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Assessing integration in resource and environmental management in the Southwest Yukon

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Assessing Integration in Resource and Environmental Management in the Southwest Yukon

By

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Abstract

This thesis investigates the theory and practice of integration in resource and environmental management. Research on integration is growing as a result of the escalating demands placed on resources, an increase in the quality and quantity of information available concerning the environment, and the increased involvement and coordination of partners and participants in resource and environmental decision-making. Focus is placed on several resource and environmental management processes in the Southwest Yukon, including wildlife management, protected areas management, forest management and environmental assessment. A case study approach is utilized to examine the perception and practical application of integration in these processes, and to guide the collection of relevant qualitative evidence through documentation and open-ended interviews. A conceptual framework built around the existing integration literature has shaped and directed the analysis of this study. The conceptual framework identifies opportunities for and practical applications of integration. However, experience from the Southwest Yukon suggests that the current definition of integration requires refinement. Factors affecting the successful implementation of integration, including communication, politics, time and capacity, are also discussed.

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List of Abbreviations

AIWMP   Aishihik Integrated Wildlife Management Plan
AMMP   Alsek Moose Management Plan
ARRC   Alsek Renewable Resource Council
CAFN   Champagne and Aishihik First Nations
CEAA   Canadian Environmental Assessment Act
CYFN   Council of Yukon First Nations
DAP   Development Assessment Process
DEMR   Department of Energy, Mines and Resources
DOE   Department of Environment
GIS   Geographic Information Systems
GKLUP   Greater Kluane Land Use Plan
IREM   Integrated Resource and Environmental Management
IRM   Integrated Resource Management
IRMIS   Integrated Resource Management Implementation Strategy
KFN   Kluane First Nation
KNP&R   Kluane National Park and Reserve
KNPMB   Kluane National Park Management Board
LOU   Letter of Understanding
MOU   Memorandum of Understanding
NGO   Non-Governmental Organization
REM   Resource and Environmental Management
RRC   Renewable Resource Council
SFMP   Strategic Forest Management Plan
TOR   Terms of Reference
TT   Traditional Territory
UFA   Umbrella Final Agreement
WRFN   White River First Nation
YCS   Yukon Conservation Society
YEAA   Yukon Environmental Assessment Act
YESAA   Yukon Environmental and Socio-economic Assessment Act
YESAB   Yukon Environmental and Socio-economic Assessment Board
YFWMB   Yukon Fish and Wildlife Management Board
YPAS   Yukon Protected Areas Strategy
YTG   Yukon Territorial Government

1 Introduction

With the increasing demands being placed on the environment from both resource development and environmental conservation, management approaches must change. Resource and environmental management (REM) approaches must respond to: a growing interest in sustainability, which attempts to maintain the resource base for economic, social and environmental interests; an increase in the quantity and quality of information available; and the expansion of actors involved in decision-making. An integrated approach is one way of responding to these changes while continuing to provide efficient and effective REM.

An integrated approach has been recognized as an appropriate technique for many REM situations. For example, at the international level, Agenda 21 suggests that an integrated approach has the potential "to minimize conflicts, make the most efficient trade-offs, and to link social and economic development with environmental protection and enhancement, thus helping to achieve the objectives of sustainable development" (United Nations Division for Sustainable Development 1992, 10.1). Throughout Canada, a number of integrated initiatives have been implemented. Lang (1986) compiled papers from several authors to provide a comprehensive overview of integration from various Canadian regions. This compilation attempts to expand the theoretical understanding and practical application of integration, and address the lack of a concise definition and method for implementation.

Since Lang (1986), integration has continued to be viewed as lacking clear guidelines for application (Bellamy et al. 1999; Eggenberger and do Rosário Partidário 2000; Grinlinton 1992). Recognizing this absence, it is necessary to explore the current

literature, as well as to employ an in-depth case study in order to contribute to a greater understanding of the components of integration and to determine ways of improving implementation. An integrated approach may be overlooked by resource and environmental decision makers, industry and the public if it cannot be conceptualized in a clear and concise manner (Cairns 1991).

1.1 Research Goal and Objectives

The main goal of this research is to explore the theory and practice of integration in REM through a case study of the Southwest Yukon. To assist in fulfilling this goal specific objectives have been developed. Objectives are as follows:

1. What are the REM processes in the Southwest Yukon?

2. How has integration been defined in these REM processes?

3. How has integration been pursued in these REM processes?

4. What lessons can be identified for the theory and practice of integration in REM?

1.2 Methods

To achieve this study's objectives it is important to have strong methods for data collection and analysis. This research is based on a case study approach influenced by Yin (2003). In the integration literature case studies are limited and are mainly structured around watersheds (Ewert et al. 2004), leaving far fewer non-watershed examples. This research supplies an additional case study to the broader body of research. This study explores integration from a policy perspective on a broad scale and does not address one particular initiative or program in detail, but rather a number of initiatives in a single region.

A case study approach supports the utilization of documentation and open-ended interviews as methods for data collection (Yin 2003). Documents collected and interviews conducted were wide-ranging and focused on several REM processes including environmental assessment, wildlife management, protected areas management and forest management. Document types included government news releases, meeting minutes, newsletters, management plans, policies and legislation at territorial, regional and sub-regional scales. Interviewees were chosen from the First Nation, Federal and Territorial Governments, as well as the Yukon Land Use Planning Council, the Alsek Renewable Resource Council (ARRC), the Yukon Fish and Wildlife Management Board (YFWMB), the Yukon Environmental and Socio-economic Assessment Board (YESAB) and the Yukon Conservation Society (YCS). A conceptual framework was developed to improve the clarity for the concept of integration, as well as to guide the collection and analysis of data. Specific elements outlined in the conceptual framework acted as criteria for the evaluation of data.

1.3   Study Site

The Southwest Yukon (Figure 1) is a region that is ecologically, culturally and economically productive. Extraordinary features are found in this region, including Canada's highest mountain, Mount Logan, as well as diverse wildlife and vegetation. Culturally significant components of this region include the history and traditions of local Aboriginal peoples (Champagne and Aishihik, White River and Kluane First Nations). Furthermore, economic opportunities exist in several sectors such as resource development and tourism. This diversity creates a matrix of land use activities including both resource consumption and resource protection.

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Figure 1. Map of Southwest Yukon

Study Site: Southwest Yukon

Source: Government of Yukon (2005c) and DMTI Spatial (2002)
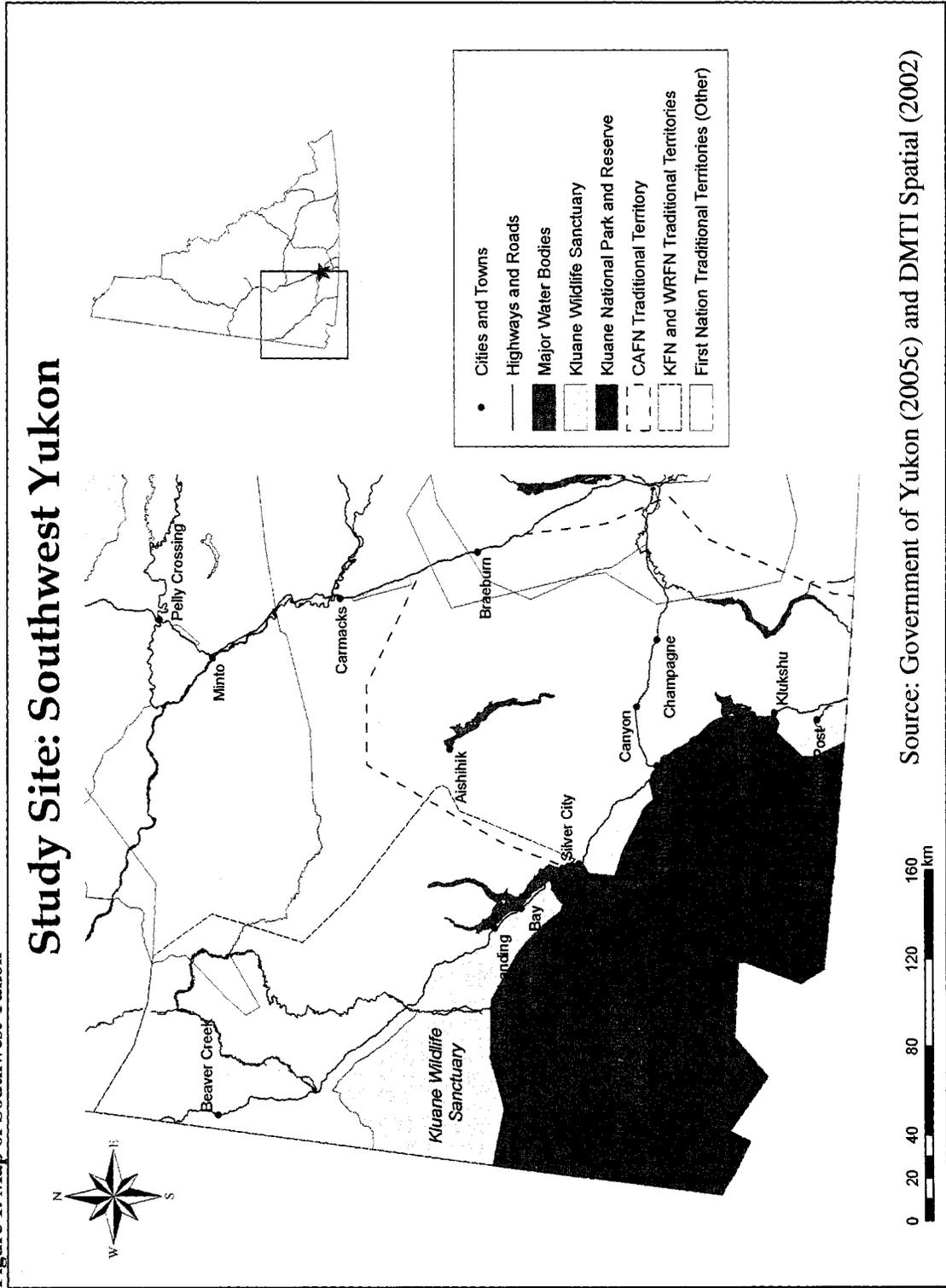
Over the years the Yukon has experienced increasing demands on the environment and resources requiring an innovative approach to REM. Towards 1970 the largely unregulated management in Northern regions became increasingly unacceptable (Faulkner 1986). Significant changes have also occurred within the last 15 years that are redefining the way in which decisions are made. These include the settlement of comprehensive lands claims by many of the Yukon First Nations, as well as the devolution of resource and land management to the Territorial Government. The Umbrella Final Agreement (UFA) was signed in 1993 and has provided a framework for the settlement of individual First Nation land claims agreement in the Yukon. This process is reshaping the way REM is conducted in the Yukon. For example, First Nations now govern settlement lands and play a significant role in the decisions made on non-settlement lands. Cooperative decision-making between the First Nations and other governing bodies exists through management boards, for example the Yukon Fish and Wildlife Management Board (YFWMB) and renewable resource councils (RRCs), which were established in response to the land claims agreement. Devolution has also been influential, as the Territorial Government now has authority over the majority of land and resource management responsibilities that were once under Federal jurisdiction. Devolution may also influence changes to the Territorial Government's structure, policies, legislation and regulations.

These conditions, and previous integrated REM efforts, make the Southwest Yukon ideal for the examination of integration. For example, the Greater Kluane Land Use Plan (GKLUP) (Yukon Land Use Planning Council 1991) was based on the Yukon Land Use Planning Agreement of 1987 (Kuhn and Duerden 1996). Since the Yukon Land

Use Planning Agreement was guided by the Northern Land Use Planning Agreement, the development of any subsequent plans was meant to be integrated rather than fragmented (Kuhn and Duerden 1996). The Southwest Yukon, even after the development of the GKLUP, remains an area of interest and priority. REM processes have all evolved over the years and currently require an assessment of their use of integration in management planning and decision-making.

1.4 Integration Overview

Creating an unambiguous and well-defined meaning for integration is not a trivial task. One difficulty is making a distinction between similar terminologies. For example, Downs et al. (1991) discuss how integrated, comprehensive, holistic and ecosystem are sometimes used to describe the same idea, yet there are minor distinctions between them. Another difficulty is that the definitions of integration that exist in the literature are varied (e.g. Cairns 1991; Ewert et al. 2004; Hooper 1997; Mitchell 1986). Although having several definitions provides diversity to integration, similarities can also be identified. Similarities that emerged within existing definitions include the coordination and cooperation of various partners and participants; balancing the values, concerns and ideas of those involved; and sustainability of economic, environmental, and social demands. However, there is much more to integration than can be compressed into a single definition.

Several authors provide frameworks outlining the characteristics they argue to be included in an integrated approach. For example, Born and Sonzogni (1995) provide an interpretation which outlines very broad themes of an integrated approach, including inclusive, interconnective, reductive and interactive. Mitchell and Pigram (1989)

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developed a framework incorporating elements consisting of context, legitimization, functions, processes and mechanisms, as well as organizational culture and participant attitudes. Morrison et al. (2004) provide a detailed interpretation offering very specific types of integration such as strategic, facilitative, participatory, functional, methodological, structural and substantive. The works outlined here are only a sample of the contributions made in the literature.

With numerous interpretations of the structure of an integrated approach some organization was required. Through an examination of the existing integration literature broad and specific components have been identified. More widely applicable categories consist of inclusive, interconnective and interactive, where specific elements include context and goals, scale and boundaries, legislation and policy, partners and participants, information and knowledge, as well as methodology and technology.

Context refers to the environmental, economic and social conditions of a region; and contains both a spatial and temporal dimension (Hooper et al. 1999). Goals and objectives are important elements of any REM initiative, not only integrated ones. Goals can provide guidance to those involved in management and act as evaluative criteria in project assessment (Slocombe 1998a). Delineating the scale and boundaries are critical in determining the scope of the initiative (Born and Sonzogni 1995) and identifying the partners and participants that will be directly involved in management (Blomquist and Schlager 2005). Legislation and policy can provide legitimacy to an integrated approach (Mitchell and Pigram 1989), however, this element of an integrated approach also addresses the need to integrate and examine the goals and objectives of legislation and policy at varying scales (Eggenberger and do Rosário Partidário 2000). An important

component of integration is the inclusion of various partners and participants. However, the level of their involvement can vary. For example, Margerum (1999a) outlines the differences between coordination and cooperation. In addition, Danby and Slocombe (2002) discuss existing methods for communication. Information and knowledge can address many economic, social and environmental aspects, can exist in diverse formats, and can be derived from varied sources (Slocombe 2001). Finally methodology and technology refer to the consistency of the data and concepts being utilized (Eggenberger and do Rosário Partidário 2000) and the tools employed for organizing information.

This overview provides a cross section of what integration involves and helps to identify opportunities for greater analysis and application of the concept throughout the normative, strategic and operational levels of REM. The remainder of the thesis provides greater depth to the definition and application of integration in the literature and in the Southwest Yukon.

1.5 Thesis Outline

Chapter two provides a brief history of the development of the integration and some of its practical applications in Canada. The chapter highlights the existing REM literature addressing integration, and describes its relationship with sustainability, cooperative and coordinative management, and knowledge bases. Several definitions of integration are presented alongside broad themes and specific elements that are associated with the concept.

Chapter three justifies the use of case study research and its application in the Southwest Yukon and subsequent REM processes. Detailed methods employed to collect and analyze the data are described, and a conceptual framework designed from the integration literature and field research is presented.

Chapter four provides a contextual overview of the Southwest Yukon's biophysical, social and economic characteristics. This is followed by an overview of the institutional structure and relationships that exist in the region. A brief history of the REM processes of this study concludes the chapter.

Chapter five summarizes the results of this study and provides a detailed discussion regarding a revised definition of integration, how integration is pursued in the Southwest Yukon, and the challenges managers face throughout implementation. This chapter concludes with a discussion around the lessons that were learned from this study. These lessons provide useful insights for other jurisdictions facing similar management situations.

Chapter six re-examines the research goal and objectives of this study and draws conclusions for this research. Recommendations on how to improve upon the definition and implementation of integration in the Southwest Yukon are provided. Suggestions are also given concerning the focus of future research initiatives.

2   The Meaning of Integration and Its Presence in the Literature

This chapter presents a thorough overview of the existing literature on integration in REM, beginning with a brief overview of the historical development of the concept and followed by more specific examples within the Canadian context. Next, several definitions of integration drawn out of the literature are presented and several similarities and differences are noted throughout the remainder of the chapter. A summary is then provided regarding the broad themes and specific elements of integration. Finally, the chapter concludes with a summary of both the strengths and weaknesses of integrated approaches.

The literature recognizes a number of management initiatives that promote the concept of integration including Integrated Resource Management (IRM) (Grinlinton 1992), Integrated Environmental Management (Born and Sonzogni 1995; Cairns 1991; Margerum 1999c), Integrated Catchment Management (Johnson et al. 1996; Mitchell and Hollick 1993; Mitchell and Pigram 1989), Ecosystem-Based Management (Slocombe 1993, 1998a, b) and Ecosystem Management (Grumbine 1994, 1997). This array of approaches will be drawn upon in this study to advance the concept of integration. The term utilized in this study to address the variety of approaches is Integrated Resource and Environmental Management (IREM). IREM is used in order to remain consistent and to avoid confusion when referring to various management approaches. This terminology has been utilized elsewhere by Ewert et al. (2004); Harriman and Baker (2003); and Hooper et al. (1999).

2.1   Historical and Current Developments

Integration is not a recent concept in REM. Ewert et al. (2004) provide an overview of the modern periods in IREM including conservation enlightenment, recession and uncertainty, the Second World War, national reconstruction, and modern environmental epochs. IREM development began during the late Nineteenth and early Twentieth Centuries with the presence of megaprojects and an approach to resource management that promoted the multiple use of a single resource (Ewert et al. 2004). During the mid-1900s IREM was hindered as resources were utilized for economic revitalization, as well as events including World War II where the focus was placed on national security rather than conservation efforts. However, with the growth of the environmental movement towards the end of the Twentieth Century integration regained its presence in REM (Ewert et al. 2004, 25). Furthermore, Eggenberger and do Rosário Partidário (2000, 205) outline the role integration played in economic strategies after the war, in "the emergence of the systemic planning approaches" (1960s) and in environmental assessment (1970s). Through these examples, it is shown that the concept of integration has a relatively long-standing history in REM. Academic research on integration is expanding, and within the last 15 years studies have been completed in varying geographical locations, such as, New Zealand (Anker 2002), Australia (Bellamy and Johnson 2000; Hooper 1997; Margerum 1999a; Morrison et al. 2004), the United States (Born and Sonzogni 1995; Jakobsen and McLaughlin 2004; Margerum and Born 1995) and Canada (Hooper et al. 1999; MacKenzie 1997).

The beginning of integration in Canada is difficult to pinpoint, yet prominent examples do exist. An early example was the establishment of the Commission of

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Conservation in the early 1900s, which acted as an outlet for examining concepts such as coordination and integration in REM (Mitchell 1986). Specific examples of integrated approaches in Canada began to appear during the late 1970s and early 1980s (e.g. Lang 1986). For example, during the 1970s the Province of Alberta developed *A Policy for Resource Management of the Eastern Slopes*, which recognized the need for an integrated approach to achieve successful REM (Alberta Forestry Lands and Wildlife 1991). A more recent example is Land and Resource Management Planning in British Columbia, which is an integrated approach to REM at the sub-regional scale (Integrated Resource Planning Committee 1993). These experiences are only a few of the many examples where integration has influenced Canadian initiatives.

Integration as a REM concept has changed and evolved over time, and has become more influential. The recent growth of integration as a REM concept can be attributed to a number of factors. Cairns (1991, 7) outlines that "natural resources are no longer capable of satisfying every perceived need". Resources must now consider and integrate a plethora of social, economic and environmental demands, therefore further complicating management. This complexity is amplified when taking into account the various stakeholders that require consultation and the information that must be collected and assessed. Margerum (1997, 459) states that "the movement toward integration has emerged from changes in scientific information, the recognition of a wider array of issues and stakeholders, and the increasing complexity of environmental issues". Current conditions require a modern approach to REM while avoiding the elements of conventional initiatives that are no longer desirable. Conventional management initiatives

have been described as "reactive, disjointed, and for narrow or limited purposes" (Born and Sonzogni 1995, 168).

There is a strong argument for the necessity of using IREM. On the other hand Hooper et al. (1999) argue that not all circumstances require or desire integrated management. First, not all REM problems are complex and require the involvement of various organizations (Hooper et al. 1999). Second, there is always some degree of cost in the process of integration (Hooper et al. 1999). For example, communication amongst participants requires both time and financial responsibilities (Born and Sonzogni 1995). Third, groups may feel that integration is a threat to their authority, which in turn creates opposition to the idea (Hooper et al. 1999). An additional example from Cairns (1991), is that the opposition to integration may be a result of employees' fear of termination, for example, one's job may be phased out if it is seen to overlap with another employee from a different department. These disadvantages are only a few of the arguments that can be made against integration.

In the literature it appears that IREM is being considered an "emerging paradigm" (Bellamy and Johnson 2000, 267; Bellamy et al. 1999, 337; Margerum 1997, 459; Margerum and Hooper 2001, 2). However, integration should not be viewed as a panacea (Margerum 1999c; Mitchell 1990b) seeing that its development as a REM concept was still in question as recently as 2004. Morrison et al. (2004, 244) state that there is "insufficient theory developed to inform policy" and "practice is ahead of theory and evaluation". This statement suggests that the concept of integration and its role in REM are still not fully understood and require clearer guidelines to be practical. In order to

improve the clarity of integration as a concept, a review of the literature has been conducted.

2.2 Dimensions of Integration

Defining integration is a challenging task given that the meaning can be interpreted in several different ways, and specific attention should be given to clarity. One integrated initiative, the ecosystem approach, may be viewed as "somewhat vague and abstract" (Armitage 1995, 470) and "too broadly applicable" (Slocombe 1993, 297). Integrated Catchment Management was also identified as "a vague and ambiguous concept" in a case study of Western Australia (Mitchell and Hollick 1993, 737). If no agreement can be made on the meaning of IREM, it is likely to suffer similar criticisms. Eggenberger and do Rosário Partidário (2000, 204) provide an excellent example where even very minor events can give meaning to integration:

> "Integration is something that is done all the time, or that is argued as being done! Whenever there are two professionals with different backgrounds looking at the same problem with similar objectives they are integrating. Whenever there are two different topics that need to be tackled together, there is integration".

If integration does not have a consistent definition, it will not provide strong enough direction for implementation. In contrast, if the definition is too specific it may not be useful or flexible enough for resource managers to apply to multiple situations.

Offering several definitions drawn out of the academic literature and practical documents provides a broad understanding of the way integration approaches are perceived in REM. The diversity of definitions includes:

> "...the usual idea associated with integrated resource management is the sharing and coordination of the values and inputs of a broad range of agencies, publics and other interests when conceiving, designing and implementing policies, programs or projects" (Mitchell 1986, 13);

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"Integrated environmental management (IEM) may be defined as proactive or preventive measures that maintain the environment in good condition for a variety of long-range sustainable uses" (Cairns 1991, 5);

"IRM is defined as the co-ordinated management of land and water resources within a region, with the objectives of controlling and/or conserving the water resource, ensuring biodiversity of fauna and flora resources, minimizing land and water degradation, and achieving specified and agreed land and water management and social objectives" (Hooper 1997, 57);

"...a management process and philosophy that takes into account the values of multiple resources of an area, considers the linkages between these resources and other organisms, and views these resources within a long-term, sustainable perspective" (Ewert et al. 2004, 262);

"A resource management philosophy that attempts to coordinate a broad range of values by finding interconnections among values, common goals, and key elements to focus on. IRM is characterized by strategies to blend and integrate uses, by attempts to use resources to meet economic, social, and ecological aims, and by the use of participatory decision making" (Yukon Land Use Planning Council 2001, 6);

"...a way of using and managing the environment and natural resources—to achieve sustainable development. Using an IRM approach means that environmental, social and economic issues are considered, while finding ways for all uses to exist together with less conflict ... IRM is based on: cooperation, communication, coordination, consideration of all values, and involvement of those potentially affected before action" (Alberta Environment 2002, 3).

These definitions only begin to describe what it means to be integrated. Beyond these definitions the literature provides a detailed discussion of the critical elements that form an integrated approach, as well as how it can be achieved in practice. For example, Born and Sonzogni (1995), provide a conceptual framework describing the elements that they argue constitute IREM including comprehensive/inclusive, interconnective, strategic/reductive and interactive/coordinated (Figure 2a). Other authors that have adopted this framework describe the first three elements as "substantive", and the final element as "procedural" (Ewert et al. 2004, 180; Margerum 1997, 468; Margerum and Born 1995, 375).

Figure 2. Existing Conceptual Frameworks for Integration

Comprehensive/
Inclusive

Interconnective

WHAT

Strategic/
Reductive

Interactive/
Coordinative

HOW?
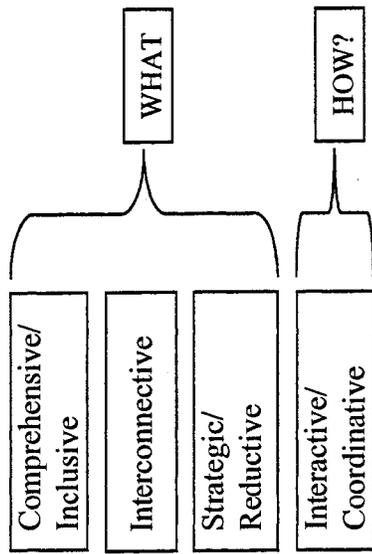
(a) Source: Born and Sonzogni (1995)

STRATEGIC
REDUCTIVE

interactive
coordinative

COMPREHENSIVE
INCLUSIVE

interactive
coordinative

IREM

HOLISTIC

interactive
coordinative

interactive
coordinative

INTERCONNECTIVE

(b) Source: Ewert et al. (2004)

CONTEXT

LEGITIMIZATION

FUNCTIONS

CULTURE AND
ATTITUDES

PROCESSES AND
MECHANISMS

STRUCTURES
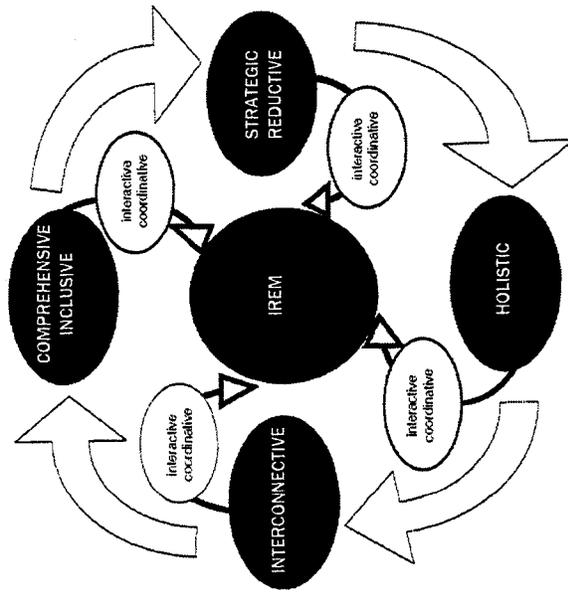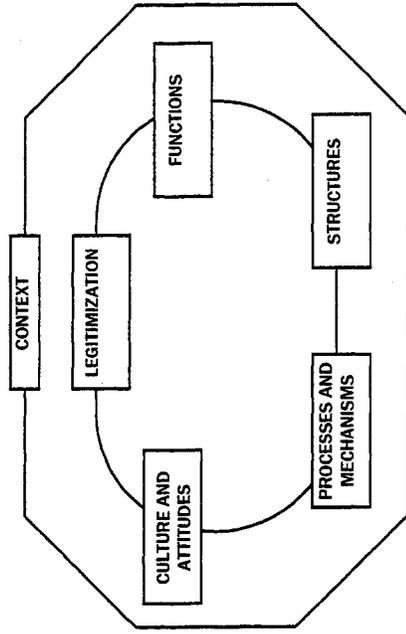
(c) Source: Adapted from Mitchell and Pigram (1989)

FACILITATIVE

PARTICIPATORY

STRATEGIC

INTEGRATION

FUNCTIONAL

SUBSTANTIVE

STRUCTURAL

METHOD-
OLOGICAL
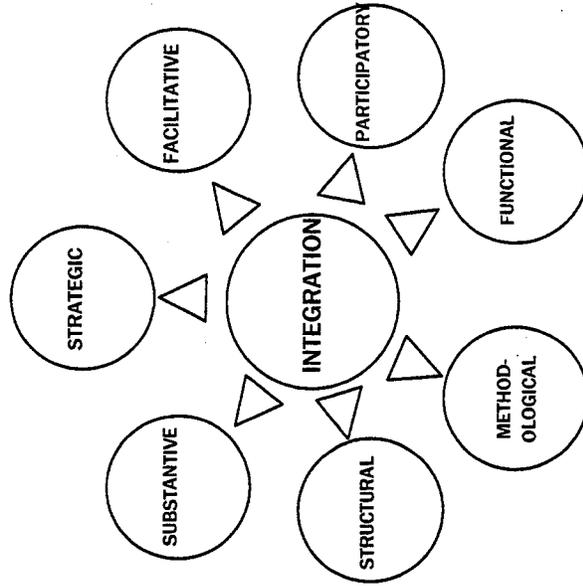
(d) Source: Adapted from Morrison et al. (2004)

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The first element described in this framework is comprehensive/inclusive, which involves the initial identification of all significant aspects related to the management area (Born and Sonzogni 1995). Ewert et al. (2004, 181) support this element and describe inclusive as "[incorporating] a wide range of views, adopting multiple perspectives, and a breadth of scope to include a depth of both social and biophysical functions in the planning process". The comprehensive/inclusive element is not limited to the academic literature. Practical IREM definitions (e.g. Alberta Environment 2002; Yukon Land Use Planning Council 2001) have also noted that the goals and concerns identified in the management initiative should be inclusive of not only the environment, but also social and economic areas.

The second element in the Born and Sonzogni (1995) framework is interconnective. The interconnective element must acknowledge the relationships within and between environmental and social systems (Ewert et al. 2004), while giving consideration to the multitude of competing uses that are identified (Born and Sonzogni 1995). One IREM definition (Yukon Land Use Planning Council 2001) supports the need to identify linkages between resource values and goals. The selection of system elements and interconnections to be considered should emerge from discussions with participants based on the information they possess (Hooper et al. 1999), as well as "…their perceptions, judgments, and understanding of the context and goals for management" (Born and Sonzogni 1995, 170).

Strategic/Reductive is the third element in the Born and Sonzogni (1995) framework and they argue that an integrated approach should first address a wide-range of issues and interconnections before partners and participants reduce them to only those

that are most relevant to management. On the other hand, Mitchell (1990a) describes comprehensive and integrated as two separate approaches, where a comprehensive approach would include all issues and interconnections throughout the process and an integrated perspective would focus only on those aspects that are most relevant. However, both perspectives could be combined, utilizing the comprehensive perspective during the planning stages of management and the integrated perspective during implementation (Mitchell 2005). Regardless of the way the process is described, maintaining all issues and interconnections throughout the process may not be very practical given the timelines and resources necessary for analysis (Hooper et al. 1999).

The fourth and final element in the Born and Sonzogni (1995) framework is interactive. Interactive is different from the other components in that it describes how IREM is implemented, rather than describing what it is (Born and Sonzogni 1995). The interactive component addresses the need for the participation and coordination of management agencies, stakeholders and the public (Margerum 1997; Margerum and Born 2000), and addresses a need for information exchange (Born and Sonzogni 1995; Margerum and Born 2000).

The Born and Sonzogni (1995) framework outlines broader themes that have emerged from various integrated approaches in a linear manner. Ewert et al. (2004) modified this framework (Figure 2b) by adding holistic as an element and provide a more cyclical structure for IREM through the use of arrows. Other frameworks have been developed, for example Mitchell and Pigram (1989) and Morrison et al. (2004, 249). The former outlines influential elements that assist in the identification of opportunities for greater integration (Figure 2c), where the latter describes specific "dimensions of

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integration" (Figure 2d). These frameworks contribute to more specific elements of IREM, which include context and goals, scale and boundaries, legislation and policy, partners and participants, information and knowledge, and finally methodology and technology. These elements provide an overview of the different ways integration can be perceived and pursued in REM.

2.2.1 Context and Goals

It is important to pay close attention to the context of each location where an integrated approach is adopted (Hooper et al. 1999). Places may have varied environmental, social, political and economic contexts, which can influence management initiatives and decision-making. For instance, a changing political climate due to "short-term election horizons" can be an obstacle for IREM (Ewert et al. 2004, 189). Furthermore, if elected officials are constantly changing, they may not continue with the same programs supported by past administrations.

Context is not restricted to only those elements describing place. Hooper et al. (1999) also indicate the importance of time, referring to the length of time an integrated approach needs to be implemented or to observe results. Walther (1987) found that implementing IREM successfully is directly related to the intricate history of that particular location. IREM initiatives may not be possible if choices about utilizing the resources were determined decades earlier (Walther 1987). Both the temporal and spatial dimensions to IREM can have equally significant implications for management. Context is important in determining what role, if any, an integrated approach will play in REM.

Context is composed of a number of elements, including environmental conditions, economic position, present legislative, government and financial agreements,

as well as "prevailing ideologies" (Mitchell 1990a, 8). Mitchell (1990a) suggests that "prevailing ideologies need to be identified, as these will influence the choice of goals, objectives and strategies". Goals, although not included in the Born and Sonzogni (1995) framework, have been included in similar reviews by Margerum (1997) and Margerum and Born (1995). Both of these reviews discuss the importance of common goals. Common goals serve as a way to develop "a shared understanding and ... common direction for participants" (Margerum 1997, 467), as well as "a way to reduce the effects of vested self-interest..." (Slocombe 1998a, 490). Finally, goals and objectives are required to act as evaluative criteria for an initiative (Slocombe 1998a). If the goals and objectives are fulfilled then the initiative may be deemed a success. However, if they are ambiguous and unclear it becomes difficult to determine if they have been achieved (Bellamy et al. 1999). Therefore, the aims that are developed should be clear. They should also be developed through communication among participants involved and reflect their values, concerns and ideas. Sustainability is one broad goal that was apparent after comparing the IREM definitions presented earlier.

2.2.1.1 Sustainability

"Sustainable development", "sustainable uses" and "long term, sustainable perspective" are terms that appear among the IREM definitions. Due to the integrative nature of sustainability, among other terms, it is increasingly being sought after and used to direct REM initiatives (Slocombe 1998a). This departure from very focused goals to more integrative ones has to be viewed as a beneficial step for management initiatives (Slocombe 1998a). On the other hand, the challenges that materialize by including sustainability in IREM cannot be ignored. For instance, the meaning of sustainability is

often debated and could become all the more obscure when related to a management approach that itself lacks clear meaning. The meaning of sustainability has been extensively addressed elsewhere (e.g. Brown et al. 1987; Faber et al. 2005; Mebratu 1998; Redclift 1992; Robinson et al. 1990; Shearman 1990; Slocombe and Van Bers 1991). The scope of this research will only briefly address the relationship between sustainability and IREM.

Sustainability is a complementary goal for IREM to strive for. Sustainability, like IREM, attempts to bring together both preservation and utilization of the environment and resources (Gardner 1989) and provide a balance between these uses. The latter connection was drawn from the following definition, "Sustainability is about living and working in ways that meet and balance existing environmental, economic and social needs without compromising the well being of future generations" (Alberta Environment 2002, 4). This definition also implies that long-term management is necessary to ensure resources will suffice for future generations. Managing for both sustainability and integration requires time. Fricker (1998) explains that sustainability must be monitored over a long period of time. The same can be said about IREM where crucial results of management are not immediately apparent (Bellamy et al. 1999). Several connections have been identified by comparing sustainability to IREM, which serve to support sustainability as a compatible goal for integrated initiatives.

In addition to these connections, Gardner (1989) provides an in-depth discussion of both substantive and process principles of sustainability (Table 1); and how these principles are addressed by an assortment of management approaches including Integrated Resource Management (IRM). Principles that define the goals and values of

sustainability are described as substantive, whereas process principles describe how the

search for sustainability will be structured (Gardner 1989). Given that IRM is capable of

broadly addressing both types of these principles, it has immense potential for sustainable

management (Gardner 1989).

Table 1. Sustainable Development Principles

Substantive Principles	Process Principles:
- The satisfaction of human needs - The maintenance of ecological integrity - The achievement of equity and social justice - Provision for self-determination and cultural diversity	- Goal seeking - System-oriented - Adaptive - Interactive

Source: Adapted from Gardner (1989)

2.2.2 Scale and Boundaries

Determining the scope of the management initiative cannot be done without

addressing "issues of spatial scale" and boundary definition (Born and Sonzogni 1995,

170). A management area should adequately represent the issues identified during the

Comprehensive stage of IREM (Born and Sonzogni 1995). However, choosing an

appropriate management area can be difficult since a consensus on the boundaries may

not be reached by all parties involved (Born and Sonzogni 1995) or when boundaries can

influence the involvement of partners and participants in a management initiative.

Blomquist and Schlager (2005) argue that the partners and participants within the

management area may have more direct involvement and consideration of their values,

concerns and ideas than others beyond the area's borders.

A variety of characteristics have been developed by Slocombe (1998b) which

assist in the delineation of useful management areas. First, a "management unit must be

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meaningful... it should reflect distinguishing characteristics of a region that have significance to people within and outside the region" (e.g. comprehensive land claims) (Slocombe 1998b, 33). Second, management areas require flexibility taking into account that not all boundary choices are suitable for all regions (Slocombe 1998b). Although the watershed is frequently utilized as the management area for integrated initiatives associated with water (Born and Sonzogni 1995), and catchments have been argued to be complementary settings for integrated approaches, there are alternatives (Mitchell and Pigram 1989). Other boundaries may include ecoregions or culturally significant lands. These boundaries may be more appropriate for some regions. Third, existing boundaries can be utilized (protected areas are often reasonable examples of this), but managers should not be afraid to think outside the box and propose changes (Slocombe 1998b). Choosing existing political or administrative boundaries may not be appropriate, as they do not always represent widespread ecological systems. Fourth, whichever management area is chosen requires administrative recognition or it may be disregarded (Slocombe 1998b). Finally, continued interest in "lower units" is required from upper management (Slocombe 1998b, 34). This can be achieved through active communication with upper management or committees in which they are represented (Slocombe 1998b).

2.2.3 Legislation and Policy

The discussion of legislation and policy is limited in the integration literature, but still has very significant implications for integrated approaches. Legislation and policy, alongside political commitment, are means identified by Mitchell (1990a) that provide legitimacy to integrated initiatives. Morrison et al. (2004) referred to this type of political commitment as strategic integration. Without validation, integration may be less

successful (Mitchell 1990a). Success of an initiative without legislative support can become reliant on the partners and participants involved, as was found by Johnson et al. (1996) in a study of Integrated Catchment Management in Queensland. Another limitation, identified in an examination of IRM in Alberta, is that integrated strategies without adequate legal support are almost always vulnerable to change (Walther 1987). These examples illustrate that there is a need for legislative, policy or political commitment.

Supportive legislation and policy was shown to assist an integrated program in the Black Earth Creek Watershed progress from theory to practice, as well as increasing the application of integrated approaches in Queensland and New South Wales (Margerum 1999c). Furthermore, Walther (1987, 445) concludes that "IRM implementation should be based on a clear political or legal commitment". In this way, legislation and policy are seen as aiding integrated initiatives from establishment through implementation.

Even though legitimacy has been identified as an important factor of integrated initiatives, it can be restrictive. If legislation and policy concentrate on one particular concern or goal, integration can become limited or hindered (Margerum 1999c). If legislation and policy address resources separately, competing and conflicting mandates and goals could emerge. Forests, water and wildlife are examples of resources frequently managed by individual departments and mandated under different pieces of legislation (MacKenzie 1997). Integrating strategies and regulations of differing sectors is identified as policy integration by Eggenberger and do Rosário Partidário (2000).

Challenges may also emerge at different administrative or geographic scales, as management plans have different purposes at different scales. For instance, plans

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developed for site specific projects relate more to "on-ground" actions, where the regional plans are essential in providing "context for implementation" (Fallding 2000, 188). Plans and strategies that are developed may not address the goals and objectives of higher or lower level plans for that area. Examining policy and plans for consistency between local level and regional scales should be an objective adopted by an integrated approach.

Legislation has been identified as an excellent opportunity to define participants' goals, objectives, roles and responsibilities, as well as the instruments available for resolving conflicts (Mitchell 1990a). Less formal ways of identifying these elements are available including memorandum of understanding (MOU) or a letter of understanding (LOU) and terms of reference (TOR). A MOU can "define and formalize the roles and responsibilities of the parties based on co-operative and equal partnerships", as was the case for Integrated Catchment Management implementation in the Johnstone River (Johnson et al. 1996, 312). TOR can identify the participants (Alberta Forestry Lands and Wildlife 1991); their roles and responsibilities (Alberta Environment 2001); "what concerns, issues and opportunities will be addressed and what will be achieved; the planning area boundaries; and how the plan will be developed" (Alberta Forestry Lands and Wildlife 1991, 12). Whether the agreement is formal or informal, a situation is created where greater integration may be possible.

2.2.3.1 Streamline Procedures

One of the possible outcomes of an integrated approach is a more efficient and effective licensing or approval process. Streamlining the licensing process has been described in the literature under several different names. Anker (2002, 201) utilizes the

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term "cross-media integration" to describe the unification of individual licensing procedures. Faure (2000, 177) utilizes "internal integration" and Eggenberger and do Rosário Partidário (2000) include the streamlining of licensing procedures under their description of procedural integration.

In many cases, the licensing process for each resource, including but not limited to forests, fish and water, is administered by individual branches of the government (Grinlinton 1992). Some resource and environmental uses may require several permits. Consequently, streamlining licensing and consent procedures will result in clear benefits to both decision makers and applicants. Decision makers will have the ability to assess all the potential impacts the proposed action will have on the environment and other resources (Faure 2000). Consents and licensing that are not streamlined may not account for cumulative effects of the activities being approved. It could be argued that the environmental assessment process reviews all the potential impacts of a particular activity. However, "[environmental impact assessment] is usually a separate but parallel process [which] guides the form of consents given and conditions imposed" (Grinlinton 1992, 13).

Benefits to applicants can be seen through having to participate in fewer permitting processes. For instance, New Zealand's *Resource Management Act* allows for a single process when an activity requires several permits under the same issuing agency (Anker 2002). However, bringing together licensing and consent procedures will not always be feasible and changing well-established permitting systems could be challenging. Therefore, when individual consent and licensing procedures are maintained or established, coordination of these processes becomes essential (Faure 2000). For

example, the New Zealand *Resource Management Act* allows for "joint hearings" for permits that are handled by separate issuing agencies (Anker 2002, 204). Joint hearings are just one example of the ways to increase coordination and communication between issuing agencies.

2.2.4 Partners and Participants

Developing partnerships and involving a wide array of participants has been identified as a critical element of an integrated approach and can contribute to the broader themes of IREM. For instance, bringing together a diverse set of partners and participants may assist in the identification of interconnections (Margerum 1997). Partners and participants include, but are not limited to, government agencies, non-governmental organizations (NGOs), industry and the public. An integrated initiative should also involve participants from a number of disciplines, as they can possess various skills and strive to foster associations between diverse administrative bodies (Hooper 1997). Another important reason to include representatives from various disciplines in IREM is that they can provide different points of view (MacKenzie 1997).

Some authors (Eggenberger and do Rosário Partidário 2000; Morrison et al. 2004) refer to the involvement of a broad array of participants as procedural integration. Several procedures are available for the inclusion of values, concerns and ideas of various participants and range from formal to informal. Contact with the public can occur in a number of ways such as written or verbal surveys (Ewert et al. 2004). Communication and information exchange between partners and participants can range from telephone calls to committees (Danby and Slocombe 2002; Mitchell 1990a). Different types of committees, such as a steering committee or technical working group, are useful outlets

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for fostering increased integration (Margerum 1999b), power distribution among stakeholders and reducing "professional bias" (Ewert et al. 2004, 188).

Section 2.5 noted that political commitment is particularly important for successful integration. Although gaining top-level commitment is important, it should not necessarily translate into top-down management. IREM is an approach that moves away from the previous command and control management system towards a more inclusive arrangement. All participants impacted by decisions should be allowed to contribute to them (Alberta Forestry Lands and Wildlife 1991) and their contributions should be meaningful. Hooper et al. (1999, 753-754) suggest that "community-based partners which are only advisory are also very easy to ignore or marginalize".

A bottom-up approach can empower the public through the ability to influence the choices that are made (Wang et al. 2000). An integrated approach should have a hybrid of top-down and bottom-up management. This hybrid is essential to facilitate contributions from both the public and private participants (Mitchell and Pigram 1989), as well as "effective coordination between IREM regimes" (Ewert et al. 2004, 186).

2.2.4.1 Coordination and Cooperation

Coordination has been identified as a unifier of IREM definitions (Hooper et al. 1999) and is considered a "core" aspect of IREM (Bellamy et al. 1999, 349; Margerum and Born 2000, 6). Coordination involves bringing together various partners and participants. REM issues that are not straightforward often require a variety of participants to work together to attain a common purpose (Margerum and Born 2000).

Although clear similarities exist in IREM definitions, there are also some differences. Only one of the IREM definitions includes both coordination and

cooperation (Alberta Environment 2002), as they tend to have separate meanings in the reviewed literature. Margerum (1999a) suggests that while coordination and cooperation both recognize a common goal, the difference exists in how that goal is pursued. Those involved in coordination will make decisions together throughout the entire process, where those involved in cooperation will branch off to pursue the goal separately (Margerum 1999a). When partners and participants implement decisions independently, as with a cooperative approach, it reduces the amount of power that is shared (Margerum 1999a).

Although cooperation and coordination have unique definitions, Morrison et al. (2004, 248) explain that integration consists of "[coordination, cooperation, collaboration] and more". Margerum (1999a, 156) illustrates the differences between cooperation and coordination on a "two-dimensional matrix" (Figure 3), where organizational and operational levels of management are placed on one axis, and the second focuses on the independence and interdependence continuum. This matrix illustrates that there are several ways to implement integration (Margerum 1999a). Margerum (1999a) explains that even though the process is categorized as cooperative administration it may still have coordinated elements. Incorporating both cooperation and coordination creates different degrees of integration that can be achieved, as coordination involves a higher degree of integration, where cooperation involves a lower degree.

Figure 3. Integration Implementation Matrix
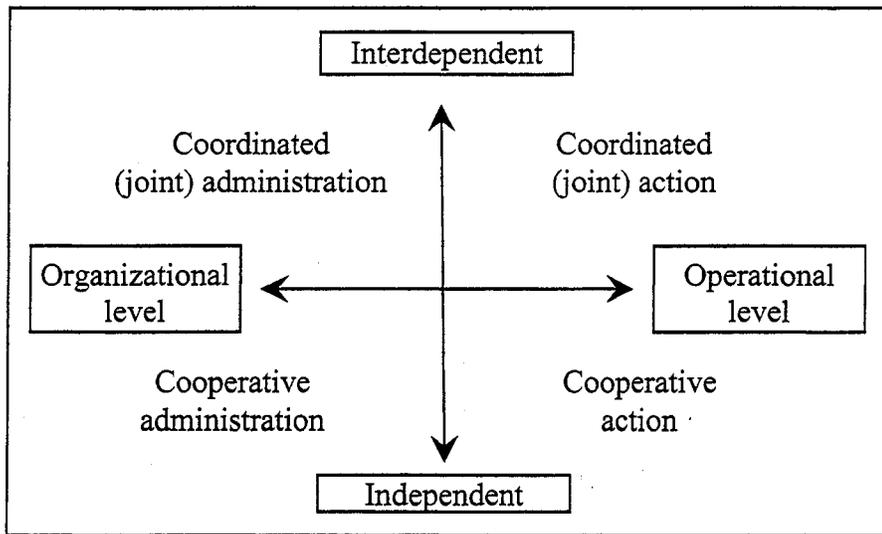
Source: Margerum (1999a)

Another continuum is presented by Hooper et al. (1999) where a cooperative

approach for achieving integration is placed in the middle of a range of options. The

cooperative approach exists between a voluntary approach and a coercive approach to

integration, which are described below:

> "At one extreme, which may be labelled as a voluntary or minimalist approach, it
> is assumed that there is sufficient goodwill, trust, respect and willingness to co-
> operate and collaborate so that existing agencies can simply be encouraged by
> policy or administrative decisions to integrate their interests, mandates and
> initiatives. At the other end of the continuum, the approach involves conscious
> intervention or coercion, in a belief that, without such action, agencies will not
> attempt to work together due to lack of goodwill, and a propensity `to protect
> agency turf` . In this option, integration is specifically prescribed, with deliberate
> restructuring of agencies (modifying existing agencies, creating a new agency)
> and redefining power to achieve integration". (Hooper et al. 1999, 750)

In a study of protected areas and intergovernmental cooperation, Danby and

Slocombe (2002) outline five types of cooperative relationships that can exist including

communication, coordination and collaboration, cooperative management, joint

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management and international agreements. These types of cooperation range from informal to formal. For them, communication between partners and participants is considered the least formal and international agreements are the most formal and complex (Danby and Slocombe 2002). Cooperation is not the only concept that can be divided into multiple subcategories. Coordination also faces similar distinctions.

Coordination among agencies or "cross-agency integration" can be broken down into two dimensions, horizontal and vertical (Anker 2002, 201). Horizontal coordination addresses the need for different sectors operating at similar management levels to bring together their "mandates, interests and responsibilities" (Hooper et al. 1999, 755). Grumbine's (1994) review of dominant themes in ecosystem management also addresses the need to combine mandates and interests considering that the boundaries that are chosen for management may overlap several jurisdictions. This can be particularly problematic when mandates are in direct conflict with one another (Hooper et al. 1999) and may be difficult to change if they are legislated. Vertical coordination is the integration of different levels of government including national, state and local levels, and may even be extended to the public (Anker 2002). Challenges experienced during vertical coordination are similar to those at the horizontal level, however, increased tension emerges "by conflict over constitutional issues, power sharing and the balance of vertical power in the country" (Hooper et al. 1999, 755).

Coordination is about more than just bringing together partners and participants. Organizations and people bring knowledge, information and data to the table. Given that coordination is a "process of informed negotiation and bargaining" (Born and Sonzogni

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1995, 172), it is important to have a wide range of relevant information available for decision-making.

2.2.5 Information and Knowledge

Information and knowledge are critical to REM. Managers must make decisions based on the knowledge and information available to them. Inappropriate decisions are often the result of inaccurate or inadequate information. The need for an increase in the quantity, quality and organization of information about both social and biophysical environments is addressed by Grumbine's (1994; 1997) examination of ecosystem management. Gathering new information and knowledge through innovative investigations and drawing on established findings are both important for the decision making process. Integrated decisions should be made based on information about the entire system and not just any particular element (Margerum 1999c).

Slocombe (2001) identified several means by which information can be integrated and the difficulties associated with each. First, integration "about different things" involves bringing together information pertaining to environmental, social and economic components and can be obtained through a number of disciplines (Slocombe 2001, 121). Management initiatives that bring together information from different disciplines require participants from those disciplines "to facilitate the process" (Slocombe 2001, 122). MacKenzie (1997) argues in her study of Great Lakes remedial action plans that both natural science and social science are necessary. Natural scientists focus on the collection of information about physical features and attributes of the ecosystem, where social scientists "... are uniquely situated to link data to policy" (MacKenzie 1997, 177).

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Second, integrating information "in different formats" refers to the various ways in which data can be collected and stored (Slocombe 2001, 121). Data can be collected in a variety of ways, but a main distinction occurs between quantitative and qualitative (Slocombe 2001). Quantitative data utilizes numerical and measurable inputs, where qualitative data is more descriptive. Despite these differences, quantitative and qualitative both must be recognized as valuable by those involved in order to be integrated successfully (Slocombe 2001). Moreover, complications can also occur when data uses different units, scales, resolutions and software (Slocombe 2001).

Finally, integrating information "from different sources" relates to the people and places involved in data collection (Slocombe 2001, 121). Researchers, whether in a social or natural field, have very specific techniques for collecting information, while the knowledge for local people is derived from experience and history. Local and scientific information too have unique differences and values. Consideration must also be given to differing worldviews. Worldviews can vary between researchers in different fields (Jakobsen and McLaughlin 2004), in addition to those held by local peoples.

Although researchers and local people provide two important sources of knowledge, there are several other sources. Brown (2001; 2004) outlines five sources of knowledge including individual knowledge (e.g. personal experience); local knowledge (e.g. communities shared experience); specialized knowledge (e.g. Engineering); strategic knowledge (e.g. legislation); and holistic knowledge (e.g. a common purpose). Information and knowledge can be developed and defined by a variety of people, in a variety of settings. Integrated management initiatives should draw upon information from a variety of sources and utilize the best data and knowledge possible (Alberta Forestry

Lands and Wildlife 1991). Bringing together this information and knowledge in a meaningful way is critical for decision-making.

2.2.6 Methodology and Technology

Methodological integration addresses the need for the data, concepts and tools being utilized to be clear and consistent (Eggenberger and do Rosário Partidário 2000; Kirkpatrick and Lee 1999; Morrison et al. 2004). As previously discussed in Section 2.7, disciplines can have different methods for collecting information, are responsible for collecting different kinds of information, and can hold different worldviews. The "understanding of other disciplines' methods, traditions, terminology, and underlying assumption" is referred to as "cross-disciplinary literacy" (Jakobsen and McLaughlin 2004, 598).

A study by MacKenzie (1997) on remedial action plans in the Laurentian Great Lakes presents an example where varying terminology between disciplines was a barrier to management. The initial focus for the remedial action plan was to develop a greater understanding of the ecosystem, and was mainly conducted by researchers from the physical sciences (MacKenzie 1997). Several social scientists noted that "the concepts, theory, and language of the [remedial action plan] inhibited their ability to contribute substantively to the process" (MacKenzie 1997, 177). Increased communication and education may be able to foster improved understanding of complex concepts and terminology.

In Jakobsen and McLaughlin's (2004) study, the misunderstanding of another discipline was not the result of dissimilar terminology, but was rather the result of unclear terminology. One example provided by a participant of the study was the use of "broad

scale issues" and what was actually meant by the term. However, some believed that this barrier could be overcome by the continual explanation of terms (Jakobsen and McLaughlin 2004).

If integrated approaches are to involve numerous disciplines, the participants need to be clear on the terms being used during the communication process. Clear and concise language should also be present in the final documents. Defining terminology and concepts is one of many components necessary for management plans (Fallding 2000). When defining terms and concepts it is important to maintain consistency with definitions which are generally accepted (Fallding 2000). Although methodological integration makes up a smaller part of the integration discussion, the impacts can be substantial.

The tools that are utilized to organize information can range from documents to extremely technological applications. For instance, state-of-the-environment-reporting is not technological in nature, yet it has been identified as an instrument that strives to bring together and organize information from a variety of sectors (Brown 2001; Slocombe 1993). Geographic information systems (GIS) are an increasingly popular technological tool in REM. Alongside remote sensing and global positioning systems, GIS has "revolutionized natural resource assessment and management" (Ewert et al. 2004, 67). Remote sensing, aerial photos and digital photography are a few means to collecting past and present information; "hypertext documentation, World Wide Web (WWW) sites, and interactive simulations" are important ways to present information; and databases, GIS and simulation models are a few techniques available for the actual integration of data collected (Slocombe 2001, 126).

Access to technology, such as GIS and simulation models, may be able to increase the number of options for decision making, however if there is a lack of data or capacity to support the technology it can be restrictive (Bettinger and Boston 2001). Born and Sonzogni (1995, 175) explain how "new analytical tools, in particular a geographic information system (GIS) developed for the [Black Earth Creek Watershed], were especially useful for recognizing interrelationships among ecosystem components and resource use sectors".

Loh and Rykiel (1992, 167) argue that combining various computer technologies (e.g. GIS and data-base management) into what they call "Integrated Resource Management Automation" will be beneficial to resource managers. These benefits include: "(1) all relevant planning and management information is in one place, (2) a large number of alternatives can be considered with the same intensity while realizing labour and dollar savings over manual techniques, (3) rules are developed by resource managers themselves and can be maintained with relative ease to accommodate evolving management issues and concerns, and (4) the decision-making process is documentable, and decisions can be repeatable and consistent" (Loh and Rykiel 1992, 176). Access to and capacity of technology can provide increased potential for not only the analysis, but also the presentation of information and knowledge.

2.3   Strengths and Limitations of an Integrated Approach

A number of integration interpretations can be identified in the literature ranging from very broad themes (e.g. inclusive) to very specific elements (e.g. context). Throughout these varied interpretations both the strengths and limitations of integration are provided in summary below.

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An integrated approach has a wide range of potential strengths. It is replacing REM that is sectoral and reactive (Bellamy et al. 1999). Sectoral management is limited in its implementation capabilities, as some of the goals and objectives may be in direct conflict with another management sector (Cairns 1991). Plans and policies should address goals and objectives from a variety of partners and participants, as well as other regional and local plans that are present for the management area. By doing so managers and decision-makers can try to accommodate the varied interests that exist.

Accommodating all the values, concerns, and ideas of partners and participants, including those that are conflicting, may not always be possible. An integrated approach to management attempts to achieve a balance between those involved and their often competing interests (Born and Sonzogni 1995). An integrated approach also attempt to create a balance between the protection and utilization of the environment and its resources (Alberta Forestry Lands and Wildlife 1991). Balance can be achieved through active communication between partners and participants, however, compromises and trade-offs may become necessary if all demands cannot be met.

Creating a balance between social, economic and environmental interests, as well as maintaining sufficient resources for the future are elements of sustainability. Since IREM has the potential to protect resources over the long-term (Cairns 1991) and integrates a variety of interests, sustainability is a suitable goal to adopt. Margerum (1997) outlines sustainability as an important element of integrated management. However sustainability is not the only goal of an integrated approach and exists among several others (Born and Sonzogni 1995).

"Cost effectiveness" is another benefit of adopting an integrated approach to REM (Cairns 1991, 5). An integrated approach allows for the pooling of resources between partners and participants, and greater clarification of roles and responsibilities can assist in the identification and reduction of duplication that may exist between agencies (Morrison et al. 2004). Streamlining legislation and licensing procedures may also produce more efficient and effective management for both managers and land users.

Integration also involves the expansion of knowledge through information exchange (Morrison et al. 2004). Government agencies may only have information on the particular resources that they manage, but by communicating with other sectors a greater understanding of the ecosystem may be achieved. However, local knowledge and information held by both Aboriginal and non-Aboriginal peoples, should also be utilized wherever possible, as they have an in-depth understanding of the ecosystem in which they live (Slocombe 1998b).

The benefits presented here are only a few examples of the current need for an integrated approach, however, they do not rationalize the use of an integrated approach in all REM situations. For example, resource and environmental problems are not always complex and sometimes can be addressed by a single partner or participant (Hooper et al. 1999). Furthermore, IREM is not a fault-free approach and encompasses significant conceptual and practical limitations.

One conceptual limitation is that an agreement on the definition of integration has not been reached (Born and Sonzogni 1995) and procedures and guidelines for implementation are absent (Bellamy et al. 1999; Eggenberger and do Rosário Partidário 2000; Grinlinton 1992). Margerum (1997, 460) suggest that "a clearly articulated

procedural model for integrated planning and management is critical for guiding future decision makers".

Practical limitations of an integrated approach also exist. Cairns (1991) provides an extensive discussion of the barriers to implementation, however only three examples will be reviewed here. First, the amount of time and subsequent funding it takes to establish an integrated approach (Cairns 1991). Even though cost effectiveness was described as a benefit of applying an integrated approach, establishing and implementing this type of management requires both human and financial resources. For example, an integrated approach require resources in order to bring together various partners and participants (Born and Sonzogni 1995). Seeing the results of an integrated approach also takes time, which can be particularly problematic when assessing this type of initiative (Bellamy et al. 1999). Second, turf battles can exist among government agencies and sectors that fear a loss of authority over their particular jurisdiction. Third, identifying duplication among different environment and resource sectors can result in the elimination of jobs creating "insecurity" among staff members (Cairns 1991, 9).

Another major barrier to implementation is accessibility. Access to information and knowledge, access to technology, access to funding and human resources can benefit or limit the effectiveness of management and decision-making. For example, community groups may not have the capacity to collect and analyze detailed information on the environment and resources. Funding, training and available information may limit the use of technology available. Furthermore, human resources may be limited if the contribution by members is voluntary, as personal and professional interests may take priority.

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Reviewing the relevant literature has provided a foundation for identifying the key elements of an integrated approach and its potential strengths and limitations. IREM is a promising approach, however, the weaknesses outlined here suggest that further research is necessary. Improved structure for IREM is essential, as is the examination of implementation strategies.

3 Methodology

This chapter describes the methods that were utilized in order to satisfy the objectives outlined in Chapter 1. It begins with a brief description of case study research and the justification for choosing this type of approach. This is followed by a discussion concerning the application of a case study approach to the Southwest Yukon and the reasons for selecting this region as a study site. Information is provided about the documentation and open-ended interviews employed for data collection, as well as the approvals that were required to conduct this study. A conceptual framework that was developed to guide and structure the data collection and analysis is outlined. Concluding the chapter is the evaluative matrix and subsequent criteria developed to analyze the data collected.

3.1 Case Study Research

Yin (2003, 8) describes how to choose an appropriate research approach based on three criteria including "(a) the type of research question posed, (b) the extent of control an investigator has over actual behavioral events and (c) the degree of focus on contemporary as opposed to historical events". First, this research posed a "how" question, which a case study approach is designed to manage (Yin 2003). Second, unlike traditional experiments, this study did not have control over behavioural events. Finally, this research focused on contemporary rather than historical issues. After reviewing the criteria, a case study was the most appropriate method for this research.

A single case study was chosen for two main reasons. First "a single case can represent a significant contribution to knowledge and theory building" (Yin 2003, 40), and in this instance the theory is integration. The intention of this case study was not to recreate the concept of integration, but to expand on and refine what has already been developed. The second reason for choosing a single case study was due to the limited case studies in the existing integration literature. The few IREM case studies that do exist in the literature were primarily focused on watersheds and catchments (Ewert et al. 2004). Instead of watersheds, the REM boundaries in the Yukon are often based on cultural and historical territories used by the First Nations. By providing an additional case study to the integration literature, part of the existing gap has been filled.

REM in the Southwest Yukon has been chosen as the case study for this research. This case study is "embedded" as it contains several "units of analysis" (Yin 2003, 43) including wildlife management, protected areas management, forest management and environmental assessment (Figure 4). Environmental assessment was not included in the initial research proposal, however during the field season it became apparent that this REM process was particularly important. These processes have been chosen due to their interconnections, as well as their long-standing history in the region (with the exception of forest management). However forest management, being a recent development, allowed for contrast and comparison with the other REM processes.

Case studies can handle many forms of data including observations, documents and interviews (Yin 2003). Since this research assesses and incorporates more than one source of information, having a research method that supports this is essential. The evidence in this study is based on documentation, as well as open-ended interviews.

Figure 4. Embedded Units of Analysis

CONTEXT

Resource and Environmental
Management Processes in the
Southwest Yukon

| Forest Management | Wildlife Management |
| Protected Areas Management | Environmental Assessment |
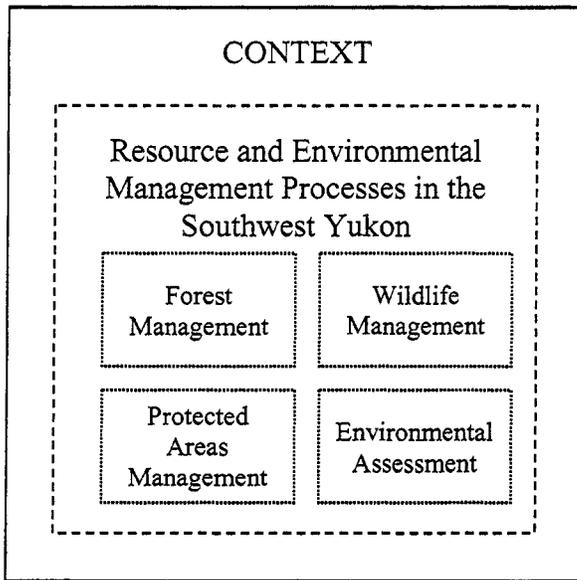
Source: Adapted from Yin (2003)

3.1.1 Documentation

Management plans, policies, meeting minutes, newsletters, government news

releases and legislation were reviewed, alongside a literature review to understand and

define concepts and theories more precisely. Relevant materials were retrieved from

academic libraries located at Yukon College, Wilfrid Laurier University, the University

of Guelph and the University of Western Ontario. Libraries in the Yukon that were

visited were the Department of Energy, Mines and Resources (DEMR), Department of

Environment (DOE), Yukon Conservation Society (YCS) and Kluane National Park and

Reserve (KNP&R). Additional documents were available through the Alsek Renewable

Resource Council (ARRC), Yukon Fish and Wildlife Management Board (YFWMB) and

Champagne and Aishihik First Nations (CAFN) office and online sources. Finally,

participants involved in this study also provided suggestions for relevant documents to

examine. The majority of documents were collected prior to conducting interviews in

order to gain further understanding of the initiatives that existed and to identify items that require further clarification.

3.1.2 Open-Ended Interviews

Open-ended interviews were conducted in person with a total of 14 participants. Participants included employees from the Yukon Territorial Government (YTG) Department of Energy, Mines and Resources (DEMR) and Department of Environment (DOE), the Champagne and Aishihik First Nations (CAFN), Parks Canada, Environment Canada, the Alsek Renewable Resource Council (ARRC), the Yukon Fish and Wildlife Management Board (YFWMB), the Yukon Environmental and Socio-economic Assessment Board (YESAB) Office, the Yukon Land Use Planning Council (YLUPC) and the Yukon Conservation Society (YCS). The majority of interviews were conducted in Whitehorse, however, two interviews (with an employee from CAFN and an employee from the ARRC) were held in Haines Junction. Duration of the interviews varied, however, none exceeded an hour and a half in length.

The initial selection of interviewees was based on participant's job titles, as well as suggestions from Dr. Scott Slocombe (advisor) who has many years of experience in this region. 'Snowball' interviews were then arranged based on suggestions from the initial participants and availability of individuals. Interviewees were asked a standard set of questions (Table 2), although additional questions did emerge out of discussions with participants. These interviews were recorded using a digital voice recorder to ensure quality and were later transcribed by the author and one assistant who was required to sign a data confidentiality agreement.

Table 2. Interview Questions

Integration Questions

- Do you feel integration is desirable?
- Do you feel there is an integrative component in what you do?
- How would you define integration?
- Is the idea of integration promoted in management documents, policy or legislation?
- Are there a number of stakeholders involved and if so can you identify them?
- How do you include stakeholders' values, concerns and ideas?
- Does cooperative management (co-management) exist and if so what role does it play?
- Is Traditional Ecological Knowledge (TEK) a component and if so how is the information included?
- Is integration of different kinds of information necessary for what you do?
- How do you organize your information (all types)?
- What tools do you utilize e.g. GIS?
- Are there any barriers to implementing integration?
- Are there any others I might talk to that you would recommend?

Additional Topics

- Sustainability
- Scale
- Devolution
- Top down/bottom up approach
- Driving forces of integration

3.2 Ethics and Permits

Wilfrid Laurier University requires an ethics review and approval for research involving human participants. As this research involved personal interviews, it was subject to this ethics review process. This research was given ethics approval, which included potential interview questions and an informed consent letter. All participants involved in this research where required to sign this informed consent letter explaining the purpose of the research and giving permission to record the interview. Interviewees

were also able to participate if they declined to be recorded. All but one interviewee agreed to the digital voice recording. Interviewees were assured anonymity and their names have been omitted.

In order to carry out the research necessary for this study, a permit was required and obtained through the Heritage Branch, Department of Tourism and Culture, Government of Yukon. The field season portion of this research was conducted over 8 weeks, between June 15th and August 3rd, 2006. The first week in the field was spent becoming familiar with my surroundings. The remainder of the field season was spent collecting data. The majority of the data collection was carried out in Whitehorse, however, one week was spent in Haines Junction where two interviews were completed, and additional documentation was collected.

The fieldwork portion of this research required an adaptive approach, as several unexpected changes occurred. For example, during the field season environmental assessment was included as an additional REM process; the number of participants expanded with suggestions from other interviewees; and documents including management plans frequently referred to additional information that would require retrieval and analysis. With the unanticipated circumstances that arose, it was important to be "adaptive and flexible" as is required, among other qualities, from researchers utilizing a case study approach (Yin 2003, 59).

3.3   Conceptual Framework

A conceptual framework was developed throughout a detailed literature review. The four main theoretical and conceptual frameworks identified in the literature review (Figure 2) provided an excellent foundation upon which to build. The framework outlined

here utilizes elements from the existing models and reorganizes them in a way that provides a more comprehensive representation of the integration characteristics.

Several characteristics overlap with one another between these frameworks. For example, characteristics from the Born and Sonzogni (1995) and Ewert et al. (2004) frameworks that overlap include inclusive, interconnective, strategic and interactive. Overlap would be expected in this instance as the latter framework was influenced by the former. The Morrison et al. (2004) framework also included a strategic characteristic, however, its intention was quite different from that of Born and Sonzogni (1995) and Ewert et al. (2004). Strategic is viewed by Morrison et al. (2004) as a political commitment in support of integration, rather than reducing the initial number of factors an integrated initiative should focus on. Furthermore, Mitchell and Pigram (1989) identify the importance of political commitment under the legitimization characteristic in their framework. Organizing these characteristics is challenging when they share the same name, but have different meanings or share similar meanings and are labeled differently.

Within Ewert et al. (2004) there is also a lengthy discussion surrounding descriptive criteria, which pertains to the implementation of integration. The descriptive criteria, including context and culture, institutional arrangements overcoming boundaries, interagency coordination and commitment and funding, are not represented within the illustrated framework provided by Ewert et al. (2004). Similar ideas within these descriptive criteria are represented in the Mitchell and Pigram (1989) framework, such as context and culture. The planning level hierarchy (normative, strategic and operational)

was absent from the existing IREM frameworks. It is important to include this hierarchy as integration may be present within each of the planning levels (Mitchell 1986).

With different characteristics in each of these frameworks, examining and organizing them into the conceptual framework presented in this study (Figure 5) was challenging. However, the characteristics have been organized into three separate categories. First, there is the planning level hierarchy outlined by Mitchell (1986). Second, there are important characteristics which relate to the process, rather than implementation, of integration and are thus referred to as broad themes. Finally, the specific elements of integration represent ways in which integration can be applied. Organizing the characteristics is intended to create greater clarity. These divisions are discussed in greater detail in the following subsections.

Figure 5. IREM Conceptual Framework
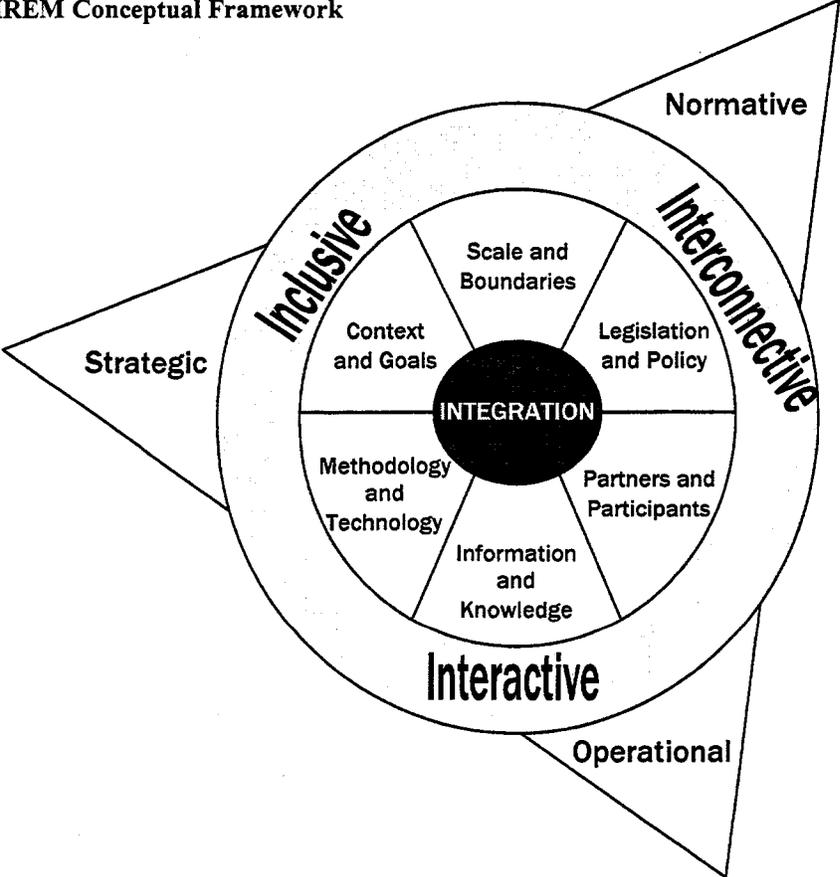
3.3.1 Planning Levels

Mitchell (1986, 13) states, "the search for integration can occur at normative, strategic or operational levels". Detailed characteristics of these planning levels are outlined in (Table 3). Grinlinton (1992) adopted this model for assessing Integrated Resource Management from a legislative perspective. Grinlinton (1992, 6-11) describes specific details of these planning stages. First, one element of normative planning is to identify and determine the "overall values and priorities for various resources". Second, part of strategic planning involves "the integration of resource allocation and management regulation". Finally, one aspect of operational planning is about "the allocation of specific responsibility for various elements of resource management". With the descriptions of the planning levels, Grinlinton (1992) further explains that aspects from one planning level may be related to another.

Table 3. Planning Levels

Normative
- A reconsideration of the value premises underlying decisions
- The definition of desired ends and ideals
- Decisions that determine what ought to be done

Strategic
- The analysis and evaluation of alternative goals and objectives
- The selection and design of means to attain desired goals
- Decisions that determine what can be done

Operational
- Plan implementation
- Purposeful implementation
- Decisions that determine what will be done

Source: Adapted from Mitchell (1986) and Smith (1982)

Considering that these resource and environmental planning categories are very broad they have been situated on the periphery of the conceptual framework. They are represented by a triangle, tilted to display the existing hierarchy. The normative stage is presented at the top of the hierarchy, followed by strategic planning, where the final stage in the hierarchy is operational planning.

3.3.2 Broad Themes

Inclusive, interconnective and interactive elements represent the broad themes for IREM. These broad themes are represented inside a circle. A circle was chosen to represent the adaptive and evolving nature of IREM. An integrated approach must "[allow] for monitoring, feedback, and adjustment" (Margerum 1999c, 160), continually cycling any shifts in participants' concerns, opinions (Hooper 1997) and changing attitudes in society, as well as new sources of knowledge, data, and technology (Alberta Environment 2001). Furthermore, two of the existing conceptual frameworks (Figure 2b, c) included feedbacks between components.

The three themes within the circle (inclusive, interconnective and interactive) should apply to all planning levels. This does not imply that all issues and interconnections should apply to all stages of management, which would create a stereotypically comprehensive perspective. Rather it implies that planners, managers and decision makers should recognize key factors within social and environmental systems and the interconnections between them during the planning and implementation stages. The interactive element, meaning the coordination of participants and information exchange, is essential throughout all the planning stages (Margerum and Born 1995). The

specific elements of integration also reflect the need be inclusive, interconnective and interactive.

3.3.3 Specific Elements

Each segment of the inner circle divides the specific elements of integration, including context and goals, scales and boundaries, legislation and policy, partners and participants, information and knowledge, and methodology and technology. The broad themes of integration outlined in section 3.3.2. can be applied to these specific elements. For example, a management initiative should be inclusive of the goals and values held by various participants and recognize interconnections between various scale and boundaries. Addressing a single element will not achieve integration. On the other hand, addressing all of the elements does not guarantee complete or ideal integration either. The degree of integration can vary within the specific elements. All of the segments converge at the center of the framework, and contribute to the concept of integration.

Drawing on existing frameworks in the integration literature and field research, produced a more refined structure for integration. Although this framework provides an improved structure, it remains flexible in order to accommodate various situations and locations. In this case study the conceptual framework was applied to the four REM processes. The components of the conceptual framework provided themes and keywords which would guide the collection and analysis of management plans and interview data. The data collected was extensive and an organizational and evaluative tool was necessary. The conceptual framework provides structural elements for an evaluative matrix which resource managers, policy planners and decision makers can utilize when developing and assessing management plan, initiatives and policies.

3.4 Evaluative Matrix

An evaluative matrix (Table 4) was developed based on the conceptual framework to assess the extent to which integration has been achieved in specific REM processes in the Southwest Yukon. This framework was designed to identify opportunities for improved integration in REM and provide flexibility in order to accommodate various situations and locations. The evaluative framework allowed for the organization of documentation and interview data in order to perform an in-depth analysis. The evaluative matrix placed emphasis on the specific elements of integration (context and goals, scales and boundaries, legislation and policy, partners and participants, information and knowledge, and methodology and technology) within each REM process (wildlife management, environmental assessment, protected areas management and forest management).

Table 4. Evaluative Matrix

REM Processes / Elements	Wildlife Management	Environmental Assessment	Protected Areas Management	Forest Management
Context and Goals				
Scales and Boundaries				
Legislation and Policy				
Partners and Participants				
Information and Knowledge				
Methodology and Technology				

With a range of large scale and small scale documents and a variety of interviewees involved in this study, specific questions needed to be asked of the data. Yin (2003) outlines five levels of questions that are utilized during case study research. In terms of data analysis, level 1 and level 2 questions are required. Level 1 questions are asked of the interviewees (Table 2), where level 2 questions (Table 5) are asked of the data collected. The level 2 questions developed for this study were a reflection of the components of the conceptual framework and existing evaluative frameworks in the literature including Bellamy et al. (1999) and Alberta Environment (2001). Level 2 questions were utilized to corroborate the data collected from the documentation analysis and interviews.

Table 5. Level 2 Questions

- Is integration present through the normative, strategic and operation levels of planning?
- Does the context of the Southwest Yukon support integration?
- Was the policy or initiative developed prior to land claim settlements?
- Are the goals clear and integrative in nature?
- Is sustainability identified as a goal?
- What boundaries and scales are chosen and are they appropriate for the initiative?
- Is there consistency between sub-regional to territorial management initiatives?
- Are goals and objectives consistent between management initiatives?
- Does relevant legislation support or hinder integration?
- Are a variety of participants included in the initiative and in what manner?
- Are different forms of information and knowledge incorporated?
- Does technology (e.g. GIS) play a role?
- Is the language in these initiatives clear and concise?
- Do the REM processes address the need to be inclusive, interconnective and interactive?

4 Study Area - Southwest Yukon

This chapter provides specific details regarding the study area. Descriptions of

significant biophysical characteristics including climate, flora and fauna are provided.

Next, major social and economic events that have occurred in the Southwest Yukon are

summarized, followed by an overview of the institutional structure for REM. The major

actors influencing resource and environmental decision-making are organized into a

management network. The management network also recognizes the communication

flows that exist between partners and participants. Finally, this chapter concludes with a

brief overview of the REM processes chosen for this study.

4.1 Biophysical Overview

The Southwest Yukon covers approximately 66,000 square kilometres (Yukon

Land Use Planning Council 1991) of the 483,450 square kilometres in the Territory

(Government of Yukon 2006e). The climate in the Southwest Yukon varies between

subarctic and continental, and the mean annual temperature is –3°C (measured at Haines

Junction) (Yukon Land Use Planning Council 1991). The annual precipitation can range

from approximately 300mm on the leeward side of the mountains to over 3000mm on the

Alaska coast (Yukon Land Use Planning Council 1991).

Boundaries of the Southwest Yukon are primarily political. The Western and

Southern boundaries are adjacent to Alaska and British Columbia respectively, where the

Northern and Eastern borders are influenced by the region's First Nation Traditional

Territories (Champagne and Aishihik, Kluane and White River). The Shakwak Trench, a

prominent physiographic feature in the Southwest Yukon, also plays a major role in the

division of the region. South of the Shakwak Trench lies the Kluane Range and St. Elias Range, while to the north are the Kluane Plateau and Ruby Range. The Shakwak Trench also plays an important role in transportation for the area, as portions of the Alaska Highway and Haines Road are situated within it.

The Southwest Yukon is located in the Subarctic biome with the majority of land representing the Boreal Cordillera Ecozone. However, a small portion of the far southwest corner is part of the Pacific Maritime Ecozone. The Cordillera has a diverse landscape including mountains, valleys, glaciers and ice fields (Bone 2003). Features of this area include Mount Logan, the highest peak in Canada at 5,959 metres and "one of the largest non-polar icefields in the world" (Parks Canada 2004, 5). Other features include the Alsek River watershed and a small part of the Yukon River watershed which "is the second longest river in Canada and drains almost two-thirds of the territory" (Government of Yukon 2006e). The diverse landscape of the Southwest Yukon is not static and will continue to change with the regular tectonic activity that is present (Environment Canada 1990).

In the Southwest Yukon widespread biological diversity exists. Flora is varied throughout the mountains with the boreal forest occupying lower elevations, mid-elevations containing sub-alpine shrubs, and high elevations made up of alpine vegetation (Danby and Slocombe 2002). The fauna in the Southwest Yukon is just as abundant as the flora. Dall sheep (*Ovis dalli*), moose (*Alces alces*) and grizzly bear (*Ursus arctos*) are only a few of the large mammal species present on the landscape. Lynx (*Lynx canadensis*), beaver (*Castor canadensis*) and wolverine (*Gulo gulo*) are a few examples of the small mammals that can be found in this region, alongside over 200 bird species

(Government of Yukon 2006e). With a diverse landscape rich in resources, a matrix of land uses and values is formed, including both resource consumption and resource protection.

4.2 Social and Economic Overview

Human history in the Southwest Yukon is extensive and influenced by a number of events. Known human existence in this area extends farther than 8,000 years ago (Yukon Land Use Planning Council 1991). The lifestyles of Aboriginal people prior to European settlement involved utilizing the land, migrating throughout the year seeking more suitable conditions and trading between Aboriginal peoples (Yukon Land Use Planning Council 1991). Variability in the Southwest Yukon environment meant that not all resources were available at all locations and times. This limitation on resources created a need to trade between people of different areas, for example, those that lived on the coast (Tlingit) and those living in the interior (e.g. Tutchone) (Yukon Land Use Planning Council 1991).

During the early 19th Century trading was extended to European items, such as weapons (Government of Yukon 2006e). However, the Tlingit had control over the exchange of these items with those living in the interior (Government of Yukon 2006e). By the mid-19th Century there was establishment of trading posts by the Hudson's Bay Company, such as Fort Selkirk (located near the intersection of the Yukon and Pelly Rivers). Fort Selkirk encroached on the existing trading practices and was razed in 1852 to deter independent trading in the Tlingit jurisdiction (Government of Yukon 2006e). Commercial trading was one of the first industries to be established in the Yukon, although mining was not far behind.

The discovery of gold in the Klondike in 1896 indirectly impacted the Southwest

Yukon in several ways. Some prospectors utilized this area as a route to the Klondike, but

it was also considered an area of great potential after the initial Klondike rush dwindled

(Yukon Land Use Planning Council 1991). However, the attraction of the Southwest

Yukon as a mining destination was short-lived and was drastically reduced after the

initial rush (Yukon Land Use Planning Council 1991).

The 1940s brought a large infrastructure project, the Alaska Highway, which had

both positive and negative impacts on the region. The Highway initially provided a

transportation route for military purposes, which resulted in the overharvesting of wildlife

resources by its builders and travelers (Yukon Land Use Planning Council 1991). The

Alaska Highway was eventually opened to the public and now provides the main access

road to tourists to the Yukon and Alaska.

The majority of the region's population lives in communities situated along the

highway (Yukon Land Use Planning Council 1991). Some of these communities include

Burwash Landing, Destruction Bay, Beaver Creek and Haines Junction (Figure 1). By

adding up the individual populations of the main communities, the Southwest Yukon has

approximately 1000 residents (Government of Yukon 2001a) of the 28,674 people in the

Territory (Government of Yukon 2001a). However, there are several smaller

communities, such as Champagne, Aishihik, Klukshu and Canyon, which would likely

raise the area's population by a few hundred. Approximately 45 percent of the population

in the Southwest Yukon is of Native decent (Yukon Land Use Planning Council 1991).

The majority of this region consists of traditional lands utilized by Champagne and

Aishihik First Nations (CAFN), Kluane First Nation (KFN) and White River First Nation

(WRFN), however, there are overlapping areas that neighbouring First Nations also recognize as their Traditional Territories (Figure 1).

The community of Haines Junction has the largest population in the region with nearly 800 people and also provides a number of services to the region including education and health facilities (Government of Canada et al. 2004). The people of Haines Junction are employed in a variety of economic sectors including tourism and government, as well as subsistence activities. Subsistence activities are included in this discussion, as they are an essential component of economies in the Territory (Thompson et al. 1986). Even though there is a small population in the region, there is a desire to develop other resource sectors including forestry (Danby et al. 2003). Decision makers and managers can look to documents such as the *Yukon Economic Strategy* (Government of Yukon 1988b), *A New Direction: Building a Sustainable and Competitive Yukon Economy* (Government of Yukon 2004f) and the *Kluane Region Tourism Plan* (Inukshik Planning and Development 2000) for direction and guidance for ways to rejuvenate, diversify and create a stronger more sustainable economy.

4.3   Institutional Overview

In a short time the Southwest Yukon faced incredible changes, which have all helped shape the region. In the last 15 years REM in the Yukon has been redefined. Management jurisdiction and decision making power have been redistributed to both the Government of Yukon and the First Nations. Processes that enabled these changes include the devolution of land and resource authority from the Federal Government to the Territorial Government and the settlement of comprehensive land claims with First Nations.

Devolution, the more recent change in the Yukon, was enacted after several years of negotiation on April 1, 2003 (Government of Canada et al. 2003). Devolution, for the Yukon, means that the Territorial Government is now responsible for nearly all land, resource and environmental matters that were previously managed by the Federal Government (Government of Yukon 2006e). With the Territorial Government having authority over land and resource management there are a variety of potential benefits for the Yukon including increased public participation in "their economic futures" (Government of Yukon 2006e), increased government accessibility and accountability to the public, reduced reaction time to problems or concerns (Government of Yukon 2002a) and increased efficiency between government bodies (Government of Canada et al. 2003).

Additionally, the Territory also gained financial and human resources from the Federal Government in order to increase its capacity to implement initiatives (Slocombe et al. 2005). With this transfer the Territory also has the capacity to revoke or substitute legislation applicable to the Yukon that was in place under federal control (Government of Canada et al. 2003). Coates and Morrison (2005, 310) argue that "with devolution and the redrafting of the *Yukon Act*, the territory has a far greater measure of control over resources, spending, and policy-making than at any time in its history". Although the Yukon Government gained authority over public lands in the territory, the Federal Government still plays a role in management of lands such as National Parks, including Kluane National Park and Reserve (KNP&R).

Devolution has influenced the way resource and environmental matters are addressed, however the settlement of comprehensive land claims created an even greater

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shift in power. First Nations gained the right to govern settlement lands, as well as to participate in the decision making process for non-settlement lands. Comprehensive land claims began to materialize at the turn of the 20th Century, when Chief Jim Boss contacted the Superintendent General of Indian Affairs regarding the pressures being placed on the land and resources of the Ta'an Kwach'an First Nation as a result of the Gold Rush (Government of Yukon 2006b). Land claim negotiations formally began in the 1970s and continued through the 1990s with the signing of the Umbrella Final Agreement (UFA) in 1993, and the on-going negotiations of First Nation specific settlements (Government of Canada et al. 1993b).

The UFA provides a framework for individual First Nation Final Agreements. Eleven First Nations in the Yukon have settled their land claims, while three remain outstanding (Government of Yukon 2006b). In the Southwest Yukon the Champagne and Aishihik First Nations (CAFN) and the Kluane First Nation (KFN) settled their land claims in 1993 and 2003 respectively, while the White River First Nation (WRFN) has not yet completed the process. The UFA has wide ranging influence on REM, including but not limited to, protected areas (chapter 10), environmental assessment (chapter 12), wildlife (chapter 16) and forests (chapter 17).

Through the UFA and subsequent local First Nation Final Agreements, a number of boards have been established territory-wide, within First Nations Traditional Territories, and between individual First Nations with settled land claims. These boards include the Yukon Fish and Wildlife Management Board (YFWMB), local Renewable Resource Councils (RRCs), the Kluane National Park Management Board (KNPMB) and the Yukon Environmental and Socio-economic Assessment Board (YESAB).

4.3.1 Yukon Fish and Wildlife Management Board

Under the UFA (16.7.1), the Yukon Fish and Wildlife Management Board (YFWMB) acts "as the primary instrument of Fish and Wildlife management in the Yukon" (Government of Canada et al. 1993b, 166). The mandate of the YFWMB is "to ensure the continued well-being of fish and wildlife populations in the Yukon for the use and enjoyment of all Yukoners and future generations while protecting First Nations special interest in wildlife" (Yukon Fish and Wildlife Management Board 2006). The YFWMB is a cooperative management board with Council of Yukon First Nations (CYFN) and YTG each nominating 6 members (12 total) to sit on the Board.

The UFA (16.7.11) allows the YFWMB to "make recommendations to the Minister, to Yukon First Nations and to [RRCs] on all matters related to Fish and Wildlife management, Legislation, research, policies, and programs" (Government of Canada et al. 1993b, 168). Recommendations are based on various forms of information presented to the Board including scientific, traditional and local knowledge (Yukon Fish and Wildlife Management Board 2006). Recommendations related to the Yukon *Wildlife Act* regulations are made annually to the Minster and can be developed by individuals, governments or RRCs and are reviewed by the public and the YFWMB before being proposed (Yukon Fish and Wildlife Management Board 2006). Consensus decision-making is utilized by the YFWMB for the recommendations that are presented to the Minister (Yukon Fish and Wildlife Management Board 1992). However, the Minister has the authority over whether these recommendations will be implemented or not in the coming year (Yukon Fish and Wildlife Management Board 2006).

4.3.2 Renewable Resource Councils

The UFA (16.6.1) identifies the Renewable Resource Councils "as a primary instrument for local renewable resources management" (Government of Canada et al. 1993b, 163). RRCs are established in individual First Nation Traditional Territories with a settled land claim and manage for fish, wildlife and forest resources. The composition of the council is similar to that of the YFWMB as CYFN and YTG each nominate half the Board, but instead of 12 members RRCs only have 6. The YFWMB and RRCs are also similar in that they both provide a "voice" for the public in the management of their respective resources (Alsek Renewable Resource Council 2002, 1; Yukon Fish and Wildlife Management Board 1992, 5). RRCs "also play an important advisory role to the [YFWMB] by raising awareness of specific issues and providing local and traditional information" (Yukon Fish and Wildlife Management Board 2006).

There are two established RRCs in the Southwest Yukon. The first is Dän Keyi Renewable Resources Council located in the Kluane First Nation Traditional Territory and the Alsek Renewable Resource Council located in the Champagne and Aishihik First Nations Traditional Territory. A third will likely be established for the White River First Nation Traditional Territory with the settlement of their land claim agreement.

4.3.3 Kluane National Park Management Board

Kluane National Park and Reserve (KNP&R) is a significant component of the Southwest Yukon, as it takes up almost one third of the landscape. KNP&R is approximately 22,000 square kilometres in size, contains some of Canada's largest mountains and icefields, and represents the Northern Coast Mountain Natural Region of Canada (Parks Canada 2004). KNP&R overlaps all three First Nation Traditional

Territories in the Southwest Yukon and was given national park reserve status upon its establishment in 1976 until the land claims of these First Nations could be settled. Through the CAFN land claim, the reserve status was lifted off the portion of the park that overlapped with the CAFN Traditional Territory (TT). With the settlement of the CAFN land claim a cooperative management board, Kluane National Park Management Board (KNPMB), between the First Nation and Parks Canada was established.

KNPMB is of similar composition to the other cooperative management boards previously described, however the Federal Government and First Nation nominate the members of the Board, as national parks are in federal jurisdiction not territorial. KNPMB has 2 voting members from the Federal Government, 2 voting members from CAFN and the park superintendent is a non-voting member. Two additional members are expected to join the KNPMB from the Kluane First Nation as their land claims have now been settled (Parks Canada 2004). KNPMB is similar in composition and purpose to the YFWMB and ARRC. KNPMB "provides a vehicle for public involvement in park management and may make recommendations to the Minister on any matters related to management or development in the park" (Parks Canada 2004, 7).

4.3.4 Yukon Environmental and Socio-economic Assessment Board

The Yukon Environmental and Socio-economic Assessment Board's (YESAB) "goal is to ensure the new assessment process is the best possible arrangement for all interests". It is in charge of implementing the *Yukon Environmental and Socio-economic Assessment Act (YESAA)* (Yukon Environmental and Socio-economic Assessment Board 2005b). With the implementation of *YESAA*, YTG will no longer perform environmental assessments (Government of Yukon 2005a). Instead, one of the 6 Designated Offices

throughout the Territory will conduct nearly all environmental assessments (Yukon Environmental and Socio-economic Assessment Board 2005a).

YESAB is composed of 7 members, 3 executive and 4 general board members who are nominated and appointed. YTG, CYFN and the Federal Government all play a role in developing the structure of YESAB, however, YESAB is not a cooperative management board. Instead YESAB is an "independent arms length entity"(Yukon Environmental and Socio-economic Assessment Board 2005a), yet still must maintain a connection with government bodies regarding development projects.

4.4   Southwest Yukon Management Network

All of the various partners (government bodies, departments and management boards) and participants (NGOs, industry, public and university researchers) can be combined into a management network (Figure 6). The situation in the Southwest Yukon is complex due to devolution and comprehensive land claims (YTG-DOE participant), which resulted in structural changes for YTG and the First Nation Governments respectively (YFWMB participant). This management network reflects the structural changes that exist within the region. The management network presented here only captures the main connections between partners and participants, however, it recognizes that many additional connections and communications may be necessary during the management planning and decision-making process.

Government bodies in the Southwest Yukon include the First Nation, Federal, Territorial and Municipal. Vertical coordination exists within the traditional government hierarchy (from federal to municipal). However, the First Nation Government does not easily fit into this hierarchy, as their powers and authorities are similar to various

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Figure 6. Management Network – CAFN TT

Boxes inside the oval:

Federal Government

Yukon Territorial Government

Yukon Department of Environment

Yukon Department of Energy, Mines and Resources

Village of Haines Junction

Kluane National Park Management Board

YESAB

Yukon Fish and Wildlife Management Board

Alsek Renewable Resource Council

CAFN First Nations Governments

CAFN Department of Heritage, Lands and Resources

Boxes outside the oval:

Public

NGOs

Industry

University Researchers

Legend:

Communication Flow

Independent Arms Length Board

Cooperative Management Board

Government Partners

Non-Government Participants

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government levels (YTG-DOE participant). In the management network presented here, the First Nation Government is recognized as an equal, yet separate entity. With this separation there is a need to horizontally coordinate these government bodies. For example, establishing regional offices has proven useful at involving the Territorial Government in the decision-making process with community-based partners (First Nation Governments and RRCs) (YTG-DOE participant).

Another way in which this coordination can be achieved is through the development of cooperative management boards. One positive attribute of the Southwest Yukon's cooperative management boards is that they are an outlet for active communication between government bodies and provides a structured means for community involvement. A cooperative management board, the KNPMB, exists between the First Nation Government and Federal Government. Other cooperative management boards between the First Nation Government and Territorial Government include the YFWMB and RRCs. The YFWMB provides consistency across the Territory in terms of policy, while encouraging community issues being handled by the communities (YTG-DOE participant). For example, the Moose Harvest Management Framework provided recommendations that could be used for moose management (YFWMB participant), while still allowing alternative methods to be implemented. This statement is supported in the Moose Harvest Management Framework as it states,

> "It is recognized that the moose harvest management options discussed in this document do not cover the entire spectrum of options available and that they may not provide the ideal solution to specific management problems. For that reason local [RRCs] may propose alternate harvest management approaches/regulations" (Yukon Fish and Wildlife Management Board 2002, 2).

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The YFWMB and RRCs also work cooperatively with one another (YFWMB participant). To reflect this cooperation, a line of communication has been drawn between them.

Horizontal coordination is also necessary between separate government departments, as they have varying goals and objectives. The purpose of the DOE is to "[protect and enhance] the quality of the Yukon environment through ecosystem based management, conservation of resources, and protection and maintenance of biodiversity" (Government of Yukon 2006d). "The [DEMR] strives for a healthy and sustainable resource sector, developed and managed in partnership with Yukoners as a key contributor to a prosperous and competitive Yukon economy" (Government of Yukon 2006a). The development and environmental government departments should recognize each others' objectives in their mandates (YTG-DOE participant). However, management initiatives, such as the Integrated Resource Management Implementation Strategy (IRMIS) (Government of Yukon 2004e), have required interdepartmental cooperation between the DOE and DEMR. Communication flow is critical between these two departments, as each jurisdiction's resource management decisions can impact the others.

An additional entity that exists in this framework is YESAB. YESAB has been placed in the centre of the management network to reflect its independence from governing bodies, as well as its inevitable interactions with them.

This network is extended to those participants not related to government bodies, including but not restricted to the public, NGOs, industry or university researchers. These groups are separate from the decision-making bodies, but may have a large influence on the outcomes of management. Although communication lines must remain open with

these groups, sometimes it becomes difficult. A YTG-DOE participant explained how there is some resistance from the communities concerning the inclusion of NGOs. A participant from YCS expressed how much time was taken away from forest planning to debate whether YCS should be involved as they were not based out of the community. These comments address a limitation to the Southwest Yukon management network in that communication is not always a straightforward process. Even though communication lines should always remain open, lines can get crossed or even breakdown. An in-depth discussion regarding the ways in which these groups communicate and share information with one another is provided in Chapter Five.

Strength in the management network comes from the active contributions of all of the partners and participants represented in this management network in the REM processes selected for this study. A brief background of each process is necessary to expand on context and increase understanding.

4.5   Resource and Environmental Management Processes

The four REM processes chosen for this study include environmental assessment, wildlife management, protected areas management and forest management. This section outlines a brief history for each of the chosen REM processes, including an introduction to recent management initiatives. After each subsection is a summary of how integration is observed in the REM process. The following chapter discusses the specific characteristics of these summaries in detail.

4.5.1 Environmental Assessment

Canadian environmental assessment formally began in 1973 under the Federal Environment Assessment and Review Process. Environmental assessment underwent several changes and revisions over the years with the Environmental Assessment Review Process Guidelines Order in 1984 and the *Canadian Environmental Assessment Act* (*CEAA*) in 1995. These events are significant to the environmental assessment process across Canada and in the Yukon where the Federal process was in place until devolution in 2003. However, prior to devolution a new environmental assessment system was being developed out of the comprehensive land claims agreement.

The Development Assessment Process (DAP) as outlined in Chapter 12 of the UFA specified various objectives, for example a way to review development proposals for environmental and socio-economic impacts; to involve Aboriginal people and their knowledge; and to conduct efficient and effective environmental assessments, among other goals (Government of Canada et al. 1993b). However, with devolution, environmental assessment authority was transferred to YTG from the Federal Government before DAP could be fully implemented. Until a DAP system could be completed, the Yukon *Environmental Assessment Act* (*YEAA*) was passed in order to 'mirror' *CEAA* (Government of Yukon 2004g).

During the transition period between devolution and full implementation of a DAP system, both *YEAA* and *CEAA* were technically applicable to development projects in the Territory. YTG and the Federal Government came to an agreement, the *Canada-Yukon Agreement on Environmental Assessment Cooperation*, in order "to streamline the

environmental assessment of projects that [were] subject to both *CEAA* and [*YEAA*]"
(Government of Yukon 2004g).

With devolution and the fulfillment of requirements outlined in the comprehensive land claims, the environmental assessment process in the Yukon has now evolved even further. The *Yukon Environmental and Socio-economic Assessment Act (YESAA)* (formerly known as DAP) was fully implemented in late 2005 and replaced both *YEAA* and *CEAA* in the Territory (Government of Yukon 2005a). Under *YESAA*, the YESAB was established to implement the legislation, and Designated Offices were established to conduct the majority of environmental assessments for the Territory. *YESAA*, as the implementation of DAP, should not only take environmental effects into consideration, but also the socio-economic effects of development projects and the advantages and disadvantages of both, as well as the inclusion of First Nations and full and fair consideration of their information and knowledge (Government of Canada 2003). *YESAA* is now fully operational and environmental assessments must be completed under this new system. Environmental assessment in the Yukon has experienced an extensive transformation over a short period of time (Slocombe et al. 2005) and will continue to evolve in the future.

Environmental assessment is an essential component to REM, as many of the activities proposed within the processes chosen for this study would require an assessment. Table 6 provides examples of how each specific element of integration applies to environmental assessment in the Southwest Yukon. Through an examination of Table 6 it is clear that each specific element of integration has generally been addressed. The following chapter provides an in depth look at these characteristics.

Table 6. Integration in Environmental Assessment Summary

REM Process Elements	Environmental Assessment
Context and Goals	• Environmental assessment can increase the efficiency for the permitting process • Works towards balancing resource development and environmental protection
Scales and Boundaries	• Applies to all lands including Federal, Territorial and First Nation managed lands • The boundary for the Southwest district office is similar to the GKLUP and YLUPC boundaries, which primarily encompasses the Kluane, White River and Champagne and Aishihik First Nations TT
Legislation and Policy	• Supports the inclusion of participants and knowledge
Partners and Participants	• Involves inevitable contact with all partners and participants which propose or are impacted by development
Information and Knowledge	• Provides full and fair consideration to various forms of information and knowledge
Methodology and Technology	• Utilizes a website and public registry to distribute and communicate information to those interested in development projects

4.5.2   Wildlife Management

Wildlife Management has the longest history of the REM processes chosen for

this study. Wildlife management was the first responsibility devolved to the Yukon

Territory from the Federal Government, in 1900. Shortly following this transfer *An*

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Ordinance for the Preservation of Game was established outlining harvest limits and the

consequences for overharvesting (McCandless 1985). This was in response to the

alarming degradation of wildlife populations due to the influx of prospectors during the

Klondike Gold Rush (McCandless 1985).

A second influx of individuals to the Yukon was experienced during the

construction of the Alaska Highway. This influx not only increased the population, but

also caused a decline in the game of the surrounding area (McCandless 1985). In

response to this rapid decline in wildlife populations, the area south of the Highway was

designated a game sanctuary (Slocombe 1996). McCandless (1985, 40) described how

the Alaska Highway and those involved in its construction "made a permanent change in

the Yukon's culture and landscape, starting with the displacement of river traffic and

immigration to Whitehorse and new, smaller communities along the highway". The

Alaska Highway continues to play a significant role in the Territory.

Even though the Territorial Government had gained authority over wildlife

management in the early 1900s, resources that comprised their habitat, such as forests

and water, remained under federal control (Government of Yukon 1985), and were not

transferred to YTG until more than a century later. However, it was expected that with

the transfer of authority the government would "be able to integrate the various

management programmes and provide more effective methods to protect and manage fish

and wildlife habitat" (Government of Yukon 1985, 1).

Over the years, the users of wildlife resources have not significantly changed in

the Southwest Yukon. Consumptive users include Aboriginal people, residents and non-

residents, who utilize wildlife for subsistence or commercial purposes. Non-consumptive

users may include tourists who participate in photography and wildlife viewing. Regardless of whether the use is consumptive or not, they both rely on abundant wildlife populations. Management that supports abundant populations requires careful consideration of the decisions that will be made.

Wildlife management utilizes licensing to assist in the maintenance of sustainable populations. Licenses vary in cost depending on residency. It is important to note that First Nation members are not required to obtain licenses or pay fees to hunt since subsistence rights have been established in their comprehensive land claims agreement. However, individual First Nation Governments may provide their own harvesting and reporting requirements for their members (Government of Yukon 2005b). When hunting big game, seals are required for every animal killed. Seals can vary in cost depending on the animal. Furthermore, non-resident hunters also require the services of a licensed outfitter and licensed guide when hunting for big game. These types of rules and regulations not only respond to safety concerns, but also provide a general monitoring system for critical wildlife and economic development opportunities.

The settlement of comprehensive land claims in the Yukon has changed the way decisions are made concerning wildlife resources. Wildlife management is now based on cooperative decision-making between both YTG and First Nation Governments (e.g. RRCs and the YFWMB). Recent wildlife initiatives in the Southwest Yukon, including the Alsek Moose Management Plan (AMMP) (Alsek Renewable Resource Council et al. 1997) and Aishihik Integrated Wildlife Management Plan (AIWMP) (Government of Yukon et al. 2000), support a community-based approach to management. These planning processes reflect community concerns about wildlife populations, harvest and

habitat and respond to these concerns with recommendations and actions. The AIWMP

outlines the utilization of a reference manual that provides a range of information to the

partners and participants; community communication that can take a variety of forms;

and a plan that provides actions for implementation over a period of five years

(Government of Yukon et al. 2000).

Through the above overview it is evident that wildlife management has incurred

many changes and adjustments in its structure over the years, and has a strong connection

with the other REM processes chosen for this study. Current management initiatives

appear to be shifting towards an integrated perspective. Table 7 provides a summary of

the general application of integration within wildlife management. Additional

information is provided in Chapter Five regarding these specific characteristics.

Table 7. Integration in Wildlife Management Summary

REM Process / Elements	Wildlife Management
Context and Goals	• Land claims settlements have helped reduce the frontier attitude by filling in the spaces of the Territory that were once thought of as vacant • Wildlife management works towards sustainable population
Scales and Boundaries	• Temporal scales focus on the 'biological year' of wildlife • Management plans apply to settlement and non-settlement lands
Legislation and Policy	• *Wildlife Act* is adaptive legislation which is annually amended to reflect the needs and concerns of partners and participants • An LOU between CAFN and YTG was signed supporting the elements of an integrated approach • Recognizes the goals, mandates and objectives of higher level and lower level management plans that exist in the region

Table 7- Continued. Integration in Wildlife Management Summary

Partners and Participants	• YFWMB and RRCs provide cooperative management • Utilizes workshops
Information and Knowledge	• Requires a respectful and tolerant atmosphere for information sharing • Incorporates applicable and available traditional, local and scientific knowledge
Methodology and Technology	• Clearly identified the roles and responsibilities of those involved in management • Utilizes a website to disseminate information

4.5.3   Protected Areas Management

Protected areas management in the Southwest Yukon began in the early 1940s. During this time a Game Sanctuary was established out of concern for local wildlife populations being overhunted by the builders of the Alaska Highway (Slocombe 1996). Establishment of the Game Sanctuary did not involve residents of the area and restricted all hunting, both commercial and subsistence (Slocombe 1996). Although hunting was no longer tolerated, mining continued to be allowed in the area, which at the time was categorized as a Game Sanctuary. Mining activities created a setback to designating this area as a national park, as mining is unsuited to this level of protection (Parks Canada 1980). Finally in the 1970s, most of the area in the Kluane Game Sanctuary was designated as a national park reserve and would retain this status until the settlement of land claims could be completed. However, the area that remained Kluane Game Sanctuary is still present on the landscape today (Figure 1).

The impacts of establishing a game sanctuary were felt most by those who relied on the land for subsistence (Yukon Land Use Planning Council 1991). Aboriginal people of the area had been hunting and trapping in this region for generations. Establishment of the Game Sanctuary also impacted their traditional knowledge. "As a result of not being able to use the park, community members could not pass on traditional knowledge of the park lands and resources and their people's history in the area" (Parks Canada 2004, 24).

Shortly after the area gained park reserve status, Kluane National Park Reserve was recognized as internationally significant. In the late 1970s, Kluane National Park Reserve became a World Heritage Site with Wrangell-St. Elias National Park and Preserve in Alaska. In the 1990s, this designation was extended to Glacier Bay National Park and Preserve in Alaska and Tatshenshini–Alsek Provincial Wilderness Park in British Columbia. This World Heritage Site allows for communication and cooperation between Canada and the United States regarding protected areas management.

In Canada, National Parks are established and managed under the *Canada National Parks Act* (Government of Canada 2000). Under this legislation national parks are challenged with having to balance use and protection of natural environments. In order to fulfill this goal, the legislation requires the development of management plans. Three management plans exist for KNP&R, published in 1980, 1990 and 2004. The most recent management plan discusses the important role First Nations play in utilizing the park, cooperatively managing the park, and actively participating in the decision-making process. As previously discussed, the KNPMB is the outlet for cooperative management for this particular protected area. Protected areas management in the Southwest Yukon has gone from no input or participation from the public to cooperative management with

local First Nations. Cooperative management even extends to other jurisdictions including B.C. and the U.S., as KNP&R is part of a World Heritage Site with surrounding protected areas. A study conducted by Danby and Slocombe (2002) outlines the cooperative intergovernmental relationships that exist in greater depth.

A national park is only one type of protected area that exists in the Southwest Yukon. Two others include Kluane Wildlife Sanctuary and Kusawa Territorial Park. An area approximately 3000 square kilometres in size located at Kusawa Lake has been proposed as a territorial park, however, its designation is dependent on the settlement of land claims by affected First Nations (Canadian Parks and Wilderness Society - Yukon Chapter 2006). With its implementation it would be legislated under the *Parks and Lands Certainty Act* (Government of Yukon 2001b).

In 1998, the Territory developed a protected areas strategy in order to represent diverse ecological regions within the Yukon. The Yukon Protected Areas Strategy (YPAS) was guided by principles that recognized various values including environmental protection and resource development (Government of Yukon 1998a). However, this strategy did not remain in operation long enough to apply to the Southwest Yukon. YPAS began to be reviewed immediately following the establishment of Fishing Branch Protected Area in Central Yukon, as those representing both environment and development interests were not content (Yukon Fish and Wildlife Management Board 2001). Finally, the current government in the Yukon placed the YPAS on hold. So even though protected areas are "carefully managed to conserve natural and cultural values" (Government of Yukon 1998a, 4) and are present on the landscape, the road to establishment has not been an easy one and continually faces obstacles.

Various categories of protected areas cover a large portion of the landscape within this region. This matrix of protected areas demands coordination between separate administrative bodies and landscape uses. In this way integration has an important role in protected areas management and a brief overview of this role in described in Table 8. The following chapter provides greater clarification for these examples.

Table 8. Integration in Protected Areas Management Summary

REM Process Elements	Protected Areas Management
Context and Goals	• Promotes regional integration of the surrounding landscapes within park planning and decision-making • Park establishment based on First Nation land claims settlement • Need to balance visitor use and ecological integrity
Scales and Boundaries	• Historical boundaries utilized • Frontier attitude may limit boundary expansion or park establishment
Legislation and Policy	• MOU was signed between the United States and Canada in regards to the World Heritage Site • Management considers First Nations traditional laws
Partners and Participants	• Cooperative management utilized at the National Park level • Current government is not supporting YPAS • Exit surveys used to gauge the opinions of visitors
Information and Knowledge	• Cultural re-integration is an important goal for KNP&R as some of the traditional knowledge of local First Nations has been lost as a result of park establishment • Full and fair consideration to various types of knowledge
Methodology and Technology	• Websites are utilized to provide information about different protected areas within the Territory • Some protected areas have individual websites providing more specific information on park conditions and events • Limited capacity to utilize GIS technology

4.5.4 Forest Management

Forest management in the Southwest Yukon is more recent than the other REM processes. Forests are essential for both wildlife and protected areas management, as the forests provide habitat and increase the landscape's aesthetics. Not only is the forest important to other REM processes, it "has always been important to Yukon people" (Yukon Conservation Society 2000, 1). In the Southwest, local residents utilize the forest for fuel wood, as it is less expensive than other forms of energy (Yukon Land Use Planning Council 1991). Forest resources have also been supplied for "road construction, settlement and mining operations" (Alsek Renewable Resource Council 2004, 9) Although forest consumption does exist in this region, it has been limited. Restrictions on forest utilization are a result of biophysical characteristics such as climate and topography (Yukon Land Use Planning Council 1991). Forests in the region have been threatened by the spruce bark beetle since 1990 and by 2005 approximately 350,000 hectares had suffered damage (Government of Yukon 2006c).

Despite the biophysical limitations outlined above there have been several attempts at forest development. Several documents were developed towards this resource in the 1990s including a *Draft Forest Management Policy* (Government of Yukon 1996), which "did not receive general support" (Yukon Council on the Economy and the Environment 1998, 33), and the Yukon Forest Strategy (Government of Yukon 1998b) which outlines the goals and objectives for managing the forests of the Territory. In 2004 YTG produced, *Towards a Forest Policy Framework for the Yukon* (Government of Yukon 2004c) which attempted to increase communication with local management bodies and expand on forest initiatives that already existed. Gaining authority over forest

resources from the Federal Government has now placed YTG in the position to draft new forest legislation. These documents and legislation were or will be applicable to the entire Territory.

Currently, there is only one forest management plan for the region. A *Strategic Forest Management Plan* (SFMP) (Alsek Renewable Resource Council 2004) was developed specifically for the forest resources of the CAFN TT. The SFMP acknowledges a cooperative effort between YTG and CAFN regarding forest management. Since forest management is a more recent REM process in the Southwest Yukon, managers have been able to seek out other management plans in the region for guidance. Several planning stages have been developed to reflect differing time scales (development through implementation) and spatial scales (CAFN TT to site specific) of forest management for this region. These stages include the development of the Strategic Forest Management Plan; Integrated Landscape Planning; Harvest Development Planning and Site Plans.

Although forest management is the most recent REM process chosen for this study, it provides an ideal example of integrative management. Table 9 clearly shows the large influence integration has had on the way forest resources are managed in this region. Nearly all of the specific elements of integration are supported by a number of examples drawn from this REM process. Further explanation is given for the examples provided below in the following chapter.

Table 9. Integration in Forest Management Summary

REM Process Elements	Forest Management
Context and Goals	• In the Southwest Yukon forest management is only currently active in the CAFN TT • Works towards sustainable forest practices and a balanced approach to management
Scales and Boundaries	• Use of non-overlapping Traditional Territory and sub-watershed units, which may be adjusted pending the settlement of surrounding First Nations land claims • Management plan applies to settlement and non-settlement lands alike • Recognizes the potential impacts on adjacent landscapes • Progressive moves from higher level to site specific planning
Legislation and Policy	• Currently in the process of creating a Forest Act • CAFN and YTG signed a LOU which supports the elements of an integrated approach • Considers First Nation Traditional laws • Recognizes the need to incorporate the values and goals of existing plans for the region
Partners and Participants	• ARRC is the lead cooperative management board • Informal and formal techniques are employed to include partners and participants from working groups, workshops, public meetings, open houses and written surveys
Information and Knowledge	• Utilizes the best available traditional, local and scientific knowledge
Methodology and Technology	• Management plans provide glossaries to increase clarity of concepts • Clearly defines the roles and responsibilities of those partners and participants involved in forest management • Utilizes a website, newsletters and online forum to distribute and accept information from partners and participants • Use of technology is sometimes limited due to incompatibilities and capacity

4.6 Summary

The purpose of this chapter is not to provide a detailed history of the Southwest Yukon, but instead to offer a brief overview of the environmental and social systems, alongside the key initiatives that influence management decisions. REM processes in the Southwest Yukon have faced many significant changes over the years including the settlement of comprehensive land claims and devolution. With these changes provides new opportunities and obstacles for the region.

This chapter and the chapter to follow are closely related. Elements within this chapter, including the management network and information related to the REM processes are applicable and relevant to the following chapter. In order to increase the understanding of the specific results, a sufficient overview regarding the actors involved in planning and decision-making and their relationship with one another was necessary. Furthermore, detailed information regarding recent REM initiatives puts the present research into context. Chapter five focuses on the results for this study where detailed information and examples of integration are provided, alongside the limitations faced during implementation.

5 Assessing Integration in the Southwest Yukon

This chapter provides the results and discussion portion of this study. The findings of this research were directed and shaped around the application of the conceptual framework developed in Chapter three. Documentation and interview data were organized and analyzed with the evaluative framework outlined in Chapter Three. Results and discussion regarding the specific elements and broad themes of the conceptual framework in the Southwest Yukon are provided, followed by the barriers to integration experienced in this region.

5.1 Definition of Integration in the Southwest Yukon

During the initial stages of this study a preliminary definition of IREM was developed from the literature in order to provide some understanding to participants. That definition was:

> IREM draws on and integrates various forms of knowledge, information, disciplines and technology, alongside collaborative efforts with governments, agencies and sectors, to foster improved management.

In order to create a more refined and consistent definition, management documents, plans and policies that identify the use of an integrated approach were examined. Key documents refer to integrated management, but have varied definitions. The definitions of integration and integrated approaches drawn out of these documents have been summarized below (Table 10).

Developing a definition of integration also required the interviewees to provide their own interpretations. Participants of the study supplied various meanings for the concept with general comments including the need to recognize competing interests,

Table 10. Definition of Integration in the Southwest Yukon

Document	Definition
Integrated Resource Management Implementation Strategy	"IRM can be defined as a way of using and managing the environment and natural resources to achieve sustainable development. The IRM approach means that environmental, social and economic issues are considered, while finding ways for all uses to exist together with less conflict. Management of the various natural resources is complex and that there are links between the resources. How we manage or use one resource affects the management of use of other resources... IRM focuses on the efficiency and effectiveness of the decision-making process as well as integrating resource management at the landscape level" (Government of Yukon 2004d, 1).
Yukon Land Use Planning Council	"A resource management philosophy that attempts to coordinate a broad range of values by finding interconnections among values, common goals, and key elements to focus on. IRM is characterized by strategies to blend and integrate uses, by attempts to use resources to meet economic, social, and ecological aims, and by the use of participatory decision making" (Yukon Land Use Planning Council 2001, 6)
Champagne and Aishihik Strategic Forest Management Plan	"A holistic approach to resource management that entails the management of two or more resources (e.g. water, soil, timber, pasture, wildlife and recreation) and that integrates the values of the community into the design of policies or projects to use and sustain these resources in perpetuity" (Alsek Renewable Resource Council 2004, 62).
Kluane National Park Management Plan	"Regional Integration is a [Canadian Parks Service] policy commitment to ensure that the surrounding region is considered in the management and operation of a park" (Parks Canada 1980, 37).
Yukon Conservation Strategy	"Particularly in areas where there is competition for resources, it is essential that management of resources be well integrated and undertaken in a cooperative manner with local residents. In practical terms, this means that wildlife, forestry, land, water and other resources managers work on management activities together, not in isolation" (Government of Yukon 1990, 66).

having managers on the same page, bringing together different knowledge bases, efficiency, a mindset, and a way of making decisions. Several interviewees agreed that the definition provided to them was sufficient, where two other participants provided their own interpretation:

"...a process of actively identifying liabilities and benefits and optimizing across sectors and toward some form of community whole... opposed to a sectoral approach, and there you have the best advantage both to finding problems that always end up costing you more... politically, socially or financially afterward. As well, you also have the best chance of solving those issues and have more problem solving abilities and tools at your disposal..." (X).

"...integration is all about the people and the people's interest and having them at the table to discuss and come up with a balanced approach" (P).

The interviewees' interpretations were consistent with those offered by the key documents listed in Table 10. Both written and verbal interpretations focus on not only a way of thinking, but a specific management process for resources which brings together various participants, their interests and information. It is interesting to note that even though many participants included the integration of information in their responses, two participants (representing YCS and the YFWMB) each provided a definition which focused on the integration of various forms of knowledge in a meaningful and respectful manner.

Within the protected areas management context another unique distinction exists and that is regional integration. Regional integration concentrates on the inclusion of those areas outside the park boundaries in management planning and implementation (Parks Canada 1980). Although this interpretation has emerged out of protected areas management, it can be applied to the other resource management processes. For example, boundaries that are developed for wildlife management should consider the surrounding area. These interpretations establish a broad understanding of integration in the Southwest Yukon. It is also important to understand how the elements of integration outlined in the conceptual framework are applied to this region. The following section

provides specific examples of integration characteristics in terms of the elements of the conceptual framework (Figure 5).

5.2 Conceptual Framework Elements in the Southwest Yukon

5.2.1 The Role of Context and Goals

Current IREM literature suggests an integrated approach is not always desirable, however, most participants in this study agreed that it is for two reasons. First, several participants believed integration is important with regard to the inclusion of First Nation Governments in decision-making. Second, integration was identified as desirable in order to support balanced, holistic and informed decision-making. A participant from the YLUPC commented on the demand for a more precise approach to decision-making.

> "...in a place like Yukon we do have quite a bit of collaboration at the staff level across different management agencies... But we need to somehow make the leap from that, to a... rigorous way of making land use decisions in an integrated manner".

Together these reasons address those partners and participants included in decision-making and how decisions should be made.

One representative from YTG-DEMR made an important distinction about desirability, and that it depended on the reasons for wanting to integrate.

> "... [if] integration means slip shod service so that the client gets their permit faster then I don't think integration is desirable. If integration means that we do better planning, that better accounts for values... and results in better plans that result in... better returns to the public over time, then... it would be desirable".

> "Sometimes something is really important and it's so important that you're not going to water it down for anything else".

Desirable or not, several participants suggested that there are instances where integration may not be possible. A YTG-DEMR participant explained that prior to devolution an

integrated approach could not exist with uncertainty over rights. Another participant representing YTG-DEMR felt the territorial government now having decision making authority over resources is a substantial change and that "integration is now theoretically possible because all the resources are under one roof". A participant from the YLUPC suggested integration is more feasible after devolution, as management is now mainly with local governments (e.g. First Nations and YTG). For YTG participants, devolution has played a larger role regarding their responsibility for REM than other partners involved. On the other hand, one participant from YTG-DOE suggested devolution only alters the government agencies that are involved and noted that land claims have created significantly more important changes. Additionally, a participant from Environment Canada noted cooperation is 'personality driven' and could have been successful prior to devolution if those involved were willing.

Although devolution of REM authority was completed in 2003, documents produced prior to the transfer had anticipated it. Even as early as 1985, there were documents outlining how both devolution and land claims agreements would require the government to "design new, reaching co-operative management programmes" (Government of Yukon 1985, 3). Slocombe et al. (2005, 225) argue that devolution and land claims taking place concurrently, "offers an unprecedented opportunity for implementing collaborative, participatory management, building on indigenous knowledge, and integrating and linking environmental management activities such as environmental assessment and land use planning, which are usually separate". A participant from the YFWMB described that since devolution was anticipated in Chapter 16 of the UFA it has only helped fulfill the Board's mandate now that it has been

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accomplished. Additional benefits of devolution outlined by participants include the clarification of roles, increased territorial accountability, accessibility, and the opportunity to develop new legislation.

Integration may not always be feasible in every situation and there may be times when only partial or limited integration can be achieved. Considering the varying degrees of integration, continuums can be established. For example, high risk conditions require a greater degree of integration as consequences can be severe, where as in situations that are perceived as low risk may not have the time available to address every concern that arises (Parks Canada participant). For example, a major pipeline development could be perceived as high risk which would require a great deal of input and information from various partners and participants. On the other hand, extending a hiking trail by 500 metres could be perceived as low risk and would not require the same degree of input and information. This continuum is also reflected in the degree of public involvement regarding environmental assessments, where "levels of public input increase with the complexity of project proposals..." (Government of Yukon 2004g, 2). In the literature review Hooper et al. (1999) and Margerum (1999a) provide continuums addressing the various ways in which integration could be applied. Situations such as those found in the Southwest Yukon provide additional examples of continuums which demonstrate the varying degrees of integration.

Integration must consider the cultural perspectives that exist in the Southwest Yukon. A CAFN participant explained that integration is not only about bringing together everything that is possible, but also a way of thinking for First Nations and recognizing 'cause and effect' relationships when making decisions. A participant from Environment

Canada discussed the First Nations' perspective as holistic. Duerden et al. (1996, 121) outline the Aboriginal peoples' perspective as "integrated and interdependent". A study conducted by Natcher et al. (2005) outlines the cultural differences that exist between First Nation and non-First Nation representation on a RRC in the Little Salmon Carmacks Traditional Territory which overlaps the CAFN TT to the north. Many First Nations in the Southwest Yukon maintain traditional lifestyles, which may involve activities like subsistence hunting. These activities have been constitutionally established and must be included in the planning process.

One common theme for integration identified from the literature review was that of sustainability. Sustainability can exist within organizations, for example, YCS was described as an NGO that strives for social and environmental sustainability (YCS participant). The YCS website supports this idea and suggests that YCS is an organization "[working] towards solutions that support sustainable communities and sustainable economies" (Yukon Conservation Society 2006). Many management plans that apply to the Southwest Yukon also support this concept with examples regarding sustainable wildlife populations, sustainable forests, sustainable tourism, sustainable heritage or simply sustainable development. Even legislation including the Yukon *Environment Act (5)(1)(c)* (Government of Yukon 2002b) is committed to sustainable development. With management plans and legislation identifying sustainability as an important component, it was interesting that not one participant mentioned sustainability in their initial definitions of integration. Participants were then asked if they thought an integrated approach would help foster sustainability. Several participants agreed that an integrated approach to REM should help foster sustainability, while two participants felt

that they are related but not dependent on one another, and finally a few comments were made about what would be sustained and how it would be sustained. Defining sustainability is a difficult task in itself, and unless a consistent definition is accepted and indicators are developed to monitor its success, any commitment to it may be ineffective.

One participant discussed how definitions of sustainability could be chosen solely based on a person's needs. However, this can pose significant challenges to methodological integration. If each plan or program utilizes a different definition for a concept, then the management of that particular resource or environment may result in conflict. Table 11 outlines definitions found in legislation and management documents that address sustainability. Most definitions are fairly similar, recognizing current and future economic, social and environmental needs. Some definitions are put in the context of the resource they are managing. Providing a glossary will potentially increase the understanding of terms by those reading the management documents and legislation, and thus increase methodological integration.

Integrated planning and management strives to achieve a number of objectives in addition to sustainability. Several participants commented on the increased efficiency that an integrated approach may provide (Environment Canada; YTG-DEMR (2); Parks Canada; YLUPC). IRM is a way to "avoid gaps, duplication of effort, or competition between one management policy and another" creating greater efficiency (Government of Yukon 1988a, 186). A YTG-DOE participant suggested that the YTG's IRMIS is a way to prevent conflict between the development and environmental agencies during the permitting process, as conflicts can arise if resources are viewed separately. An integrated approach is an alternative to sectoral management (YTG-DEMR participant). A YTG-

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DOE participant suggested that the *Yukon Conservation Strategy* supports integration,

and the document outlines it "is a way of looking at our resources as an integrated whole"

(Government of Yukon 1990, 5).

Table 11. Definitions of Sustainable Development in the Southwest Yukon

Document	Definition
Champagne and Aishihik First Nations Final Agreement	"Sustainable Development means beneficial socio-economic change that does not undermine the ecological and social systems upon which communities and societies are dependent" (Government of Canada et al. 1993a).
Environment Act	"Sustainable development means development that meets present needs without compromising the ability to meet the needs of future generations" (Government of Yukon 2002b).
Yukon Conservation Strategy	"Sustainable development means using our natural resources to meet our economic, social, and cultural need, but not depleting or degrading these resources so they cannot meet these same needs for future generation" (Government of Yukon 1990, 5).
Integrated Resource Management Implementation Strategy	"Sustainable Development is defined as *"Development that allows people to meet the needs of the present without compromising the ability of future generations to meet their own needs"*. It can also be described as a balance between a healthy environment, strong economy, and social well being or social equality" (Government of Yukon 2004e, 6).
Yukon Forest Strategy	"Sustainable forest management ...the management of our actions on the land in a way that respects and conserves the ability of the forest to grow and renew itself, and the diversity of life forms that rely upon the forest, over the long term" (Glossary) (Government of Yukon 1998b).
Champagne and Aishihik Strategic Forest Management Plan	"Sustainable (forest) development: The development of forests to meet current needs without prejudice to their future productivity, ecological diversity or capacity for regeneration" (Alsek Renewable Resource Council 2004, 64).
Champagne and Aishihik Strategic Forest Management Plan	"Sustainable forest management: An evolving forest management concept that maintains and enhances the long-term health of forest ecosystems for the benefit of all living things, while providing environmental, economic, social and cultural opportunities for present and future generations" (Alsek Renewable Resource Council 2004, 64).

5.2.2 Integration Across Scales and Boundary Definition

Space and scale play a particularly important role in how the landscape is perceived in the Yukon. The Yukon, like other northern regions, is often thought of as a frontier land with neverending wilderness and wildlife. The frontier image of the Yukon has diminished over time. For example the Yukon Conservation Strategy explains that, "we have assumed our population and economy can continue to grow as if there are no limits. Nature itself is quickly challenging this assumption" (Government of Yukon 1990, 7). Another example was drawn from the GKLUP (Yukon Land Use Planning Council 1991, 4) which stated that "the notion of the Yukon as a frontier is no longer widely held by residents" and that management is moving away from the "historically exploitive approach" towards "a more integrated approach".

An integrated approach is seen as appropriate for this area due to the wide variety of pressures placed on the land. With such a range of uses "the Yukon wilderness no longer seems so vast" (Yukon Conservation Society 2000, 2). A participant representing the YFWMB also alluded to this changing perception and explained that the settlement of land claims has now filled the spaces, which were thought of as vacant, with the people who know and utilize the land. However, a frontier outlook may still remain and possibly pose some struggles for the establishment of protected areas. One representative from Parks Canada suggested that perhaps the Yukon still maintains a frontier attitude similar to that of many parts of Alaska. According to a participant from Environment Canada, Yukon people may have difficulty understanding why we need to create protected areas when there appears to be endless wilderness. With this view the landscape may appear at

a larger scale than actually exists, which can create a "false sense of security" (YFWMB participant).

The Southwest Yukon is somewhat misleading in terms of space. The GKLUP describes the region as large in terms of square kilometres, but the areas accessible for development are limited (Yukon Land Use Planning Council 1991). A participant from CAFN also described a scenario where the scale of forest development can be misleading. For example, at the Traditional Territory level there may only be perhaps 20% of the forest that will be harvested after mitigating for non-timber values, but the majority of the harvestable timber could be concentrated in a single subregion. So a situation that seems minimal at the Traditional Territory level could have larger impacts at site-specific scales.

The YTG IRMIS suggested that integrated planning should occur at all spatial and temporal scales (Government of Yukon 2004e). YTG participants that spoke to this initiative also supported this idea, however, the process has yet to reach that stage of development. According to a YTG-DEMR participant, the program thus far has been focused on internal restructuring, as the Yukon Government is currently fragmented. The GKLUP outlines this fragmentation by stating, "the land regulation structure in the north is sectoral, inefficient, and not appropriate for dealing with highly integrated land use questions" (Yukon Land Use Planning Council 1991, 4). Once the internal fragmentation of YTG is addressed, other governments and interest groups will become involved (YTG-DEMR participant). Other management strategies, plans and policies that are currently being developed have to acknowledge this fragmentation and be adaptive to changes that will be made.

Land use planning can influence methodological integration, as the purpose is "to have a consistent, reliable, equitable process that enables broad participation" (Yukon Land Use Planning Council 2002, 2). Land use planning will not become active in the Kluane Region until all local First Nations settle their land claims (Yukon Land Use Planning Council 2002). Even with an inactive land use planning process in the Southwest Yukon, learning from the experience of other regions could benefit the Kluane Region.

The implementation of regional land use planning in the Southwest Yukon could increase the success of regional integration of protected areas that are present. Slocombe (1996, 381) suggests that "achieving [integration of protected areas into broader land and resource planning] is closely linked to the general success of integrated regional and/or environmental planning in the north". Regional integration is a way that protected areas strive to be incorporated into the broader landscape. A participant from YTG-DEMR commented that by establishing a border around an area or for an initiative, consideration must be given to the conditions of all areas surrounding the border. Management planning for KNP&R has gradually increased its focus on regional integration. In the 1980 management plan, there was limited mention of regional integration. However, one management strategy was dedicated to "complementary" regional planning on lands adjacent to the protected area and suggested that a cooperative approach to implementation should be utilized (Parks Canada 1980, 40). A decade later, the 1990 KNP&R management plan supported the regional integration management strategy outlined in 1980. The 1990 management plan addressed more specific direction for

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complementary and cooperative efforts with sectors including tourism development and wildlife conservation, as wildlife is not restricted by the political boundaries of the park.

While regional integration was promoted in the 1990 KNP&R management plan (Environment Canada 1990), it acted as a transition document for the current management plan. The current KNP&R management plan has an increased focus on managing the area as an ecosystem and for ecological integrity (Parks Canada 2004). A representative from Parks Canada outlined that many of the biodiversity concerns are associated with only a fifth of the park, as 80% is covered in glacial ice and rock. Despite the limited amount of land related to biodiversity concerns, the management plan continues to support "regional cooperation and integrated planning" for the preservation of ecological integrity (Parks Canada 2004, 22). A cooperative and integrated approach is particularly important when activities that occur outside of the park can have direct or indirect impacts on the park interior. The 2004 KNP&R management plan addresses these stressors at a variety of different scales including local, regional and global.

KNP&R continues to play an important role in the management of the greater landscape, even when the activities are not within the park itself. For example, forestry is not a compatible use within KNP&R, yet the SFMP has included the protected area within its planning region.

As outlined in the literature review, establishing borders and boundaries can often be a difficult task. However, Slocombe (1998b, 34) has previously outlined examples taken from the Greater Kluane region as representing "good practice in defining management units". Currently, the boundaries in the Southwest Yukon have maintained their importance as effective management units. Traditional Territories of the First

Nations have provided the region with meaningful boundaries, to those who live within the Traditional Territories, the Southwest Yukon and the Yukon Territory.

In terms of using flexible units or multiple ways of defining units, forest management in the CAFN TT provides an excellent example. Currently, forest management is based on areas within the CAFN TT that do not overlap with surrounding First Nations Traditional Territories. The SFMP describes the possibility of modifications to the management unit depending on the boundaries that are identified out of neighbouring First Nations land claim settlements. With the settlement of land claims, there may also be future opportunities to extend forest management into the overlapping sections if agreements can be reached between the First Nations. Although the SFMP utilizes the non-overlapping portion of CAFN TT as the broad management unit, alternative management units, loosely based on existing watersheds, are created for more specific planning areas.

Wildlife management plans also apply to settlement and non-settlement lands alike, but the boundaries of the AIWMP partially overlap with the Kluane and Little Salmon/Carmacks First Nation Traditional Territories. Rather than utilizing the calendar year, the time frame for management coincides with the 'biological year' of wildlife. The AIWMP utilized this time frame, rather than the calendar or fiscal year, in order to create "greater consistency between population and harvest monitoring information" (Government of Yukon et al. 2000, 4). Over time wildlife management units may shift if wildlife finds more suitable habitat. Thus, wildlife management requires flexible boundaries.

Traditional Territories are management units that have been established out of comprehensive land claims. These existing units have influenced the creation of other broad management boundaries including land use planning regions and environmental assessment district boundaries. By utilizing existing boundaries, some general consistency can be maintained.

Whether the boundaries are based on protected areas, wildlife habitat or migration routes, First Nation Traditional Territories or land use planning regions, they have to be operational. The boundaries of protected areas in the Southwest Yukon are still in flux as land claim settlements are not complete. When land claims are settled the boundaries of the KNP&R will be finalized and create the management unit for Parks Canada. Traditional Territories also become operational with land claims settlements. Wildlife management units are more complex. It is up to the partners involved in the planning process to determine and uphold the boundaries that will be utilized. For this region, the operational aspect of management unit definition was described as "the least well done; although the protected area and land claims related units are changing this" (Slocombe 1998b, 34)". Developing a plan, such as SFMP, which utilizes the First Nations Traditional Territories as a boundary provides increased support and improvements for this aspect of management unit definition.

Finally, when defining management units it is important that higher levels of management continue to be involved with the lower levels (Slocombe 1998b). In the Southwest Yukon, cooperative management boards including the RRCs and the YFWMB are excellent outlets for active cooperation, coordination and communication between management levels regarding renewable resource planning.

5.2.3 Integration of Policy and the Role of Legislation

Policy integration is actively pursued throughout the strategic level in the Southwest Yukon. Participants from CAFN acknowledged that policies should recognize the goals and objectives set out by other programs that are already established for the region. In Chapter 11 of the Champagne and Aishihik First Nations Final Agreement (11.2.1.2), it states that the land use planning process should

> "be linked to all other land and water planning and management processes established by Government and Yukon First Nations minimizing where practicable any overlap or redundancy between the land use planning process and those other processes". (Government of Canada et al. 1993a, 133)

One outcome of the land use planning process is a strategy for the region, and according to the Champagne and Aishihik First Nations Final Agreement (Government of Canada et al. 1993a) any sub-regional plans that are developed subsequently should comply with the higher level plan. Although the land use planning process outlined in the UFA (11.2.1.1) is not currently active in the Southwest Yukon, this form of integration will apply when the process is initiated. A participant from the YLUPC discussed how the planning process is "hierarchical" and that the Yukon has several lower level plans "which may not be contributing to ... what you want at the bigger picture". This requires more regional plans that can be utilized for strategic guidance.

In the Southwest Yukon the GKLUP (developed before the current YLUPC process) provides guidance and strategic direction for lower level planning in the region including wildlife, forest and protected areas management. However, the GKLUP "recommendations are not legally binding on any of the parties who participated in the process" (Yukon Land Use Planning Council 1991, 4-5). A policy document without legislative backing will only be as strong as the partners and participants involved in the

process (Johnson et al. 1996). Even though not all the partners involved officially endorsed the GKLUP, the goals and objectives still provide strategic direction for plans including SFMP. The SFMP is also directed by the Champagne and Aishihik First Nations Final Agreement (17.5.5.2) (Government of Canada et al. 1993a) which outlines that forest management plans should incorporate both an "integrated and balanced approach". Without strategic direction or consideration of the goals and objectives of existing documents, conflicting interests may surface.

Higher level planning was also discussed by a YTG-DEMR participant as allowing for more straightforward integration than lower level planning. Several participants discussed the significance of detail when developing management strategies. Higher level plans were explained to have less detailed information than those at the lower level. A good example was provided by a participant from YTG-DOE, where the level of detail a Yukon biologist would provide to a territorial map would be much more general than a community would provide to a map of their Traditional Territory. Although the level of detail in the two plans might be completely different, they still provide two different, useful perspectives on the same issue.

Legislation is not limited to supporting and directing management plans and strategies, it also plays a role in identifying the responsibilities of partners. In the Southwest Yukon, First Nations Final Agreements outline the roles and responsibilities of cooperative management boards including the RRCs, YFWMB and KNPMB. The RRCs, YFWMB and KNPMB all have legally mandated responsibilities for their respective resources and often work together as these REM processes interconnect with one another. Although legislation is a more formal document, it does not outline specific interactions

between partners. A letter of understanding (LOU), memorandum of understanding (MOU) and terms of reference (TOR) are less formal documents than legislation and are appropriate for outlining detailed relationships between partners and participants.

Forest, wildlife and protected areas management all utilize LOUs or MOUs. A LOU was signed in 1998 for fish and wildlife management (Government of Yukon et al. 2000), as well as forest management in the CAFN TT (Wortley et al. 2001). In general, both LOUs are very similar in nature and the principles outlined support the elements of an integrated approach. For example, these LOUs attempt to create an atmosphere that supports increased cooperation between partners through sharing financial resources, information and "technical expertise"; and between communities through their active involvement and transparency. Transparency was identified as a fundamental aspect of integration (YCS participant).

In 1998 a MOU was signed between Parks Canada and the United States National Parks Service (Sandwith et al. 2001, 85) to support both "co-operation and co-ordination" between the two organizations. This agreement applies to KNP&R as it is part of a World Heritage Site and has been identified as an area of priority for cooperation. Cooperation under this MOU is similar to in the CAFN TT, including but not limited to information, resource and technological sharing. All three documents leave the option open for renewal and provide supportive documentation for integrated planning in a more formal way. Informal interactions exist between partners and participants, however, these are discussed elsewhere in the thesis (sections 5.2.4 and 5.2.5).

5.2.3.1 Streamlining Procedures

As previously mentioned, several participants identified that an integrated approach should create efficiencies. For example, integration may create a more streamlined decision-making process. A participant representing the YTG-DOE discussed how the purpose of the YTG IRMIS was to create more efficiency at the permitting stage. One of the six goals of the Strategy is "integrating and streamlining resource management decision making process" and a review will also be conducted to develop ways to create a more efficient permitting process (Government of Yukon 2004e, 3). Although streamlining procedures can provide benefits of both time and money to decision-makers and developers, a participant from the YLUPC felt that creating efficiencies may lead to a reputation which welcomes growth. Regardless of the political stance on development, all projects that may have adverse effects on the environment must undergo an environmental assessment.

Environmental assessment is a tool that can be utilized during the permitting process. Environmental assessment provides recommendations about development, whether it should be approved, approved with conditions or declined. Permits generally are conditional upon a successful environmental assessment. In the Yukon, *YESAA* creates a single environmental assessment process as it applies to crown, public and settlement lands, as well as fulfills all the requirements for *CEAA*. During the transition period from *CEAA* to *YESAA* an agreement was signed, *Canada-Yukon Agreement on Environmental Assessment Cooperation*, to create efficient environmental assessment for both decision makers and developers (Government of Yukon 2004a). The *YESAA* procedure could not be evaluated at the time of this study as the process was not yet fully

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implemented, thus no environmental assessments had been conducted under its process and rules.

5.2.4 Integration of Partners and Participants

In the Yukon, broad terminology such as stakeholders is being broken down into partners and participants.

"We don't actually use the word stakeholders anymore in our lingo, we use plan partners and participants".

Partners were described as those who are mandated to be in the planning and decision making process. Broad partners include RRCs, YFWMB, First Nations, YTG and Federal Government. Among those partners exist specific departments, branches or agencies that may have interest in a particular planning activity, for example Department of Heritage Lands and Resources (CAFN), DEMR and Parks Canada. Participants include, but are not limited to the public, communities, outfitters and trappers, industry and NGOs (e.g. YCS). Interviewees for the most part provided a consistent list of partners and participants. However one interviewee from the YESAB Office identified the importance of representation for the environment. Furthermore, academics and researchers were also identified as indirect participants. The main relationships between these partners and participants were previously outlined in the management network (Figure 6). However, the management network does not provide detailed information on the ways in which these partners and participants are included in management planning and decision-making.

Management plans and supplementary papers that apply to the Southwest Yukon have identified several ways in which partners and participants are involved in the

planning process. Partners often contribute in a more formal way, such as cooperative

management. Cooperative management exists for forest, wildlife and protected areas

management and has been deemed successful and operational in the Southwest Yukon. A

participant from the YTG-DEMR states:

> "...a form of "co-operative management" works up here in operation... I would
> say that it's alive and well ... that's the perfect avenue for integrated thought in
> my mind".

A representative from YTG-DEMR suggested that cooperation exists at the planning

level and it will also exist through environmental assessment with the implementation of

YESAA, but it is lacking at the permitting and enforcement levels. This explanation was

attributed to independent government bodies having jurisdiction over separate lands. A

YTG-DOE interviewee explained how separate management plans for each government

body with dissimilar objectives will not be successful. Instead the interviewee suggested

having a single plan in which all partners and participants work towards. In the

Southwest Yukon government bodies would implement management plans separately on

lands within their jurisdiction, even if they were built together. For example, a

representative from YTG-DEMR discussed how the SFMP was developed to guide YTG

and CAFN implementation which would take place in their respective jurisdictions.

Another example is the AIWMP, where partners and participants came together to

identify problems, discuss solutions and identify common goals and objectives. However,

the actions that were developed for this plan were divided up between the partners. The

experiences with decision-making in the Southwest Yukon could be categorized as

exemplifying cooperative administration, which is one dimension of Margerum's (1999a)

matrix (Figure 3).

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Although the situation in the Southwest Yukon is categorized as cooperative administration, it exists on a continuum allowing for the presence of coordinative elements. For example, both YTG and CAFN must coordinate on the development of a yearly implementation report for the SFMP (Alsek Renewable Resource Council 2004). With the AIWMP example, there is a 'lead' partner that is to take charge of a particular action, but the plan also outlines secondary partners where applicable for several individual actions. According to a YTG-DOE government interviewee, outlining actions is one way in which partners' values, concerns and ideas are included. Actions also describe the roles and responsibilities of partners throughout the implementation and monitoring process. Transparency increases with the presence of actions in the plan, as it shows who is responsible for what and the time frame for implementation.

Various levels of government and management bodies can also be brought together through technical working groups. Technical working groups are a way to distribute and fulfill the multiple objectives that are often developed out of management plans or strategies. For example, the SFMP has several technical working groups including resource assessment, economic development, fire abatement, research and monitoring, as well as communication and education. All levels of government (First Nations, Federal, Territorial and Municipal) together with the ARRC have varied representation on these working groups. These groups each have their own assignments, such as the development of supplementary plans to the SFMP (Alsek Renewable Resource Council 2005). Technical working groups have the ability to establish direct relationships with participants, for example, the Research and Monitoring Technical Working Group has a member from YCS. Technical working groups can also connect to

additional participants and the general public. A representative from the ARRC described how members of these working groups engaged in public meetings and utilized break out sessions.

Participants are often involved in planning and management in less formal ways. The most common tools identified in this study that bring participants together with partners were workshops, open houses and meetings, as well as the incorporation of written and verbal comments from those who may not be able or willing to attend public forum events. However, this does not mean their participation is less meaningful. On the contrary, having input from participants assists the partners in making well-informed and well supported decision. A CAFN participant stated that the local people are given the highest priority. Citizens are also placed at the top of the CAFN management network, which supports their prioritization (Champagne and Aishihik First Nations 2006). Furthermore, a few participants suggested that communities are more likely to support or buy into the decisions that are being made if their input has been considered.

The literature suggests that a hybrid of top-down and bottom-up approaches is essential for the successful development and implementation of an integrated process. Several participants in this study also identified the necessity of a hybrid approach to integration. Having support from the top, whether it is through legislative support or political commitment is just as important as having support from those who are affected by the decisions being made.

5.2.5   Integration of Information and Knowledge

A phrase similar to 'using the best available scientific, local and traditional knowledge' is utilized in management plans including the SFMP, AIWP, Yukon Forest

Strategy, AMMP and YPAS. It is common sense to want to use the best information available from many sources, thus making decisions as informed as possible. From this statement three sources of information and knowledge can be identified.

Scientific knowledge is often information collected by researchers using very specific qualitative or quantitative methods. Local and traditional knowledge cannot be collected and managed in quite the same fashion. First it is important to note the distinction between local and traditional knowledge. Participants felt that local knowledge does not go as far back in history as traditional knowledge. Local knowledge is based on community with a limited duration, as Europeans have only been in the area for approximately the last 100 years. Traditional knowledge goes much further back than that, since it is based on generations of experience on the land. Participants also suggested that one difference between local and traditional knowledge was those who possess it; the former being non-First Nation and the latter being First Nations. However, a participant from the YFWMB suggested that there is some overlap between the two, as both types of knowledge are based on observations, conversations and experience.

A distinction was also made between traditional knowledge and oral history, where oral history is related to the way in which First Nations live and the traditional laws that outline whether actions are permissible or not. Natcher et al. (2005) provides a discussion around the relationship between First Nation members and the environment. Natcher et al. (2005, 245) outlines that "the relationship that First Nation representatives share with the environment is one manifestly bound in shared norms and customs". Traditional laws play an important role in REM in the Southwest Yukon. For example, the ethical treatment of animals must be considered in wildlife management activities

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(CAFN participant). Furthermore, the management of forest resources "shall consider the application of First Nations' Traditional laws and customs" (Alsek Renewable Resource Council 2004, 55).

In the Southwest Yukon there is an increasingly important presence in REM from First Nations and local community members with meaningful knowledge of the land. Cooperative management boards, such as the YFWMB, are mandated to incorporate different types of knowledge (YFWMB participant). Several pieces of legislation support the inclusion of local, traditional and scientific forms of knowledge and several examples are outlined in Table 12.

Table 12. Legislative Support for Traditional Knowledge

Legislation	Section
Environment Act	5(1) The objectives of this Act are (f) to fully use the knowledge and experience of Yukon residents in formulating public policy on the environment; 53(1) In the administration of this Act, the Minister shall (c) use the knowledge and experience of Yukon First Nation members; (Government of Yukon 2002b)
YESAA	(2) The purposes of this Act are (g) to guarantee opportunities for the participation of Yukon Indian persons—and to make use of their knowledge and experience in the assessment process; 39 A designated office, the executive committee or a panel of the Board shall give full and fair consideration to scientific information, traditional knowledge and other information provided to it or obtained by it under this Act. (Government of Canada 2003)
Champagne and Aishihik First Nations Final Agreement	11.1.1 The objectives of this chapter [Land Use Planning] are as follows: 11.1.1.4 to utilize the knowledge and experience of Yukon Indian People in order to achieve effective land use planning;

Table 12-Continued. Legislative Support for Traditional Knowledge

Champagne and Aishihik First Nations Final Agreement	12.1.1 The objective of this chapter [Development Assessment] is to provide for a development assessment process that: 12.1.1.2 provides for guaranteed participation by Yukon Indian People and utilizes the knowledge and experience of Yukon Indian People in the development assessment process; 16.1.1 The objectives of this chapter [Fish and Wildlife] are as follows: 16.1.1.7 to integrate the relevant knowledge and experience both of Yukon Indian People and of the scientific communities in order to achieve Conservation; 17.5.5 When developing Forest Resources Management plans, the Minister and the Yukon First Nations shall take into account the following: 17.5.5.6 the knowledge and experience both of the Yukon Indian People and scientific communities in Forest Resources Management and use; (Government of Yukon 2002b)
Parks and Land Certainty Act	Preamble Recognizing that a primary goal of the Yukon Protected Areas Strategy is to protect one representative core area within each of the twenty ecoregions that are located primarily within the Yukon, and that meeting this goal by the following measures will satisfy the Yukon government's commitment to preservation of representative ecosystems: (e) to establish protected areas based on available traditional knowledge, local knowledge and scientific information (Government of Yukon 2001b)

Not all challenges are administrative. Traditional knowledge regarding KNP&R

has faced other difficulties, such as the refusal of the First Nations' right to practice

traditional activities upon the establishment of KNP&R. However, the rectification of this

situation is underway with "cultural reintegration" being an important goal in the current

KNP&R management plan (Parks Canada 2004, 23). With cultural reintegration the First

Nations of the region will be able to regain and create new knowledge about the land

(Parks Canada 2004).

Integration of different kinds of information was stated as necessary for all

participants in this study. One important reason is all the sources of knowledge can help

fill in information gaps that may exist in other knowledge sets. A few examples are

presented below:

> "...there's never going to be enough scientific knowledge that we can get out of
> books, where we are going to get much of our really good knowledge and
> information is from people who are on the land".

> "If you're going into an area where you know very little, the first thing you should
> do is work with the community and find out what they know... And then if there
> are some information gaps that's when you start doing some of your more
> technical work... Or even more work with the local people to cover these
> information gaps".

> "Formal recorded data on fish and wildlife is incomplete. The knowledge of local
> residents has been valuable in filling some of the gaps in this formal data and is
> playing an increasingly important role in management decisions and priorities"
> (Yukon Land Use Planning Council 1991, 12).

Formal information on local level "environmental land use" is incomplete and local

knowledge can assist in filling this gap (Duerden et al. 1996, 107).

All sources of knowledge can describe different aspects of environmental, social

and economic systems. Members of boards, such as the YFWMB, provide their own

experiences and information addressing a range of topics (YFWMB participant). Reports

can provide information on topics such as the beetle infestations, wildlife populations,

and the health of forests. In the literature, Slocombe (1998b, 35) outlines the importance

of "organizing and synthesizing" existing information in order to develop a greater

understanding of the ecosystem. A document produced by the Research and Monitoring

Technical Working Group for the SFMP outlined the importance of identifying

information that already exists. Once this is established the focus can shift to what

information needs to be collected. For example, the AMMP outlined that maps with more

detailed moose habitat information are required for improved management (Alsek Renewable Resource Council et al. 1997). Information from different disciplines did not seem to be a priority for interviewees, as only one participant (CAFN) specifically addressed the need to draw upon various disciplines. Furthermore, it was mentioned that drawing on various disciplines is not always practical due to the deadlines that exist in the planning process.

Information is provided in many different formats including "oral, maps, text, gut feelings [and] advice". A participant from YTG-DEMR noted that the conversations occurring between people over coffee are a particularly important source of information. Not all of this information can or will be accessible to all partners, participants and the general public, however, the communication of information is growing through the use of newsletters and websites. For example, forest management in the CAFN TT utilizes a newsletter titled Dá Ts' ū (Our Forest) to update people on the progress of forest activities in the region. Dá Ts' ū provides background information on forest practices including definitions and identifies the partners and participants involved in the decision-making process and there contact information. This newsletter can be found on a website dedicated to forest management in the CAFN TT (Champagne and Aishihik First Nations et al. 2006). This website not only provides detailed information on the forest management initiative, but also provides news releases and important documents (e.g. SFMP) in downloadable PDF format. This website also enables two way communication between management and the public, as that site allows comments regarding the forest management process to be posted.

Wildlife management plans including the AIWMP and the AMMP can also be viewed online (Yukon Fish and Wildlife Management Board 2006) alongside additional information on management guidelines for several animal species. Background information and existing activities regarding KNP&R are available for viewing online (Parks Canada Agency 2006), together with the most current management plan which can also be downloaded in PDF format. Finally, environmental assessment information and current projects are available to the public through not only a website (Yukon Environmental and Socio-economic Assessment Board 2006), but also an interactive public registry. Websites offer a way to communicate information in a variety of different formats. Many documents that are provided online are often in a standard file format (e.g. word processor or PDF), which can provide for easier accessibility.

Not all information can be as easily integrated. One drawback to information in different formats is that situations can occur where separate data sets may not be compatible with one another. A participant described how forest inventories between YTG and KNP&R are incompatible as aspects, such as vegetation classification, cannot currently be compared. Not being able to utilize all existing information may limit the choices available to decision makers or perhaps prolong decisions until the situation can be resolved.

YTG is attempting to improve the current fragmentation surrounding the storage and sharing of information. For example, the YTG IRMIS outlines that:

> "successful implementation of IRM will require improvements to communication and information sharing amongst resource managers. Emphasis will be placed on refining its resource management spatial information systems and databases, and develop integrated information and classification systems as well as scientific knowledge (including habitat and biodiversity values) that can more fully inform its decision making process". (Government of Yukon 2004e, 5-6)

Furthermore, in a YTG 2004 news release (Government of Yukon 2004b) both the Minister of Environment and the Minter of Energy, Mines and Resources commented on how the merging of information between ministries supported an integrated approach. The former discussed time savings that would be achieved for both management and development, where the latter stated, "This work will help the government to move forward on developing an integrated approach to resource decision making as a way of doing business in the Yukon" (Government of Yukon 2004b). The DOE and DEMR information bases will assist in the decisions that are made regarding development projects, and also increase openness with partners and participants through the availability of information for those who wish to seek it out (Government of Yukon 2004b).

5.2.6 Integration and Technology

The tools utilized for organizing information varied by organization. For instance, YTG had whole departments organizing and collecting information, where organizations like the ARRC, YFWMB and YCS had limited capacity to do any large scale data collection or analysis. Participants from these organizations explained that their tools were basic, such as the hard drives of their computers, and relied on the various governments to provide them with information they required. This level of integration is limited by an agency's ability to retrieve this information and the availability of data provided by governments. Governments can provide information in the form of reference manuals (YTG-DOE Participant). For example, the reference manual for the AIWMP was "a collection of all relevant information, including scientific, local and traditional knowledge, which was required to understand and verify wildlife management concerns

in the planning area, and to get agreement on solutions and actions in the plan"

(Government of Yukon et al. 2000, 2).

Not all methods of organizing information must be technological in nature. For

instance, a State of the Environment Report is utilized in the Yukon as a means "to

provide an early warning and analysis of potential problems for the environment; allow

the public to monitor progress toward the achievement of the objectives of the

Environment Act; and to provide baseline information for environmental planning,

assessment and regulation" (Government of Yukon 2002c, 2). The first State of the

Environment Report was conducted in 1995, followed by another in 1999 and 2002.

Interim reports were created for 1997, 2000 and 2001.

Furthermore, organizations such as the ARRC, YFWMB and YCS had interesting

perspectives on information organization. A YCS participant discussed the importance of

'information flow' as they are actively communicating with various partners and

participants through telephone calls and the media (e.g. TV and/or newspaper). The

ARRC uses pamphlets, booklets and newsletters. The YFWMB uses similar tools as the

ARRC, however, a participant discussed how an annual meeting out on the land is used

to organize information. This method was described as less tangible than perhaps some

other more technological methods (e.g. GIS), yet it still remains very significant.

Government officials, both territorial and federal, discussed the extensive use of

GIS for organizing information.

> "In terms of organizing the information typically GIS is our primary tool because
> inherently land management issues are spatial in nature...."

GIS is an excellent tool for an integrated approach, as layers representing environmental,

social and economic information can be overlaid and analyzed as a single dataset.

However, GIS is not only utilized for organizing information but also displaying, illustrating and communicating possibilities to a range of partners and participants.

5.2.7 Process Integration

Efforts to be *inclusive* and balance various values, concerns and ideas exist throughout the chosen REM processes. Both management plans and interviewees acknowledged that achieving a mix of economic, social, cultural and environmental benefits is an important objective. For example, protected areas management attempts to balance increased tourism with the protection of environmentally significant areas (Government of Yukon 1998a). Another example, AMMP discusses the need for wildlife management to balance consumptive and non-consumptive use of moose. Next, forest management is challenged by having to balance economic opportunities of timber harvesting with the protection of wildlife habitat (Alsek Renewable Resource Council 2004). Finally, environmental assessment helps to determine whether development proposals have environmental and socially significant impacts (Yukon Environmental and Socio-economic Assessment Board 2006). These REM processes in the Southwest Yukon attempt to incorporate a wide variety of uses, demands and pressures.

In terms of *interconnective*, both the *Yukon Economic Strategy* (Government of Yukon 1988b) and *Yukon Conservation Strategy* (Government of Yukon 1990) recognize that the economic system is directly related to the environmental system, as resource sectors are dependent on the environment for materials and supplies. Social and environmental systems are also linked, where the cultural heritage and practices of First Nations rely on environmental resources (Government of Yukon 1990). Interconnections exist between systems, for example, the development of resources can influence job

opportunities. Interconnections also exist within individual systems, for example, in forest management interconnections among the environmental system are recognized through forests providing habitat for wildlife and supporting soil stability.

An *interactive* element is an important component to REM processes in the Southwest Yukon. Interaction with partners and participants was previously discussed in greater detail (Section 5.2.4). Achieving a balance among multiple, sometimes conflicting uses and demands of varied partners and participants is complex. Some participants discussed the difficulties in determining how to weigh the comments and opinions of those involved. A separate contributor discussed how particular participants should not be given priority over others, where another stated that the local people should take priority. This remains a challenge.

5.2.8 Integration Barriers

The Southwest Yukon is an area with a constantly changing political climate. Since the 1989 election, no political party has been voted in for a second term. Furthermore, the 2002 election occurred only two years after the previous one. A participant from the ARRC discussed how these shifts in political parties are troublesome as each administration has different agendas. This can be particularly problematic for the implementation and maintenance of any management plan or program including those that are integrated. A good example is that of the YPAS. A participant from Parks Canada stated that the Yukon Party practically stopped any further work on YPAS. A Yukon Government 2003 news release stated:

> "Another way the Yukon government is prepared to assist is by restoring a proper balance between economic development and environmental protection. To that

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end, the Premier announced that further work on the Yukon Protected Areas Strategy is being put on hold" (Government of Yukon 2003).

The political party in power states it is addressing the need to have a balanced approach to REM in the Yukon, but stopping all work on the YPAS does not seem to support environmental protection. Although the YPAS is recognized in the *Parks and Lands Certainty Act* (Government of Yukon 2001b) it did not have the legislative or public backing to keep the process operational. Without strong political or legislative commitment, IREM projects become vulnerable to failure. Several participants identified these types of institutional components, such as structure and legislation as barriers to integration. For example, a participant from the YLUPC stated that the 'legislative tools' that are required for integrated decision-making do not currently exist. Even the existing legislation that does support an integrated approach, for example the Yukon *Environment Act (5)(65)* (Government of Yukon 2002b), is outdated and does not reflect current conditions (YTG-DEMR and YLUPC participants).

Experiencing change in representation is not a barrier that is isolated to a political environment. One participant from the YFWMB recognized that both political partners and Board members change over time, along with what they bring to the table. However, terms on the Board have a specific duration of five years, so some preparations can be made. Furthermore, the initial appointments to the Board were issued in various intervals to avoid having all members' terms concluding simultaneously. Insights and experiences may contribute to solutions and alternatives never previously addressed.

Participants from YCS and CAFN identified communication as a barrier. Communication, both between participants and with the public, is particularly important. Communication tools, other than public meetings, that are currently utilized include open

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houses, workshops, newsletters, news releases, fact sheets, websites and the media (e.g. newspapers and television). If the Yukon's relatively small population increases, new communication strategies will be essential in maintaining the current level of participation or creating new opportunities for input from both partners and participants. An interviewee from YCS and another from YTG-DEMR commented on the need for outlets that enable genuine communication:

> "Public meetings tend to be what people do in the Yukon. Well not everyone comes to public meetings, not everyone talks at public meetings. It's only one tool and I think that they depend on it too much".

> "Just doing [public consultation] is the right first step, but I think you need to have real discussions".

A suggestion by a participant from YCS was to utilize focus groups. YCS is involved in raising money to put toward a values focus group. Focus groups are more open discussion about specific topics with smaller groups of people interested in meaningful participation.

Participants noted that time (Parks Canada, YFWMB, ARRC) and timing (CAFN) are barriers to integration. Cairns (1991, 14) also outlines time as a barrier, as "time means money". Integration, whether it is partnership development, participation, information gathering and management, requires time and sometimes there is not sufficient to accomplish everything. Timing is a factor when attempting to bring together all the partners and provide opportunities for meaningful participation, since the summer season is a time when many people take their holidays or are out on the land. A few interviewees outlined that gathering participants and resources from distant locations was sometimes problematic, while one of those interviewees emphasized the financial constraints surrounding flights, meals and other amenities. It is interesting to note that

only one participant directly identified financial constraints as a barrier to integration (ARRC participant).

Capacity for technological applications such as GIS was identified as an issue for some agencies (Parks Canada, CAFN and YESAB Office participants). Without the ability to utilize this and other types of technology, alongside supporting data, managers and decision makers may be limited in the alternatives they have to choose from (Bettinger and Boston 2001). Even though creating partnerships with researchers may increase the opportunity to utilize these options, it was noted that there are time and financial constraints, together with logistical limitations in doing so (CAFN Participant).

Cairns (1991, 14-15) identifies both "turf battles" and "many unwilling to compromise" as barriers to integration. Both organizations and individuals can drive these types of barriers. Personality driven issues were identified by interviewees as barriers to integration and included 'interpersonal relationships', 'turf protection', 'people [who] are already fairly positional', having to '[change] peoples mindsets' and 'knock down perceptions' (CAFN, YTG-DEMR, YTG-DOE, Parks Canada). Mitchell and Pigram (1989, 209) state, "the human dimension, or the personalities and attitudes of participants, can negate the best-intentioned strategies for integrated resource management".

5.3 Summary

The finding of this chapter included specific examples of integration within several REM processes in the Southwest Yukon. From these processes general observations can be made and have been summarized in Table 13.

Table 13. Integration in the Southwest Yukon Summary

Elements	Integration in REM in the Southwest Yukon
Context and Goals	• Devolution and comprehensive land claims settlement have provided an opportunity for greater integration • Reduced frontierism is creating an atmosphere for integrated management • Integration requires a balanced approach to management • Sustainability is a dominant goal in integrated management documents, but not recognized outright by study participants
Scales and Boundaries	• Integrated management should occur at all spatial and temporal scales • Boundary definition is meaningful as they are often based on First Nations Traditional Territories and flexible as they incorporate other boundary types if necessary
Legislation and Policy	• Legislation and policy are supportive of integration • Several pieces of legislation mandate the inclusion of traditional knowledge • Management documents often acknowledge and integrate the mandates, objectives and goals of separate documents • Higher level planning allows for more straightforward integration as there is less detail involved
Partners and Participants	• Cooperative administration exists, with elements of coordination • Formal and informal techniques are utilized to involve partners and participants in decision-making
Information and Knowledge	• Many initiatives desire to utilize the best available traditional, local and scientific knowledge • All knowledge bases are used to fill the gaps left by the other sources
Methodology and Technology	• GIS was identified as a primary tool to integrate and present information • Several other tools were identified ranging from simple to complex
Barriers	• Changing political climate; changes in board members; communication; time and timing; capacity; personalities of individuals and/or organizations

Documentation analysis and interview data have revealed that integration has a strong presence within the REM processes chosen for this study. Examples were available from all the REM processes to support each of the specific elements of integration as defined by the literature review and conceptual framework. Throughout the analysis it was evident that integration has been influential. The data suggests that the Southwest Yukon has strength in that management initiatives, such as SFMP, recognize the goals and objectives from past and current management documents. Documentation analysis and interview data both provide supporting evidence for the necessary coordination between individual management plans.

Strong integration is reflected in the REM planning documents as many of the goals and objectives addressed sustainability, and the documents outlined the need to be inclusive of partners and participants, as well as the knowledge and interests they hold. These observations are consistent with the IREM definitions provided in section 2.2. Several interviewees also supported the idea that integration in the Southwest Yukon is particularly strong within the planning stages of REM. Integration is not as strong during implementation as there is less coordination and cooperation from various government bodies as they maintain jurisdiction over separate pieces of land.

One weakness observed in this case study of the Southwest Yukon is that the desired level of integration may not always be achieved. For example, one interviewee from Parks Canada described a strong desire to utilize integrative technology (e.g. GIS), however, the human resources are not available. Another interviewee from CAFN discussed the use of modeling tools, but lacked the capacity. Although the intent is there these tools are not always utilized to their full potential.

The application of the conceptual framework in the Southwest Yukon has revealed that integration plays a significant role in the REM processes chosen for this study. By applying the conceptual framework to these REM processes, both the broad themes and specific elements of integration have been addressed. Integration in the Southwest Yukon has influenced both the planning and implementation stages of REM management. Examining integration in these REM processes has resulted in several conclusions about the theory and practice of the concept in the Southwest Yukon. However, the move towards integration in this region has been challenging and will continue to face obstacles. The following chapter responds to the difficulties faced with some practical recommendations.

6   Conclusions and Recommendations

Throughout this thesis information has been provided on the reasoning behind and demand for this research, the existing integration literature, the methods utilized for this study, background information on the Southwest Yukon, the results and discussion, and now the conclusions and recommendations are presented. This chapter reflects back on the primary research goal and objectives outlined in Chapter One and how they were achieved throughout the paper including the lessons learned for the theory and practice of integration in REM. Next, recommendations are offered in response to some of the difficulties that were faced in the Southwest Yukon. Additional recommendations are provided for the focus of future research both within this region and elsewhere. Finally, some concluding remarks for this study are presented.

6.1   Fulfilling the Research Goal and Objectives

The goal of this research was to explore the theory and practice of integration in REM through a case study of the Southwest Yukon. The region was selected as a suitable study site due to its diverse ecological and social characteristics, its long-standing history with REM, and management boundaries that are often based on a range of government levels including the Traditional Territories of First Nations. In order to realize this study's primary research goal, four objectives were generated, each is discussed below.

6.1.1   REM Processes in the Southwest Yukon

The REM processes chosen for this study included wildlife management, environmental assessment, protected areas management and forest management. All of

the selected processes are important to the greater management of renewable resources in the Southwest Yukon and influence the management of one another. Not all processes were included, as they were beyond the scope of this research. However, those that were chosen do have a significant influence on the lifestyles and economies of the region. The REM processes chosen for this study drew upon those with a long-standing history in the region (e.g. wildlife management) and more recent processes (e.g. forest management). These REM processes provided the scope for this study and directed the collection of documentation and the choice of participants to be interviewed. Utilizing these REM processes assisted in fulfilling the remaining objectives of this study.

6.1.2 Perception of Integration in REM Processes

Integration within the Southwest Yukon has been identified as particularly important with reference to the inclusion of First Nations in the REM planning and decision-making process. The utilization of the First Nation traditional territories as management boundaries is unique, compared with the use of watershed boundaries in various locations including Southern Ontario. Another unique factor is that even though there is a relatively low population in the region there is a strong demand for integration, as seen within recent management initiatives applicable to the Southwest Yukon. Population size might be a factor to consider when measuring the degree of integration achieved or the level of success an integrated approach.

Field research has established that the perception of integration is wide-ranging. Integration is thought of as a balanced approach, which will result in more efficient management. Integration must balance the sometimes competing values, concerns and ideas of partners and participants involved in resource and environmental decision-

making, as well as the environmental, social and economic benefits and costs of decisions. An integrated approach ought to produce increased efficiency in the face of increased participation and information. One way of achieving greater efficiency is through streamlining wherever possible.

Integration also contains a spatial element. For example, by illustrating that the actual potential for development is more limited than one would expect for such a vast landscape, support for integrated management may increase. Another example involves regional integration, which is a slightly varied interpretation specific to the protected areas management context. However, the concept is influential on the broader definition of integrated management. Regional integration is an important component of the KNP&R management plans (Environment Canada 1990; Parks Canada 1980, 2004). The activities taking place on adjacent lands are important, as they may have an impact on the area of interest regardless of whether they are local, regional, national or international influences.

6.1.3   The Pursuit of Integration in REM Processes

The implementation of integration is variable. Integration in the Southwest Yukon has been the most active at the strategic level of planning, as many initiatives have yet to be fully implemented, examples being the SFMP and IRMIS. The application of integration in the Southwest Yukon has also been dependent on context. For example, prior to devolution and the settlement of comprehensive land claims, responsibility over the land was in question. Now that the majority of jurisdiction issues have been finalized, management boundaries have become more tangible. Even with the development of several different jurisdictions, many REM strategies are meant to apply to both settlement

and non-settlement lands in the region. Furthermore, both the document analysis and interview data identified that integration is necessary across various scales ranging from the broad to site-specific locations.

Devolution and the settlement of land claims have also increased the level of integration through improved cooperation between partners and participants. Cooperative management established in the Southwest Yukon is operational. The ARRC has made many strides in the development and implementation of REM planning in the region. For example, they have taken a lead role in the SFMP and AIWMP. The YFWMB is actively involved in wildlife management, for example, it facilitates the annual amendment recommendations for the Yukon *Wildlife Act*. KNPMB provides an outlet for cooperative decision-making within KNP&R.

Integration of different policy objective and mandates from existing documents in the region has been a prominent application in the Southwest Yukon, even if they were not officially endorsed (e.g. GKLUP). In addition, streamlining of the Territorial permitting process and information bases is also underway.

The utilization of the best traditional, local and scientific knowledge, and technology available was widely promoted. The most common technology identified during this study for organizing and presenting information was GIS. This technology should continue to be utilized for these purposes as much as possible, as a variety of scenarios can be created through the integration and manipulation of data.

Barriers to integration identified in this study (Section 5.2.6) are similar to those discussed in the integration literature, for example lack of time, personality conflicts, and political limitations. In order to resolve these barriers the Southwest Yukon could draw

on existing studies in the integration literature for potential solutions to these problems. However, some barriers to integration were less common than others, for instance communication and capacity challenges. The Southwest Yukon must respond to these challenges with innovative methods.

6.1.4 Lessons for the Theory and Practice of Integration in REM

Several lessons were learned from this case study that are significant to this region and can influence the integrated management of other regions.

6.1.4.1 Integration is Evolving

After documentation analysis and a thorough examination of interview data, an updated definition for integration was required. There is a need for a new "universally understood definition of the term integrated resource planning" (Yukon Council on the Economy and the Environment 1998, 20). Based on the information that was collected by participants and documents an updated definition has been developed.

> IREM draws on and incorporates various forms of knowledge, information, disciplines and technology, alongside coordinated and cooperative efforts with governments, agencies and communities to foster improved decision-making.

The definitions presented in the literature focus on information gathering and exchange, alongside coordinated and cooperative relationships to address the multiple values placed on resources. Technology, especially GIS, has an increasingly important role in REM concerning the analysis and presentation of data. Given that these factors were also identified as significant in this study they will continue to be represented in the revised definition. In this study utilizing various disciplines was not rated as important as other

factors, however, it is still ideal wherever possible. As such the inclusion of diverse disciplines will remain in the definition.

Aspects of the definition that were changed included substituting collaborative efforts with coordinated and cooperative efforts, as these provide a wider variety of relationships that can exist in integrated management. One critical element that was absent from the original definition was the inclusion of communities. Communities and their members are affected by management decisions and their values, concerns and opinions should be incorporated. Fostering improved decision-making was also substituted for fostering improved management, as the definition for integration should reflect both the strategic and operational stages of REM.

6.1.4.2 Purposeful Sustainability

The inclusion of sustainability in integrated management should be purposeful. Even though sustainability was identified as a common theme throughout the reviewed documents and was determined to be a complementary goal to integration, many participants of this study did not directly identify sustainability as part of the definition of integration. This indicates that sustainability does not add much to the challenge of integration.

Furthermore, despite the overwhelming presence of sustainability in integrated management literature, it is only one of many goals that can be achieved. Choosing sustainability as a goal should be the responsibility of the partners and participants involved in the initiative. If sustainability is to be utilized as a goal for management then it is necessary to develop clearly defined indicators to direct and track progress. Consequently sustainability remains excluded from the integration definition.

6.1.4.3 Conceptual Framework

The conceptual framework developed in this study was successful at providing a basis for the analysis of integration in the Southwest Yukon by pulling together critical components of existing frameworks and recent literature. Resource managers, policy planners and decision makers can look to this framework for guidance when developing and assessing their own management plans, initiatives and policies. The literature calls for greater clarity in theory and procedures for application. The framework presented here provides a basis for theoretical understanding and practical implementation. However, it has also been established that integration is an evolving concept and this framework is likely to change or be replaced in the future. Furthermore, implementation is going to be varied from place to place depending on the context, capacity and need for integration. Instead of standards for implementation, perhaps integration should focus on flexibility.

Any conceptual framework that is developed following this study should recognize the relationship between integration and other REM initiatives. For instance, cooperative management can play an important role in an integrated initiative. Cooperative management provides a way for separate government bodies to develop mutually beneficial plans and policies. Another example is ecosystem and ecosystem-based management. Although the goals for this type of management are often more heavily focused on the environmental system (Grumbine 1994, 1997), others emphasize planning and management elements such as direction for management unit definition (Slocombe 1998b).

6.1.4.4 Good Intentions and Transparency

Integration requires good intentions. The sole purpose of an integrated approach cannot be to increase the efficiency of issuing permits. Environmental protection, cultural values and economic development should all be taken into consideration during the assessment of a project. Although good intentions appear to be an obvious condition for management, economic developments that are profitable may be too appealing to overlook. Cairns (1991, 15) suggests that immediate profits can be a barrier to integrated management.

Focus should also be placed on transparency. Actions that can promote transparency include: having management plans that outline where public meetings were held and how many people attended; how many surveys were mailed out or how many written comments were received; and having documents readily available (e.g. downloadable PDF and paper copy) for those who wish to read or review them. Having open and honest communication with those involved and affected by the decisions should be an important component in any public management initiative.

6.1.4.5 Appropriate Conditions

The conditions must be right for integration to be supported and achieved. Complex environmental problems that require the inclusion of a variety of governments, agencies and communities must exist (Hooper et al. 1999). Those involved must be willing to work together, as the feelings and opinions of individuals can sometimes impede coordination, cooperation and communication. Strong political commitment must exist, which cannot easily disregard integration or integrated approaches if changes occur in government, alongside strong community support, as they are impacted by

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management decision. Furthermore, the financial, human resource and technological capacity to adopt an integrated perspective to REM is necessary.

6.2 Recommendations

Recommendations from this study vary from very simple actions to more complex measures that may be more difficult to achieve.

6.2.1.1 Clarity

The first and most important recommendation is to increase clarity. Being clear and concise about the intent and use of integration as a guiding principle is critical. Whether it is in legislation or regulation, policies or plans, only prescribing the use of integration will not provide enough direction for its use. One way to improve clarity is to provide a definition for integration either in the text of the document or perhaps in a glossary. A definition should be followed by specific goals and objectives for how integration will be achieved. Outlining goals and objectives for integration also increases transparency, which allows for future checks and balances.

6.2.1.2 Time for Change

Although integration is being pursued in the Southwest Yukon, there is an even greater potential for the application of the concept, especially with the changes that have occurred within the last 15 years. Devolution and land claims have provided REM in the Southwest Yukon with the opportunity to become more integrated. With devolution, the Territory has the capacity to create new legislation and update or revoke legislation that used to be under federal jurisdiction to create more consistency across different legislative frameworks. This could be particularly beneficial for the Territorial

Government, since at least "25 different pieces of legislation" guided the management

actions of the federal government in Northern areas (Yukon Land Use Planning Council

1991, 4). One recommendation is to take this opportunity to coordinate different

environment and resource legislation and regulations, while paying particular attention to

pieces deemed outdated (e.g. *Environment Act*). Providing increased support for

integration would be beneficial to both regional and site specific planning processes that

adopt this approach to management.

6.2.1.3   Shifting Perspective

One view of the North is that it is an area filled with wilderness and a never-

ending supply of resources. However, this perspective must change if these areas are to

maintain what is left of their pristine environment. The comprehensive land claims

settlements of local First Nations are assisting in filling the spatial gaps that were once

viewed as vacant. Utilization of the land through their traditions and culture is impacted

by large-scale development. However, GIS should also be utilized to reduce the view of

the landscape as having unlimited capacity for development through its ability to visually

illustrate land use activities on maps. Having the community identify areas of

significance on a map also enables a greater sense of scale, as was the case at a workshop

in Pelly Crossing attended by a YTG-DOE participant. An unlimited sense of space and

scale can be misleading to the partners, participants and public involved in REM.

6.2.1.4   Innovative Communication Strategies

With increased communication between partners, participants and the general

public, it may only be a matter of time before the level of participation becomes

unsustainable. Although public consultations, meetings and open houses, alongside written comments and feedback will still be required in the future, there is a need for more effective and efficient ways of communicating. The environmental assessment process in the Yukon utilizes a public registry to communicate information to those involved in development projects and those with a general interest. Increasing the use of public registries in other REM processes could facilitate opportunities for greater information distribution, however, two-way communication must also be addressed. A suggestion was made in this study to utilize focus groups and a variety of different focus groups (e.g. values related and/or industry related) to solve the communication challenge. Focus groups may provide a more detailed level of communication between partners and participants regarding the issues at hand. One recommendation is to increase not only the number of focus groups, but also to create a greater mixture of topics.

6.3   Future Research

The REM processes selected for this study were concentrated on the renewable resource sector, however, not all processes were considered, including but not restricted to tourism. Future research initiatives should focus on how integration is defined and pursued in other resource sectors not included in this study. With non-renewable resources playing a role in the current and future development of the region, a review of· that sector would also be beneficial. Furthermore, as soon as the land use planning process developed out of the land claims agreement becomes active in this region, an assessment would be able to bring both renewable and non-renewable resource management together.

Considering this research focused on integration from a very broad perspective, future research for this region should address specific initiatives that have adopted an integrated perspective. Integrated initiatives that are in the strategic stages of development including the SFMP and IRMIP will require further evaluation following their implementation to determine if their goals and objectives were achieved successfully. Focus could also be placed on protected areas management with regards to regional integration as it is a very specific form of integration.

The Southwest Yukon provides an additional case study to the broader literature on integration. Future research outside of this case study is required ranging from broad to site specific scales, as well as initiatives based on watershed and non-watershed boundaries. Once additional case studies are conducted, a comparison between them would be beneficial in determining the consistency of the concept and barriers to its implementation.

6.4 Conclusion

With the literature calling for additional case studies, this research responded to that request. The case study provided here complements the current literature and contributes a fuller understanding of the elements of integration and an improved structure for the concept. The structure of integration was improved through a conceptual framework, which was influenced by the existing integration models, as well as field research. This newly developed conceptual framework was applied to a case study of the Southwest Yukon. Drawing on different elements of the framework it can be determined that integration has a significant presence in the REM processes of this region.

Integration is an emerging concept for many recent initiatives, but has also played a role in past management plans, policies and legislation.

Integration has been shown to be an evolving concept that is responding to the needs and demands of contemporary REM problems. Challenges still remain as environmental, social and economic demands on the landscape are on the rise. These demands will only be amplified if the human population continues to increase without reducing our reliance on the environment and its resources. Integration is not the solution for every REM problem that exists and should be utilized in conjunction with other approaches. However, the lessons learned in this study can enhance future integrated initiatives that emerge and provide guidance to resource and environmental managers and decision-makings.

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