. ENGOs and the forest industry began negotiating their interests in the GBR within a shadow network. However, as they became more serious about resolving their differences and working towards the particular solution of the EBM plan, they came together as a bridging organization. The effort it took to formalize their partnership and commitment built up trust and respect between representatives of these historically oppositional actors. Their efforts to work with one another under a single actor reduced the amount of mediation needed in later tables and forums. As ENGOs and the forest industry had amongst the largest differences to reconcile, the decisions they did end up settling on and submitting as recommendations to the larger representative tables and decision-makers helped move the process forward.

It is similarly important to look at the bridging organizations of First Nations. Though the different nations in the Great Bear Rainforest hold different interests and values, coming together under bridging organizations at the negotiating table and the decision-making table helped present a unified front, increased their capacity to negotiate, and helped them demand a new relationship with the BC provincial government. It should be noted, however, that these organizations were supported as being the sole representation for First Nations; unaligned First Nations were not represented at the decision-making table or given the capacity to maintain engagement in negotiations as the bridging organizations were (though they will have to be consulted in the implementation process). Thus, while bridging organizations can be effective in bringing diverse interests and values to the table and moving them forward in negotiations, they can also be complicit in underrepresentation of singular actors.
5.2.3. Boundary objects

Boundary objects were key in this process as vessels by which participants could integrate their interests and values. The final products were deemed as acceptable and fair, because they were reflective of those interests and values. Many interviewees mentioned that the reason they think the outcome is successful or works is because all the parties came to a consensus on it, and that they would not have done so had it not represented their interests. This process is compared to prior planning processes in which some of these parties, such as ENGOs or First Nations, may not have been represented or may have been represented but with no meaningful power or input within the negotiations. These results reflect the importance of boundary objects within collaborative natural resource management. The EBM plan, as it was representative of the many different interests and values within the region that were brought to the table, was perceived as adding to the legitimacy of the GBR agreements. It was the balance of the goals of ecological integrity and human wellbeing that allowed groups of different interests to commit to this outcome. Participants agreed that the basis of EBM had to be founded on the best knowledge available. Furthermore, there was give and take throughout the creation of EBM from all parties involved. The process of putting EBM together, then, was meaningful as decisions went through negotiations first between stakeholders and then between decision-makers. The COF was important to the negotiations between decision-makers as it helped create a means by which human wellbeing goals could be met in the region. It is also important to recognize that the COF was put together by a shadow network that was able to explore conservation financing as a means of reaching the human wellbeing goals in EBM. These decisions were then released to the public for review and comment.

As this tiered process for the creation of a boundary object accounts for everyone’s interests and values, it contributes to the perceptions of the final product’s legitimacy. It is important to acknowledge that boundary objects are important to the meaningfulness of participation. As Robinson and Berkes (2011, p. 8) state, “While the concepts of deliberation and participation cover some of the same ground, they are clearly distinct…Participation without deliberation is more likely to treat knowledge, interests, and identities as given—as inputs to decision-making process—rather than as
phenomena that can sometimes be created or transformed through the exchange of ideas. Deliberation makes participation more conducive to learning.” Mansbridge (2010) further comments that then, as participants deliberate, they can then create a new entity, such as a boundary object, that then meets their interests and gains their allegiance.
6. Conclusions

This research is a step towards uncovering the various nuances around legitimacy and different auxiliary institutions that contribute to the perceived success or failures of collaborative efforts in natural resource governance. It used a literature review to identify representativeness, meaningfulness, and effectiveness as central dimensions of legitimacy. It revealed and demonstrated the importance of throughput legitimacy, or meaningful deliberations, to the larger perceptions of legitimacy. It further substantiated a relationship between the different types of legitimacy. This research demonstrated how shadow networks act as precursors to bridging organizations as well as forums for creative solution building. It also demonstrated how bridging organizations can facilitate meaningful negotiations. It exemplified the importance of boundary objects as well; they create legitimate outcomes that representatives are committed to implementing. These findings could have further implications in the GBR as the implementation of the agreement is beginning.

This research also identifies areas that warrant further investigation. Most importantly, this study highlights the importance of studying throughput legitimacy, the realm in which the dimensions of legitimacy most interact with the institutions investigated, as it often reveals how representative a decision is and how effective it could be. It remains unclear how important input legitimacy is in governance given that decision-making now often incorporates representatives of organizations or special interests, not just representatives of the populace. Furthermore, output legitimacy, given interview responses, seems to be inherently connected to throughput legitimacy. Whether an outcome of a process perceived as illegitimate due to a lack of meaningfulness can find legitimacy in effectiveness is yet to be investigated, though there are many examples where processes perceived as legitimate had outcomes perceived as illegitimate, or ineffective, due to poor implementation (Mascarenhas and Scarce, 2004; Harshaw, 2010). Many interviewees shared that they would not have agreed to a final outcome that they did not feel was fair or reflective of their interests, and others reflected that concerns not represented in the decision-making process would likely find a voice in the reception of the outcome. Thus, these connections deem further investigation as well.
As these results show that participation is an important aspect of legitimacy, an investigation of larger scope that could take into account how those not involved in a decision-making process for NRM perceive the legitimacy of the agreement remains important. While this agreement did take the interests of other stakeholders into account, it is important to hear more about those that were not major participants or those that chose not to participate and what their perceptions of the legitimacy of a similarly collaborative agreement are. A study focusing on the different levels of participation and the corresponding perceptions of legitimacy could further comment on what kind of participation is important for a process to be considered legitimate. To further investigate how network dependent decision-making processes are perceived as legitimate or not, it would be worthwhile to investigate the public’s opinion as representative of different demographics and regions.

There still remain some other unanswered questions regarding institutions as well. It is important to do more research into how shadow networks contribute or detract from governance processes. While in the case of the GBR the interviewees found shadow networks as beneficial, the role of informal networks in governance and how they affect the perceptions of legitimacy still have to be researched further. Furthermore, the role these shadow networks play as precursors to bridging organizations remains a subject worth further investigation. Understanding the role of informal networks in relation to these more formal institutions is necessary to better understand how decision-making is made in network forms of governance and thus how this governance can be best evaluated. Investigating instances where bridging organizations may also cover up the lack of meaningful participation is also necessary. Looking into the role of different kinds of boundary objects can help clarify what characteristics of boundary objects contribute or detract from perceptions of legitimacy. This research revealed that not only should research look at formal and informal institutions such as those investigated here, but also investigate the role individual actors play as ‘boundary spanners’ in collaborative natural resource governance. While different theories exist as to what dimensions of legitimacy are important and what effect the different institutions investigated heretofore have on collaboration and legitimacy, there are few empirical studies investigating them. This
study demonstrates the interconnections between these formal and informal institutions and legitimacy and warrants further investigation.

Lastly, more empirical research investigating the concept of legitimacy, its perceptions, and influential factors is needed. While many papers add to the theory of legitimacy, there remains little empirical research solidifying what is important about the concept of legitimacy in governance and what factors seems to affect it most. Furthermore, connecting the concept of legitimacy across the variable, relevant fields is important to further fleshing it out, as well as connecting it to literature that invokes its concepts under different terminology. For instance, the literature on representative, distributive and procedural justice seems particularly linked to the literature on input, throughput, and output legitimacy, but they have not yet been compared or connected. Further understanding of legitimacy as a characteristic of governance and what is important in people’s perceptions of it will bring people closer to being able to better evaluate different types of government, governance, and management.
Bibliography


### Appendix I

**Great Bear Rainforest Timeline**

<table>
<thead>
<tr>
<th>Year</th>
<th>Event</th>
</tr>
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<tbody>
<tr>
<td>1997</td>
<td>Land and resource management planning begins on B.C.’s coast.</td>
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<tr>
<td>2000</td>
<td>Several coastal forest companies and environmental groups set aside differences and begin to work collaboratively through the Joint Solutions Project.</td>
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<tr>
<td>2004/2005</td>
<td>Planning participants deliver consensus recommendations to B.C. government; government-to-government discussions with area First Nations begin.</td>
</tr>
<tr>
<td>2006</td>
<td>B.C. and First Nations announce land use decisions and commit to ecosystem-based management throughout the Great Bear Rainforest.</td>
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<tr>
<td>2007</td>
<td>New legal land use orders are established for the South Central Coast and Central North Coast.</td>
</tr>
<tr>
<td>2009</td>
<td>B.C. government amends legal orders to protect 50% of natural historic old growth forests; all participants agree to five-year extension to implement ecosystem based management.</td>
</tr>
<tr>
<td>2009</td>
<td>114 conservancies and 21 Biodiversity, Mining &amp; Tourism Areas are established from 2006 to 2009.</td>
</tr>
<tr>
<td>2010/2011</td>
<td>B.C. government reaches reconciliation protocol agreements with Coastal First Nations and Nanwakolas Council. One outcome is to increase their participation in the forest sector and protect cultural and social interests.</td>
</tr>
<tr>
<td>2015</td>
<td>B.C. government, after government-to-government discussions, invites public comments on proposed Great Bear Rainforest land use order and potential new Biodiversity, Mining and Tourism Areas.</td>
</tr>
<tr>
<td>2016</td>
<td>B.C. government to introduce the <em>Great Bear Rainforest (Forest Management) Act</em> and a new Great Bear Rainforest Land Use Order to legally implement elements as agreed to.</td>
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Timeline retrieved from naturallywood.com on July 18, 2017.
Appendix II
Great Bear Rainforest Land Use Zones

Great Bear Rainforest Land Use Zones

Parks and Protected Areas
Conservancies
Biodiversity, Mining and Tourism Areas
Special Forest Management Areas
Great Bear Rainforest Boundary

Ministry of Forests, Lands and Natural Resource Operations
West Coast Region, Nanaimo

October 20, 2016
Appendix III

Interview Schedule

Note: Wording of these questions may change if the respondent did not take part in the GBR negotiations

Introduction and Background

Please tell me about your background and how you came to take part in the GBR negotiations.

Objectives as participants

Coming into the GBR negotiations, what did you hope to achieve?

How would you describe the relationships between yourself and the representatives of different groups at the beginning of the negotiations? How did these relationships evolve through the process?

Boundary Objects

How were the priorities you entered negotiations with addressed?

What parts of the EBM plan did different parties find agreement on? Over what aspects were there disputes?

Shadow Networks

How were those involved in the formal GBR negotiations involved (or not involved) in other aspects of solidifying the GBR?

Legitimacy

What aspects do you think make the GBR agreement successful? Unsuccessful? What aspects do you think GBR agreement shares with other successful policies?

Do you feel that the different interests of the different groups were represented throughout the negotiations? Did this representation change over the twenty years? Do you think that the outcomes were representative of the populations’ interests?

Do you feel that the final GBR act is the result of genuine, meaningful deliberation between the actors? Did the deliberations become more or less meaningful throughout the GBR negotiations? In what ways were the outcomes of these deliberations represented in the final document?

What is your overall evaluation of the GBR decision-making process and final outcome?

How do you think the GBR will endure overtime? How do you think the GBR will withstand changes in social and political realms?
Additional considerations/Wrapping up

Is there anything else you would like to say on this topic?

Is there anyone else with whom you think I should speak?
Appendix IV
Interview Invitation

Dear [ ...]

I am writing to invite you to participate in a research interview about your views on the roles of informal institutions in the negotiations of the Great Bear Rainforest [GBR]. We are particularly interested in how informal dimensions of the negotiations and decision-making may affect your perceptions of the legitimacy of the final agreement.

You are receiving this invitation based on your involvement in the GBR proceedings and/or negotiations. Further details about this project are described in the attached information/consent form. I look forward to hearing from you, and would be happy to answer any questions you may have about this project.

Best wishes,
Alice Henry (MSc Student)

Dr. Shannon Hagerman
Assistant Professor, Social-Ecological Systems
Department of Forest Resources Management

Faculty of Forestry
University of British Columbia
Tel (number here)
Appendix V
Consent Form

The role of informal institutions in fostering legitimacy in collaborative natural resource planning

Who is conducting the study?
Principal Investigator: Dr. Shannon Hagerman, Assistant Professor, Faculty of Forestry, Phone: (phone number here), email: (email address here).

Co-Investigators: Dr. Robert Kozak, Associate Dean, Academic Professor, Faculty of Forestry, Phone: (phone number here), email: (email address here), Alice Henry, MSc Student, Forest Resources Management and Wood Sciences, Phone: (phone number here), email: (email address here).

Why are we doing this study?
You are being invited to take part in this research study, because you were involved in the Great Bear Rainforest [GBR] negotiations. We want to learn more about how participants such as yourself view the effects of using informal institutions on the perceived legitimacy of the GBR agreement. This study will help us learn more about what factors affect the legitimacy of collaboratively planned natural resource governance [NRG] and better predict the long-term success of these plans. This research is being done to inform a graduate degree.

How is the study done?
Your participation will include a one-time interview lasting approximately 1 hour to discuss your views on the effects of using informal institutions in the GBR negotiations. Participation is completely voluntary. If you agree to participate in the study, you are still free to withdraw at any time. You may decline to answer questions during the interview. With your consent, I will take notes and audio-record the interview to ensure accuracy in final reporting. I will send any quotes I hope to use prior to writing for your approval. See below for matters ensuring confidentiality.

Study Results
The results of this study will be reported in a graduate thesis and may also be published in journal articles and books. If you are interested in receiving a copy of the results, please check the box on the consent form and provide either a mailing address or email address.

Potential risks of the study
We do not think there is anything in this study that could harm you or be bad for you. Some of the questions we ask may seem sensitive or personal. You do not have to answer any question if you do not want to. You have the right to stop the interview and/or inform the researcher about information you do not want to have included in the final document.

Potential benefits of the study

What are the benefits of participating?
You may benefit from this study by having the opportunity to discuss and reflect on your role and the different factors that helped create the GBR agreement. Others may benefit in the future from what we learn in this study about the perceived legitimacy of informal institutions in collaborative planning for NRG.

Confidentiality

How will your privacy be maintained?
Your confidentiality will be respected. Information that discloses your identity will not be released without your consent unless required by law. Only the PI and Co-Is (details above) will have access to the information collected. Your name will not appear on any research report without your consent. A copy of your transcript and the final results will be provided to you at your request. All documents and information collected will be identified only by code number and kept in a locked cabinet at UBC, and password protected computer files, for at least five years. After five years, all data will be destroyed.

Contact information

Who can you contact if you have questions about the study?
If you have any questions or concerns about what we are asking of you, the Principal Investigator, Dr. Shannon Hagerman, and co-investigator, Alice Henry, are available to answer any questions you may have about this research study. Contact information is listed at the top of this form.

Who can you contact if you have complaints or concerns about the study?
If you have any concerns or complaints about your rights as a research participant and/or your experiences while participating in this study, contact the Research Participant Complaint Line in the UBC Office of Research Ethics at 604-822-8598 or if long distance e-mail RSIL@ors.ubc.ca or call toll free 1-877-822-8598.

Taking part in this study is entirely up to you. You have the right to refuse to participate in this study. If you decide to take part, you may choose to pull out of the study at any time without giving a reason and without any negative impact. Your signature below indicates that you have received a copy of this consent form for your own records.

Your signature indicates that you consent to participate in this study.

________________________________________________________________________
Participant Signature Date
Printed Name of the Participant (or Parent or Guardian) signing above

Yes, I would like to receive the results of this study. Please send the results to the following mailing address or email address:

____________________                        ______________________
Street                                                                 Email address

____________________
City, Province and Postal Code
Appendix VI

Ecosystem-based management over time: a systematic review of concepts and their emphasis by different actors in the Great Bear Rainforest

Introduction

The ecosystem-based management implementation plan was finalized for the Great Bear Rainforest, an area covering 6.4 million hectares of temperate rainforest on British Columbia’s coast, on February 1, 2016. An effort that spanned two decades, the GBR management plan was constructed by four different groups working in collaboration: the BC provincial government, five forestry companies (referred to as the Coast Forest Conservation Initiative (CFCI)), environmental NGOs (ENGOs) under the title of the Rainforest Solutions Project (RSP), and 26 First Nations that claim territory in the area represented by either the Coastal First Nations (CFN) or Nanwakolas Council. In 2001, the Coast Information Team (CIT) was created with the agreement of the above four groups to use the best available science to create a plan for ecosystem-based management (EBM) for the GBR region. Their Ecosystem-Based Management Planning Handbook was published in 2004, and by 2009 an interim land and resource management agreement was announced (Armstrong, 2009). The finalized version was released in 2016, marking the end of twenty years of work. Throughout this time, the groups involved had shifting priorities, and trends in ecosystem-based management and natural resource management changed as well.

Though ecosystem approaches have been discussed in relation to natural resources management since Aldo Leopold’s Land Ethic in 1949 (Leopold and Udall, 1966) and with more focus on how it could be practiced in the 1960s (Van Dyne, 1969), they have largely remained nebulous as different aspects were emphasized by different practitioners in their evolution (Grumbine, 1994). In “What is Ecosystem Management” (Ibid), R Edward Grumbine made the first attempt to synthesize the concepts relating to ecosystem management as discussed in the literature at the time. His working definition of ecosystem management is: “Ecosystem management integrates scientific knowledge of ecological relationships within a complex sociopolitical and values framework toward the general goal of protecting native ecosystem integrity over the long term.” In partial contrast, Professor Rodolphe Schlaepfer, a professor emeritus at the Swiss Federal Institute of Technology and contributor to the International Union of Forestry Research
Organizations (IUFRO), uses the term ecosystem-based management because, “managers recognize that they cannot manage all components, processes, and interactions of the ecosystems” (1997, pg. 17). He focuses the definition of ecosystem-based management on manipulating aspects of ecosystems to attain certain goals, be it commodity production or more environmental goals. Despite having different aspects emphasized by different resource professionals and academics, the utilization of EBM has increased since the 1980s to be one of the more frequently used approaches in natural resource management (Cortner and Moote, 1994; Berkes, 2012). Although EBM generally focuses on managing at the ecosystem level, the core aspects of EBM that are emphasized have changed (Long et al., 2015). However, it has yet to be shown how these changes occurred over time; Long et al. (2015) looked at how different aspects were emphasized by different actors and also focused their review only on papers or papers written by authors widely accepted as leaders in their field.

This research utilizes a systematic literature review to ask the following questions: how did the fundamental concepts of ecosystem-based management either change or change in importance over time? How are these principles emphasized differently by actors in the Great Bear Rainforest in relation to these changes over time? While a handful of papers conduct literature reviews on the core principles of EBM (Grumbine, 1994; Arkema et al., 2014; Long et al., 2015), and some to identify the difference in the importance of those principles (Long et al., 2015), no literature review has yet analyzed how the fundamental concepts of EBM have changed over time or how each concept’s importance has varied over time. Furthermore, this research reviews grey literature produced regarding the Great Bear Rainforest to investigate how the different groups involved in the negotiations expressed the concepts of EBM differently, how this expression has changed over time, and how it reflects their different priorities.

**Methodology**

**Data collection**

*EBM systematic review*

A systematic review of the literature using Web of Science Core collection was conducted to analyze and assess how core concepts and constructs about ecosystem-based management (EBM) have changed over time. [add dates here]. Alternative
databases such as Google Scholar were not used for this analysis, because they generate a large number of papers that merely include the search terms without providing any definition or inclusion of principles. The following search terms were used: “ecosystem-based management” or “ecosystem management” and “principles”, “character*”, or “defin.” Articles that discussed specific core concepts of EBM were retained while papers that only provided a brief definition of EBM as a concept, principles for applying EBM, and/or ecological principles to be considered in applying EBM were excluded from the analysis. Articles that referenced the definitions for the core concepts of EBM from a single other paper were also eliminated, unless that paper was not generated by the search terms. Searches for each combination of terms plus “forest*” were also done to retrieve a number for how many of the papers within the literature addressed forest management specifically. Papers that discussed related concepts, such as the ecosystem approach to management, adaptive management, or landscape management, were excluded as they are often juxtaposed with ecosystem management and are reviewed in separate literatures. Papers not written in the English language were also excluded. The Ecological Society of America also formed a committee that defined EBM and its scientific basis. As this was not retrieved from the database search, it was included as an outside source. This search strategy resulted in 1440 papers after duplicates were removed (Fig. 1). After screening and reading the full text articles, the search produced 41 papers that met the criteria for analysis (Appendix I).
Records identified through database searching  
\textit{n}=1488

Additional records identified through other sources  
\textit{n}=1

Records after duplicates removed  
\textit{n}=1440

Records screened  
\textit{n}=1440

Records excluded  
\textit{n}=1295

Full text articles screened for eligibility  
\textit{n}=100

Full text articles excluded  
\textit{n}=59

Studies included in synthesis  
\textit{n}=41

\textit{Figure 6: PRISMA diagram of the EBM systematic review of the literature.}
Grey literature review
In addition to the scholarly literature, I conducted a search of the grey literature for documents mentioning the core concepts of EBM, from 1995, the year ENGOs began market campaigns to protect the Great Bear Rainforest (GBR), to present. I searched through the grey literature produced by different actors involved in the decision-making process: the Coast Forest Conservation Initiative (CFCI), a joint organization of five forest industry companies; the Rainforest Solutions Project (RSP), a joint organization of three environmental, non-governmental organizations (ENGOs) and other associated ENGOs; the Joint Solutions Project (JSP), a combined working organization of CFCI and RSP; the BC Provincial Government; the Coastal First Nations (CFN) or Nanwakolas Council, representative organizations of different First Nations in the GBR; and the Coast Information Team (CIT), or the group of experts tasked with formulating the EBM handbook to be used in the GBR. I also considered miscellaneous documents sponsored or otherwise tied to these interest groups or actors involved in the decision-making process. This yielded a total of 16 papers for analysis (Appendix II).

Analysis
EBM systematic review
Each document was analyzed line-by-line through coding. Coding began deductively to identify commonly referenced concepts in the literature. This process was supplemented by inductive coding methodology (Marshall and Rossman, 2016) to identify concepts not previously identified in the literature. The next round of coding grouped individual codes (such as ecological integrity, economic development, or adaptive management) into one of three categories: ecological dimensions of EBM, human dimensions of EBM, and the management dimensions of EBM. After coding using this system, I conducted another round of coding that split the themes into smaller categories to better identify patterns: biophysical properties, human wellbeing, incorporating knowledge, planning and decision-making, scale and boundaries, and socioecological systems concepts (Table 1).

Table 1: Coding categories and EBM principles. Categories of codes are listed, along with specific EBM principles identified under that category and how it is defined.

<table>
<thead>
<tr>
<th>Categories</th>
<th>EBM Principles</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biophysical properties</td>
<td>Complex, dynamic systems</td>
<td>The recognition that ecosystems are complex and have multiple connections and flows</td>
</tr>
<tr>
<td></td>
<td>Diversity</td>
<td>The recognition of maintaining biodiversity</td>
</tr>
<tr>
<td></td>
<td>Ecological integrity</td>
<td>The recognition of maintaining an ecosystem’s health</td>
</tr>
<tr>
<td><strong>Human wellbeing</strong></td>
<td><strong>Development</strong></td>
<td>The recognition of community development as an aspiration of EBM</td>
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<td>---------------------</td>
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<td>-------------------------------------------------------------</td>
</tr>
<tr>
<td></td>
<td><strong>Economic aspects</strong></td>
<td>The recognition of economics as an important consideration in EBM</td>
</tr>
<tr>
<td></td>
<td><strong>Social values and objectives</strong></td>
<td>The recognition of what society values (such as culture) as being important in EBM</td>
</tr>
<tr>
<td><strong>Incorporating knowledge</strong></td>
<td><strong>Decision-making is based on research</strong></td>
<td>Decisions are made based on current research findings</td>
</tr>
<tr>
<td></td>
<td><strong>Importance of data collection and monitoring</strong></td>
<td>Ongoing data collection and monitoring are part of EBM</td>
</tr>
<tr>
<td></td>
<td><strong>Utilize knowledge from different fields</strong></td>
<td>Using knowledge from different sources such as the scientific community, social science research, and indigenous communities</td>
</tr>
<tr>
<td><strong>Planning and decision-making</strong></td>
<td><strong>Adaptive (to uncertainty)</strong></td>
<td>It is important EBM be responsive to change in the ecosystem and/or management</td>
</tr>
<tr>
<td></td>
<td><strong>Goal-oriented</strong></td>
<td>EBM should have targets for management</td>
</tr>
<tr>
<td></td>
<td><strong>Participatory</strong></td>
<td>Management planning should include people from different interest groups</td>
</tr>
<tr>
<td></td>
<td><strong>Precautionary</strong></td>
<td>Management should follow the precautionary principle and not create undue risk or harm to the public or environment</td>
</tr>
<tr>
<td><strong>Scale and boundaries</strong></td>
<td><strong>Expand spatial scale (place-based and systems perspective)</strong></td>
<td>EBM should manage for the ecosystem’s boundaries rather than poligeographical boundaries</td>
</tr>
<tr>
<td></td>
<td><strong>Expand temporal scale</strong></td>
<td>Management should match the timescale for ecological processes of an ecosystem</td>
</tr>
<tr>
<td></td>
<td><strong>Organizational (coordination) change</strong></td>
<td>Management or agency organization may have to change to properly manage an ecosystem</td>
</tr>
<tr>
<td><strong>Socioecological systems concepts</strong></td>
<td><strong>Ecosystem goods and services</strong></td>
<td>EBM needs to maintain the services and/or goods ecosystems provide humans</td>
</tr>
<tr>
<td></td>
<td><strong>Humans considered part of the ecosystem</strong></td>
<td>Management recognizes humans as part of the ecosystem rather than separate</td>
</tr>
<tr>
<td></td>
<td><strong>Sustainability</strong></td>
<td>EBM needs to be able to withstand change and endure over time</td>
</tr>
</tbody>
</table>

I compared the number of documents that mentioned particular concepts to the year they were published to then show how the core concepts of EBM and their importance as a core concept has changed over time.

*Grey literature*
I coded these documents with the same synthesized codes listed in Table 1. I then conducted a comparison of the frequency the different concepts of EBM were mentioned per document, per sector, arranged by year.

Results

EBM systematic review

Figure 2: Average percentage the principles within the ‘Biophysical properties’ category were mentioned over time.

Biophysical properties

Though ‘Ecological integrity’ was pretty consistently mentioned over the years and ‘Ecological resilience was fairly consistently not mentioned’, both ‘Complex, dynamic systems’ and ‘Diversity’ were mentioned less as time passed, resulting in a general decline in the graph (Fig. 2).
Figure 3: Average percentage the principles within the ‘Human wellbeing’ category were mentioned over time.

*Human wellbeing (Figure 3)*

All aspects of human wellbeing became increasingly mentioned as time passed. Though ‘Social values and objectives’ was fairly consistently mentioned, ‘Economic aspects’ in particular became mentioned more frequently mentioned in recent years, resulting in the general increase in the graph (Fig. 3).
Figure 4: Average percentage the principles within the ‘Incorporating knowledge’ category were mentioned over time.

*Incorporating knowledge (Figure 4)*

None of these aspects showed a particular pattern. ‘Decision-making is based on research’ and ‘Importance of data collection and monitoring’ were consistently mentioned, and ‘Utilize knowledge from different fields’ was mentioned with some frequency, but with no particular pattern.
Figure 5: Average percentage the principles within the ‘Planning and decision-making’ category were mentioned over time.

Planning and decision-making (Figure 5)
Both ‘Adaptive (to uncertainty)’ and ‘Participatory’ were mentioned with fairly consistent frequency, though that frequency diminished recently for ‘Adaptive (to uncertainty)’ and increased recently for ‘Participatory’. ‘Goal-oriented’ shows no particular trend, but ‘Precautionary’ has become increasingly mentioned as an EBM concept in recent years. The increases in ‘Participatory’ and ‘Precautionary’ principles could be the cause of the recent increase in principles mentioned (Fig. 5).
Figure 6: Average percentage the principles within the ‘Scale and boundaries’ category were mentioned over time.

Scale and boundaries (Figure 6)
All of these aspects have been mentioned with fair consistency and show no obvious trend.
Socioecological systems concepts (Figure 7)

‘Humans considered part of the ecosystem’ was mentioned consistently throughout the time period and ‘Sustainability’ was mentioned with slightly increasing consistency. ‘Ecosystem goods and services’ was mentioned increasingly over time.

An overall picture shows a general increasing trend in the mention of ‘Human wellbeing’ principles and a general decreasing trend in the mention of ‘Biophysical properties’ principles over time (Figure 8). For a full breakdown of the results by principle, see Appendix III.
Figure 8: The average percentage principles of the five different categories were mentioned over time.

**Grey literature (Figure 9)**
The Coast Information Team mentioned the majority of these concepts in the literature except for Socioecological systems concepts. BC Provincial documents mentioned fewer concepts in the literature as time passed, as did ENGOs. CFCI and JSP stressed Human Wellbeing concepts most, while both the ENGOs and BC government stressed Biophysical properties most (although Human Wellbeing was a close second for both). The Nanwakolas Council also stressed Biophysical properties and Human wellbeing. Ecological integrity and Social values and objectives were mentioned in 100% of the literature reviewed. Economic aspects and Participatory were mentioned in 94% of the literature reviewed. For a full breakdown of results by category and sector, see Appendix IV.
Figure 9: The average percent principles of the five different categories were mentioned by each sector.

**Discussion**

The most evident patterns arising from the data are the increased prevalence of Human wellbeing topics emphasized in the literature over time coupled with the decreased prevalence of Biophysical properties.

The increase in collaborative decision making in natural resource management over the past 20 years (Lockwood *et al.*, 2010) could be a possible reason for increased emphasis placed on social values in the EBM systematic review. As local communities are brought into the decision-making process, so are their values and concerns such as aspects of cultural importance...
and economic impacts. This also agrees with the increased emphasis on the ‘Participatory’ aspect of the Planning and Decision-making category. Aspects that diminished in the frequency with which they were mentioned, such as diversity in the Biophysical properties category, may have diminished overtime either due to less importance in EBM or because their initial importance made them commonplace or presumed and less necessary to specify in more recent publications.

The documents analyzed in the grey literature review all served different purposes. While some were press releases or fact sheets, others were comprehensive reports crafted to serve as recommendations for EBM planning in the Great Bear Rainforest. As such, the depth and detail that these publications dedicated to defining the key concepts of EBM vary. The Coast Information Team EBM Planning Handbook goes into all the various details of the core aspects of EBM as does their EBM Principles and Goals publication. However, the CFCI, in contrast, released different fact sheets to provide a brief overview about the EBM plan for public consumption. As such, the differences in the purposes of the documents included in the literature review could have affected the results and what aspects of EBM were emphasized. Thereby, more aspects that served as better umbrella terms (such as ecological integrity) may have been mentioned more than those that were more specific (such as ecological resilience).

While the documents reviewed each had different purposes, the organizations that published them also had different priorities which could have been reflected in the principles of EBM that were emphasized and the purposes of the publications they produced. While the Coast Information Team’s priority was to deliver a scientifically accurate evaluation of how to best manage the GBR ecosystem, the CFCI may have prioritized reassuring its customer base that it was involved in creating this management plan and advertising.

The trends in the GBR grey literature review, rather than reflecting trends in EBM necessarily, could reflect the purposes of the different publications or the priorities of the different organizations. As the GBR planning was founded on participatory planning, including First Nations, the emphasis on Social values and Participatory aspects is fitting. Ecological integrity was included in the definition of EBM in every piece of literature, and this could be due to its fairly incorporating nature as opposed to more specific aspects of EBM. Economic aspects are likely mentioned often as well given the role of both local communities, the government, and the forest industry in the negotiations and the importance of economic aspects in their individual
priorities. This is further supported by the emphasis on Human Wellbeing concepts by the CFCI and JSP in which the forest industry is either the sole focus or one of two interest groups.

It is also important to take into consideration some of the weaknesses in this research. The grey literature review had a low $n$, and so it is hard to generalize the findings from that literature and specify any significant trends. As previously discussed, since the different papers in the grey literature review had different purposes and were published by organizations with different priorities, they cannot be compared as complete equals, but rather recognizing how the difference in their origins affect the results. Lastly, it should also be noted that certain principles in the grey literature review were emphasized more than others because of the standard definition of EBM that was included in many of the documents:

“EBM is an adaptive approach to managing human activities that seeks to ensure the coexistence of healthy, fully functioning ecosystems and human communities. The intent is to maintain those spatial and temporal characteristics of ecosystems such that component species and ecological processes can be sustained, and human well-being supported and improved.”

-Coast Information Team, 2001

This definition includes the aspects: ‘Adaptive (to uncertainty)’, ‘Social values and objectives’, ‘Ecological integrity’, ‘Expand spatial boundaries’, and ‘Expand temporal boundaries’, and so every time this definition was repeated in the grey literature, these were aspects that were emphasized.

Future research could investigate how individual organizations involved in the GBR negotiations perceived their definitions of EBM changing over time and conduct interviews to uncover their priorities. Further research could also uncover how, despite EBM’s core aspects in the literature, EBM is actually practiced and what core aspects are most reflected empirically.
Works Cited


Appendix I: List of papers from systematic literature review of EBM


Appendix II: List of papers from grey literature review


Central Coast LRMP Completion Table. (2004). *Report of consensus recommendations to the provincial government and First Nations*.


Coast Information Team. (2001). *Principles and goals of ecosystem-based management. Excerpt from CCLRMP framework agreement/draft interim plan, April 2001*.

Coast Information Team. (2004). *CIT Ecosystem-based management planning handbook*.


North Coast LRMP Planning Table. (2004). *North Coast land and resource management plan: Final recommendations*.

Precursor to Joint Solutions Project. (2000). *Forest companies and environmental groups pursue unprecedented solutions initiative: Will jointly sponsor consultation and scientific and technical work on conservation-based ecosystem management for temperate rainforests on the North and Central Coast of BC* [Press release].

Rainforest Solutions Project. (2012). *Take it taller: Great Bear Rainforest overview*.
### Appendix III: The percentage of papers that mentioned an EBM principle by year

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Biophysical properties principles are in pink.
Human wellbeing principles are in red.
Incorporating knowledge principles are in yellow.
Planning and decision-making principles are in green.
Scale and boundaries principles are in light blue.
Socioecological systems concepts are in dark blue.
Appendix IV: The percentage of EBM concepts mentioned in the grey literature by different groups

<table>
<thead>
<tr>
<th>Percentage of Biophysical Properties mentioned</th>
<th>Average percent of Biophysical Properties mentioned</th>
<th>Percentage of Human Wellbeing aspects mentioned</th>
<th>Average percent of Human Wellbeing aspects mentioned</th>
<th>Percentage of Incorporating Knowledge aspects mentioned</th>
<th>Average percent of Incorporating Knowledge aspects mentioned</th>
<th>Percentage of Planning and Decision-making aspects mentioned</th>
<th>Average percent of Planning and Decision-making aspects mentioned</th>
<th>Percentage of Scale and Boundaries aspects mentioned</th>
<th>Average percent of Scale and Boundaries aspects mentioned</th>
<th>Percentage of Sociological Systems Concepts mentioned</th>
<th>Average percent of Sociological Systems Concepts mentioned</th>
<th>Percent of EBM concepts mentioned</th>
<th>Average percent of EBM concepts mentioned by sector</th>
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<tbody>
<tr>
<td>Coast Forest Conservation Initiative</td>
<td>Rainforest Solutions Project/ENUGS</td>
<td>Joint Solutions Project</td>
<td>Coast Information Team</td>
<td>BC Provincial Government</td>
<td>First Nations</td>
<td>Miscellanen</td>
<td>Percent of papers that mention EBM concept</td>
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