An Evaluation of Protected Areas Legislation with Recommendations for the Northwest Territories

by

Patrick Hawkins-Bowman

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The University of Manitoba
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R3T 2N2

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AN EVALUATION OF PROTECTED AREAS LEGISLATION WITH RECOMMENDATIONS FOR THE NORTHWEST TERRITORIES

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ABSTRACT

The purpose of this study was to inform the Government of the Northwest Territories legislative development process with regards to protected areas. Specifically, the objectives were to: select a jurisdiction in Canada which had a broad suite of protected areas options as a case study; to evaluate the strength of protected areas legislation in that jurisdiction in terms of amount of protection provided by the statutes; to consider the interactions between protected areas legislation and mining legislation in the jurisdiction; and, to make recommendations regarding design of legislation and protected areas initiatives in the Northwest Territories.

Manitoba was used as the jurisdictional case study, and the following legislation was examined: The Ecological Reserves Act, The Provincial Parks Act, those sections of The Wildlife Act pertaining to Wildlife Management Areas, those sections of The Forest Act pertaining to Provincial Forests, The Manitoba Habitat Heritage Act, The Conservation Districts Act, and The Heritage Resources Act. Each piece of legislation was evaluated, through comparison to ideal criteria outlined in the literature, in terms of the ecological protection provided to the respective lands. In addition, the interactions between the protected areas legislation and mining statutes were explored to identify exclusions of, or modifications to, general mining statutes in the protected areas. The current application of the suite of protected area tools in Manitoba was categorized quantitatively on the IUCN categorization system, and was compared to similar data available in the jurisdictions of Saskatchewan and British Columbia to allow for a relative evaluation.

Results show that Manitoba's statutes which are worth consideration as models for legislation in the Northwest Territories are the Provincial Parks Act, the Heritage Resources Act, and the Manitoba Habitat Heritage Act. Protected Areas legislation for the NWT does not require the high number of statutes present in Manitoba, but any statutes enacted must meet the maximum level of structural protection as identified in the literature. All areas qualifying in one of the six IUCN categories should be considered for

their contribution to any protected areas initiative, and measureable goals based on the IUCN categories should be set out initially to allow for effective future progress evaluations.

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Without exception, the staff at Manitoba Natural Resources, Manitoba Culture, Heritage and Citizenship, the Manitoba Habitat Heritage Corporation, Manitoba Rural Development, and the various Conservation Districts were exceptionally helpful and cooperative. I am disappointed that more assistance was not provided by Manitoba Energy and Mines, as their cooperation may have contributed to a stronger final product, a more comprehensive evaluation of Manitoba's current situation, and, most importantly, a clear signal that outside participation in Manitoba's Protected Areas process was welcomed by the stakeholders. In fact, participation may be welcomed by the administration, but such enthusiasm is clearly not universally shared by the various civil servants in the department.

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CHAPTER I: INTRODUCTION

1.1 OVERVIEW

1.1.1 Protected Areas Networks

In the *Tri-Council Statement of Commitment to Complete Canada's Networks of Protected Areas* of 1992, the goal of completing Canada's protected areas network by the year 2000 was endorsed by the Canadian Council of Ministers of the Environment, the Canadian Parks Ministers' Council, and the Wildlife Ministers' Council of Canada (Government of Canada, 1992). This commitment followed the federal objective of completing a national system of protected areas outlined in the Green Plan (Government of Canada, 1990). Each jurisdiction across Canada is presently engaged in this process, albeit at different stages and levels of enthusiasm, and none has yet completed the commitments made early in this decade (Hummel, 1995).

Although these goals appear strictly conservation oriented, they are based upon a larger framework of sustainable development, as indicated by the Brundtland Commission report (WCED, 1987). This approach is structured to consider environment in a framework along with economic and social factors. Single purpose efforts which focus on only one of these three factors are recognized as less efficient and far sighted than those that take all into account. Designing protected areas is no different, it cannot be completed in a vacuum removed from other interests, such as apparently competing land-uses (Government of Canada, 1996:15).

The Northwest Territories remains committed to completing a protected areas network (Government of the Northwest Territories, 1996; World Wildlife Fund, 1997), and is evaluating legislative approaches to assist in land conservation. As a potential model, the province of Manitoba has passed a number of statutes that allow for designation of lands for conservation purposes. Each of these designations carry a unique set of processes for ensuring long-term protection, and prevention of incompatible uses. Although many of these designations do not meet the strict criteria for Protected Areas espoused in the Tri-Council Statement or the Manitoba Government literature (no

logging, mining, or hydroelectric development), they can contribute significantly to the goals of a protected areas initiative, and in many cases have more legislative protection than lands qualifying for provincial Protected Area status. The diversity of Manitoba's legislation is beyond what is currently available in the NWT, yet to date no coordinated evaluation has been completed of this legislation.

1.1.2 Mineral Development in Canada

Natural resource industries play an important role in the Canadian economy, accounting for 45 percent of total exports, and 16 percent of all jobs nationally (Schneider, 1993). Mineral exploration has been responsible for expenditures of nearly $80 million annually in the northern territories of Canada, with averages of 2 economically viable discoveries per year and $681 million in revenues per discovery (Doggett and Mackenzie, 1994). More recently, the NWT has become the leading jurisdiction in Canada for exploration expenditures, with $183 million spent in 1997 (Government of the Northwest Territories, 1997:1)

Mineral exploration in much of Canada, including the Northwest Territories, is governed by a system of resource allocation known as the free entry system (Barton, 1994). This system is characterized by mineral claims and leases that grant exclusive and secure rights to the orebody to the discovering party. In addition to rights to the orebody, an implied right to the surface is provided to allow for extraction of the orebody. The free entry system therefore acts as a means for allocating land to mineral uses as a result of the initiative of the developer.

Security of tenure and exclusivity of access are essential to maintaining a positive climate for investment for the minerals industry (Barton, 1994:163). Mineral exploration and development are impeded by uncertainty in land allocation issues, as large exploration expenditures can only be justified if there is a reasonable chance of having a long-term secure opportunity to extract the discoveries.

1.1.3 Background Issues between Mineral Developments and Protected Areas

The process of allocating lands for new protected areas requires some removal of the land base from mineral exploration and development, often from areas which have previously been staked or are covered by mineral leases. Some form of expropriation of previously granted mineral rights has been required in a number of cases in Canada, including the Windy Craggy site in northwestern British Columbia (Schneider, 1993), the Cream Silver mine in Strathcona Provincial Park (Dwyer, 1993; *Cream Silver Mines Ltd. v. B.C.*, [1986] 4 W.W.R. 328) and the Tener case (*R. v. Tener and Tener* [1985] 3 W.W.R. 673) in Wells Gray Provincial Park. Although these have been high profile cases of expropriations, Canada's case law in dealing with 'takings' or compensable expropriations is small, and thus a great deal of uncertainty surrounds the issue. In addition, current mining legislation also lacks clarity in determining which cases deserve compensation, and how much (Schwindt, 1992). Both governments and the mining industry are impeded in their actions by this uncertainty.

As long as the process of selecting new protected areas is underway, increased uncertainty in regards to security of tenure and compensation upon expropriation is likely to have a negative impact on the mineral investment climate. In addition, many protected areas are enabled under legislation which is unclear about how the mineral resource in the area will be managed, or how decisions will be made as to whether, or how, mining may occur. To address the lack of certainty arising from the selection process, the mineral industry, through the Whitehorse Mining Initiative (WMI), has expressed their support for a completed system of protected areas in all jurisdictions in Canada by the year 2000 (Mining Association of Canada, 1994; p.19). Further reductions in uncertainty are encouraged in the WMI through support for clear policies regarding mineral developments in protected areas. The Government of Canada has echoed these objectives in their Minerals and Metals Policy (Government of Canada, 1996).

1.2 PROBLEM STATEMENT

The Government of the Northwest Territories (GNWT) is currently beginning formulation of a Protected Areas Strategy (PAS). The PAS is intended to "develop a ... strategy for ... development ... of a system of protected areas by the end of the 1997/98 fiscal year and for implementation of the strategy by the year 2000" (GNWT, 1996; p.1).

The initiation of a Protected Areas Strategy (PAS) approach for the Northwest Territories has prompted the Minerals, Oil and Gas Division (MOGD) of the Resources, Wildlife, and Economic Development Department (RWED) to review the legislative options for setting aside and managing protected areas. The GNWT is concerned about maintaining a healthy investment climate for the mineral, oil and gas industries while achieving an effective and complete protected areas network. The certainty of access, clarity of process, and security of tenure required to accomplish the goal of a healthy investment climate for mineral development will only be achieved if protected areas are: 1) based on clear legislation, which provides a range of protection options appropriate to the lands in question; and, 2) has clear guidelines for management of multiple uses within the designated areas. Investigation is necessary into the legislative structure in place in other Canadian jurisdictions to consider alternatives for implementation in the Northwest Territories.

The purpose of this study is to inform the GNWT legislative development process with regards to Crown land protected areas, through consideration of the suite of legislative approaches to setting aside lands in other parts of Canada. In particular, Manitoba as a jurisdiction has instituted a large range of approaches that can be used on Crown lands, and thus serves as a case study.

There are a number of statutes in place in Manitoba that allow for lands to be protected in the province, each possessing unique characteristics. These statutes may function in isolation in law, but the implementation of provincial conservation objectives also occurs through coordinated application of the suite of legislative options available.

1.3 OBJECTIVES

The following objectives will guide the research:

1. to identify and describe Manitoba's legislation that allows for protection of Crown lands for conservation objectives;

2. to evaluate the protected areas provisions of the legislation in terms of the amount of protection provided;

3. to summarize the approaches to management of the mineral resource within areas designated under the legislation;

4. to evaluate the current application of the suite of protected areas alternatives in Manitoba through comparison to other jurisdictions within Canada; and,

5. to make recommendations to the GNWT regarding design of legislation to set aside protected areas and management of minerals within those areas.

1.4 SYNOPSIS OF METHODS

The brief methodology described here is presented in further detail in Chapter 3. The study was primarily conducted through a review of the literature, the legislation, and personal contacts with a number of individuals familiar with the protected area management process in Manitoba. The study is divided into three components:

1. Evaluation of Manitoba's legislation based on a set of criteria identified in the literature. This evaluation was intended to assess the level of protection provided to each designation.

2. An evaluation of the guidelines used in the management of mineral resources in each type of designation. The set of criteria for this evaluation were developed through the course of this study and are identified further in Chapter 3.

3. A categorization of the present designated lands in Manitoba based on the World Conservation Union (IUCN) categorization system. This summation of the application of Manitoba's protected areas suite was compared to similar IUCN data from Saskatchewan and British Columbia to provide a relative reference regarding the success of each tool and the gaps in protection in Manitoba.

1.5 SCOPE

Although there is an oft cited reference to the Brundtland report claiming that the authors suggest 12% of a landscape should be in protected areas, no such suggestion is present in that report. In addition, no study has ever been completed that definitively sets the appropriate amount of land to be set aside for conservation purposes in any jurisdiction, or the level of protection required on that land. Likely there is no such absolute standard, as each jurisdiction is unique in its landscape and in its needs. As a result, there is no way to provide an absolute rating to Manitoba's suite of protected areas, or to the application of any one particular designation. Value does lie in considering whether there are sufficient tools to provide a means to properly protect areas that are deserving.

As well, protection of lands is a dynamic process that cannot be completely summarized by a static snapshot such as this study. If there is a dearth of lands in one IUCN category, it may represent a lack of will to designate this type of area, or it may represent an unwieldy process for setting aside those lands that is not used as a result. This study cannot definitively address causation where lands have not been set aside. It can provide the data necessary to determine whether further study is necessary.

Limitations of time and funds have prevented consideration of the application of protected areas by ecozone or such smaller unit. This work is being completed simultaneously by the province and the WWF, so duplication here would be unnecessary.

The term *protected area* has been used in its broadest sense in this study, to conform to the full range of IUCN designations. The published literature on this topic can generally be divided into two positions, defined by whether lands meeting any IUCN category are to be considered in assessing landscape protection, or only those lands in IUCN I-III. Limiting application of the term *protected area* to lands that meet some arbitrary criteria based on exclusion of certain activities (generally the IUCN I-III categories) seems short-sighted. Likely such limitations would only serve to increase the ignorance of a range of designations or lands that provide valuable conservation or

environmental services. As well, these limitations have ignored the literature which suggests that protection is not based on activity limitations, but on appropriate institutional structure and management.

Where IUCN designations have been used, the reporting of the appropriate jurisdiction was used in determining the categorization of each designation where available. Although unusual categorizations received comment in this study, no attempts were made to second-guess the classification decisions of the appropriate land managers.

1.6 ORGANIZATION OF THE STUDY

This introductory chapter is followed by a review of the literature and a summation of the methods employed in the study. Chapter 4 is an evaluation of Manitoba's protected areas legislation based on a set of criteria derived through review of the literature. Chapter 5 is a narrative of the procedures for management of mineral resources in each designation. This includes a review of the department responsible for management of each designation, the procedures used while establishing a new protected area, and the management of existing designated areas. Chapter 6 provides a summary of how Manitoba has applied the suite of designations available, along with a comparison to Saskatchewan and British Columbia. This is intended to provide a means for evaluation of Manitoba's approach relative to similar jurisdictions in Canada. Conclusions and recommendations follow.

CHAPTER II: REVIEW OF RELATED LITERATURE AND LEGAL PROVISIONS

2.1 REVIEW OF RELATED LITERATURE

2.1.1 Introduction

The bulk of the literature available on the subject of protected areas falls into the area of scientific justification and criteria for such reserves (Cole, 1994; Hummel, 1995; Iacobelli *et al*, 1995; Lucas, 1984; Noss, 1995; Peterson and Peterson, 1991; Scott *et al*, 1993; Soule and Simberloff, 1986). There is relatively little literature in the area of legislation enacted to set aside these areas, or on the essential components of such legislation. Criteria that have been developed to evaluate protected areas tend to focus on whether the area is scientifically and ecologically sound (Noss, 1995) and on the range of activities that are allowed to occur within the area (WWF, 1997), rather than deal with the institutional or legislative structure which affords protection.

2.1.2 Historical Overview of Protected Areas

Occupation of Manitoba's lands by settlers occurred throughout the 19th century, prompting officials to set aside the first Dominion Timber Reserves at Riding Mountain, Spruce Woods, and Duck Mountain in 1895 (Manitoba Natural Resources, 1990). The reserves served two purposes; they prevented settlement on lands that were unsuitable for agriculture and they provided guaranteed access to timber for fenceposts and fuelwood (Manitoba Natural Resources, 1989:18). Maintaining the supply of natural commodities largely drove the designation of land for the next 100 years in the province, whether for timber, wildlife, recreation or tourism areas.

The designation of lands for explicit preservation of nature has been an evolving process throughout North America's different jurisdictions. The first examples of large tracts of land being set aside for nature preservation were Yosemite and Yellowstone National Parks in 1864 and 1872 respectively, and although these parks were far from population centers of the day, their purpose was to provide for tourism and American monumentalism (Runte, 1987). Additionally, the level of protection was intended to

ensure "preservation, from injury or spoilation, of all timber, mineral deposits, natural curiosities or wonders within said park, and their retention in their natural condition" (National Park Service, 1933). This was largely in reaction to the fate of Niagara Falls, which had previously become a haven for unscrupulous profiteers seeking to harass tourists, while industrial development diminished the beauty of the otherwise spectacular surroundings (Runte, 1987).

Canada's history with preserving natural areas begins with the 26km^2 that made up the original Banff Hot Springs Reserve in 1885 (Lothian, 1987). Again, tourism was the driving factor in establishment, with the desire to maintain public access to the mineral springs cited as being of primary importance (Bella, 1987). The preservation of all facets of the landscape from developments such as mines was not present in the early intentions of the park, as indicated by the Prime Minister of the time, Sir John A. Macdonald; "there may be places where the property may be used for industrial purposes without interfering with the beauty of the park as a whole" (Marty, 1985:62). This emphasis on the superficial beauty of the preserve, and its importance solely for tourism formed the basis of park policy for the early years in Canada.

3.1.3 Ecological Considerations in Protected Areas

The first major initiative to recognize the value of strict ecosystem protection in Canada was the International Biosphere Programme (IBP) that ran from 1964 to 1974 (Taschereau, 1985). Under this program, relatively small candidate sites were identified, assessed for their value as benchmarks in representing ecosystems, and ideally designated under a strict legislative framework to provide for legal protection and management.

Protected areas today have been summarized into categories in the work by the World Conservation Union (IUCN) (IUCN, 1984). This system divides protected areas into six categories by the intentions for management of the area, as indicated in Table 1.

Table 1 - IUCN Protected Areas Categories and Definitions

I. STRICT NATURAL RESERVE/WILDERNESS AREA

Ia. Areas managed mainly for science: areas of land/or sea possessing some outstanding or representative ecosystems, geological or physiological features and/or species, available primarily for scientific research and/or environmental monitoring.

Ib. Areas managed mainly for wilderness protection: large areas of unmodified or slightly modified land, or land and water, retaining their natural character and influences, without permanent or significant habitation, which are protected and managed so as to preserve their natural condition.

II. NATIONAL PARK

Protected areas managed mainly for ecosystem conservation and recreation: natural areas of land/or sea, designated to (a) protect the ecological integrity for this and future generations, (b) exclude exploitation or intensive occupation of the area and (c) provide a foundation for spiritual, scientific, education, recreation and visitor opportunities, all of which must be environmentally and culturally compatible.

III. NATURAL MONUMENT

Protected areas managed mainly for conservation of specific natural features: areas containing one, or more, specific natural or natural/cultural feature which is of outstanding or unique value because of its inherent rarity, representative or aesthetic qualities or cultural significance.

IV. HABITAT/SPECIES MANAGEMENT AREAS

Protected areas managed mainly for conservation through management intervention: areas of land and/or sea subject to active intervention for management purposes so as to ensure the maintenance of habitats and/or to meet the requirements of specific species.

V. PROTECTED LANDSCAPE/SEASCAPE

Protected areas managed mainly for landscape/seascape conservation and recreation: areas of land, with coast and sea as appropriate, where the interaction of people and nature over time has produced an area of distinct character with significant aesthetic, cultural and/or ecological value, and often with high biological diversity. Safeguarding the integrity of this traditional interaction is vital to the protection, maintenance and evolution of such an area.

VI. MANAGED RESOURCE PROTECTED AREAS

Protected areas managed mainly for the sustainable use of natural ecosystems: areas containing predominantly unmodified natural systems, managed to ensure long term protection and maintenance of biological diversity, while providing at the same time a sustainable flow of natural products and services to meet community needs

(IUCN, 1994:14-23).

Although the numbering system initially appears ordinal, further work has clarified that higher IUCN rankings do not necessarily correspond with higher levels of protection (Gauthier, *et al*, 1997a). In addition, the system is intended to capture management objectives and thus fails to classify the level of protection provided in the legislation, or the limitations imposed, if any, on any number of activities that may occur within the area (Gauthier *et al*, 1997a; Gauthier *et al*, 1997b; Manitoba Natural Resources, 1997a). IUCN rankings have been found to be of value in assessing the range of protected area types provided within a jurisdiction, and in comparing between jurisdictions. Gauthier notes "the contribution of a management category that may be unique to Saskatchewan, when assigned to one of the six IUCN codes, can then be compared to contributions in other jurisdictions relative to that" (Gauthier *et al*, 1997b:2). As no absolute values are available for the appropriate amount of landscape representation in each IUCN category, or for determining when enough protected land has been reached (IUCN, 1984) this relative approach to evaluation is the sole means available for assessing any jurisdiction's accomplishments.

The contemporary literature lists a range of scientific approaches to selecting new protected areas (Gauthier, 1992; Iacobelli et. al.,1995; Noss, 1993; Scott et. al., 1993; Soule and Simberloff, 1986), although the level of protection appropriate within the area, particularly with the complexity of varying levels of protection over a given protected area, is less clear (Senate of Canada, 1996; p.8; Noss, 1995). Consider that no less than 52 categories of protected area and accompanying management structure have been used in Canadian jurisdictions (Senate of Canada, 1996; p.10). In light of this complexity, universal policies on the designation, management and use of protected areas are simply not possible. Modern definitions of *protected area* by the World Wildlife Fund (Hummel, 1995), the Province of Manitoba (Manitoba Natural Resources, 1996b), and the Government of Canada (1992) have followed the model of prohibiting logging, mining, and hydroelectric development but not other activities. This definition is particularly weak in light of the recent Banff-Bow Valley report which highlighted the

increasing threat to Banff National Park posed by the enormous growth in an activity allowed under this definition - recreation (Banff-Bow Valley Study, 1996). In addition, the Strathcona Park Advisory Committee (SPAC), which was struck to assess ways of improving the protection of park values in Strathcona Provincial Park in British Columbia, recommended continued operation of the Myra Falls underground mining operation within the park (SPAC, 1988). They further concluded:

> Parks are not all the same, and neither are mineral claims. The best resource use decisions are based on detailed knowledge of the locale and constructive local participation. (SPAC, 1988:viii)

In summary, the distinct conclusion in the literature on management of protected areas is that site-specific, ongoing management by a knowledgeable local group, concerned with maintaining the environmental quality of an area, is the best assurance of protection.

2.1.4 Criteria for Protected Areas Legislation

The literature is clear that any form of protection provided to an area must be legislated, not simply granted through policy or common practice (Hummel, 1995; Iacobelli, 1995; Senate, 1996). This ensures legal recognition and a greater likelihood of caution in decisions to reduce the level of protection. Although this emphasis on legislated approaches to designating protected areas, literature on the appropriate nature of this legislation is scarce.

As a result of the IBP, a team of researchers led by Robert Franson at the University of British Columbia School of Law considered the necessary components of legislation designed to set aside ecological areas (Franson, 1972). These areas were intended to be highly protected to form the basis for baseline data, research and education on ecological processes. As a result of this study, criteria were developed to form the basis of ecological reserve legislation. As Franson notes:

> Four principle criteria emerge. First, legislation must provide adequate mechanisms for the selection and reservation of sites and for the management and protection of reserves. Second, it should provide some guidance to those who will administer the program. Third, it must provide for continuing input from the

> scientific and educational community that will use the reserves. And finally, relatively permanent protection for the reserves must be assured. (Franson, 1975:12)

In his 1972 work, Franson notes a distinction between reserves designated on Crown land, and those on private lands. The necessary functions of legislation dealing with Crown lands is as follows:

> The part of the legislation dealing with Crown lands should:
> (a) provide for the acquisition, and designation of lands for the program;
> (b) provide protection against arbitrary removal of reserved lands from the program ... ;
> (c) exclude the operation of other statutory powers that would be inimical to the program; ...
> (e) provide the means for obtaining continuing scientific input for the resolution of questions concerning the management of reserves; and
> (f) provide for the management of the reserves. (Franson, 1972:593)

From the work by Franson, the specific characteristics of ecological reserve legislation were compiled by Taschereau (1985) into a set of criteria which are suitable as a checklist for assessing statutes. These criteria are as follows:

1. Can designate reserves on Crown Land
2. Can accept donations of land for reserves
3. Can expropriate land for reserves
4. Can designate reserves on private land
5. Can designate provisional or emergency reserves
6. Statutes inimical to reserves are excluded or modified
7. Cabinet must approve withdrawal from reserve status
8. Advisory Committee must be consulted before land is withdrawn from reserve status
9. Provides for management of reserve
10. Appoints a reserves programme administrator
11. Provide for input from scientists and other reserve users.
12. Provides for an Advisory Committee
13. Include non-civil servants on the Committee
14. Majority of Committee members are non-civil servants (Taschereau, 1985:16)

It is important to note that these criteria were only developed to evaluate the legislation enabling creation of ecological areas which are typically protected to the highest standards. No criteria are provided for evaluating such protected area functions as

tourism or other multiple-uses. Despite this, it is possible to recognize that in these sets of criteria, the highest levels of protection come from the structure of management and the rigour of the processes for approving activities in the protected area, not simply from a list of banned activities.

Franson included one further recommendation in his work, that of including a *held-in-trust* clause in the legislation following the American model, which serves to provide for public interest litigation in cases of government mismanagement (Franson, 1972). As recently as 1995 it was recognized that this phenomenon (public interest standing in environmental cases) is relatively untried in Canada, and has failed where tried, such as in *Green v. The Queen in Right of the Province of Ontario* (1972, 34 D.L.R. (3d) 20) (Locke and Elgie, 1995).

In order to address the issue at hand, perhaps the most significant criteria of the list is the 'statutes inimical to protection are excluded or modified'. In particular, our interest is in those statutes regarding the allocation of minerals and the permitting of mineral developments. The evaluation intended by this checklist is the simple presence/absence of such a provision in the legislation, but this fails to address the complexity with which other statutes may be modified by the protected areas legislation in practice. Multiple use areas do not simply exclude all other statutes or activities that are not protection oriented. Instead, management is structured to reduce conflicts between the two statutes and the two uses, and to modify the inimical statutes where necessary.

Although the work on legislative criteria by Franson was completed in the early 1970's and later compiled in 1985 by Taschereau, no further literature on this topic has emerged. Literature on protected areas becomes dominated after this period by scientific and geographic studies emphasizing shape, connectivity and other concepts of ecological integrity (Cole, 1994; Hummel, 1995; Iacobelli *et al*, 1995; Lucas, 1984; Noss, 1995; Peterson and Peterson, 1991; Scott *et al*, 1993; Soule and Simberloff, 1986). Outside of such scientific studies, emphasis in Canadian literature turns to political discourse

regarding the Canadian Wilderness Charter (WWF, 1989), the Endangered Spaces Campaign (Hummel, 1989), and the Tri-Council Statement of Commitment (Government of Canada, 1992). Consideration of the legislation required to accomplish such commitments is notably absent.

2.1.5 Mineral Development in Protected Areas

The discovery of the Banff hot springs and the early exploration in the region was primarily undertaken by mineral prospectors. This early association between mining and National Parks was to continue in the mountain parks until 1953, when the operation of the Wheatley coal mine in Banff ceased operation (Lothian, 1981). Currently, Parks Canada prevents mining in any National Park (Government of Canada, 1994), although a few unique cases of retained mineral rights remain (including 10 square miles containing up to 20 million tons of coal belonging to the CPR in Banff) (Lothian, 1981).

Protected areas administered by other agencies and jurisdictions vary as to their level of exclusion of mineral activity. Federal Migratory Bird Sanctuaries do not preclude mineral development in their legislation (DIAND, 1990); New Brunswick legislation allows for mineral development in Provincial Parks and Park Reserves (Fellows, *pers. comm.*); Alberta maintains a range of designations in their legislation to provide levels from complete protection through to almost none (Elder, 1996); while, in Saskatchewan, exploration is not permitted in any Provincial Park, including roadside picnic areas (Patterson, *pers. comm.*). This diversity of protection standards may reflect the inconsistent information available on the impacts such activities may have on protected areas. A simple survey of whether mineral activity is allowed does not appear to be an effective way to determine the degree of protection afforded any site, as the correlation between the presence of mineral activity and the level of protection has not been demonstrated in the literature.

British Columbia has been the source for the most prominent clashes between protected areas and mining. Two instances are worth considering. First is a Supreme

Court of Canada case *R. v. Tener* (1985, 3 W.W.R. 673) in which the holders of a crown granted mineral claim within Wells Gray Provincial Park had their interest in the minerals expropriated by a rezoning of the park by the BC government. The opinion of the court was that this was indeed a compensable taking, and led to the redesignation of the related portion of the park as a Provincial Recreation Area that allowed for mineral development, thus reinstating the mineral rights (Barton, 1994).

The second British Columbia incident occurred in 1993 with the establishment of the Tatshenshini Wilderness Park. Geddes Resources Limited had active claims on Windy Craggy mountain within the area designated as park and were in the process of applying for permits to begin development (West Coast Environmental Law Research Foundation, 1993). The designation as a Provincial Wilderness Park prevented any further mineral development in the area, and to avoid 'takings' issues, the province entered into an agreement with Geddes to provide the company with compensation in the form of cash and alternate lands to have the Windy Craggy rights relinquished to the Crown (Blackman, *pers. comm.*). Although compensation was made, this case continues to be seen by the industry as an injustice and an abuse of government environmental powers, particularly as it contravened recommendations from the province's own Commission on Resources and the Environment (Schneider, 1993).

Despite apparent clashes between development and environment in general, and parks and mining in particular, these interests have been working at efforts to integrated planning that provides for both development and conservation. In general, the principles of sustainable development have been encouraged by the Brundtland Commission (WCED, 1987), and adopted by the Canadian government in the Minerals and Metals Policy of the Government of Canada (Government of Canada, 1996). More significantly, perhaps, a group of diverse interests in the mineral industry adopted the Whitehorse Mining Initiative (Mining Association of Canada, 1994) which encourages the completion of a representative system of protected areas. This resolution arose out of a process undertaken by the Mining Association of Canada whereby representatives from

mining companies, environmental groups, government, and local and aboriginal groups negotiated on a number of contentious issues to arrive at common ground in the interests of a certain and mutually agreeable future for the mining industry. Satisfactory resolution of the issue of protected areas was recognized to be in the interests of all parties (Mining Association of Canada, 1994). Complementary to the issue of land withdrawals for protected areas is the mineral industry's concerns surrounding land use policies within and surrounding protected areas. As removal of land for protection fails to completely exclude mineral development in all cases, lack of clarity regarding the way in which mines and related developments can be included, as well as the policy framework in which this may occur, is another source of potential uncertainty.

2.2 RELATED LEGAL PROVISIONS

2.2.1 Land Management in Manitoba

In the most general case, Manitoba's Crown lands are managed under a number of different pieces of legislation and departments. The most general in application is the Crown Lands Act (C.C.S.M. c.C340) which is intended to apply to all lands vested in the Crown. This Act provides significant latitude to the Lieutenant Governor in Council to manage and administer such lands. The cabinet has established a *Provincial Land Use Committee of Cabinet* to oversee these responsibilities, which is provided with recommendation from the *Interdepartmental Planning Board (IPB)* established under the provincial Planning Act (C.C.S.M. c.P80). The IPB is established to "advise and assist the minister and government departments and agencies in formulating policies affecting the use and development of land ..." (C.C.S.M. c.P80 §.9(a)) as well as to coordinate major land use planning activities in the province (Richardson, 1989). Despite the apparent over-arching coordination function of this process, these procedures are not extended to lands controlled by agencies of the province, such as lands owned by the Manitoba Habitat Heritage Corporation, even though they are Crown lands under the definition of the Crown Lands Act.

To coordinate specific planning of Crown land use, a *Crown Land Classification Committee(CLCC)* was established representing the Departments of Natural Resources, Agriculture, Rural Development, Environment, Energy and Mines, and Northern Affairs. (Government of Manitoba, 1991:c.1A). Members of the committee classify lands for suitable uses relative to ecological characteristics, slope, flood conditions, and agricultural or other use potential (Government of Manitoba, 1991:c.8B). Crown lands designated under other acts are generally beyond the scope of the CLCC, including those under the Provincial Parks Act, the Ecological Reserves Act, the Forest Act, and certain designations under the Wildlife Act (Barto, *pers. comm.*). These lands are more directly managed by the department which maintains authority under the appropriate Act. In many cases the CLCC is the body which initiates or oversees recommendations to designate areas under these protected area designations.

The guidelines under which the CLCC operate are established in regulation C.C.S.M. c.P80-184/94 as the Provincial Land Use Policies (PLUP) Regulation. These policies are "a guide to Provincial and local authorities undertaking and reviewing land use plans" and all new land use plans "shall be reviewed to ensure that it fulfills the objectives of the Policies in a reasonable manner" (C.C.S.M. c.P80-184/94). Portions of the PLUP deal with natural features, with the identified objectives being "to protect significant natural features or areas which may be degraded or eliminated by certain types of development ..." (C.C.S.M. c.P80-184/94). No specific details are given as to identifying the appropriate designation for protection. The PLUP also provide guidance in cases of mineral resources. "Economically valuable mineral ... resources shall be protected from land uses that would restrict mineral ... exploration and development" (C.C.S.M. c.P80-184/94). In cases of conflict between policies and lands that are valuable for more than one use, such as minerals, recreation, and natural features, no detail is provided for advising the planning process.

2.2.2 Mines Legislation

Exploitation of mineral resources can occur only with consideration of the mineral property rights, the property rights to the surface, and the environmental licencing processes in any area (Barton, 1993).

Mineral rights within Manitoba are largely held by the Crown and administered by Manitoba Energy and Mines. The disposition of these rights is handled in accordance with the Mines and Mineral Act C.C.S.M. c.M162. Allocation of minerals as outlined in this Act not only provides the potential developer with rights to the identified orebody, but an associated parcel of rights to surface use and development. This is essential in order to be able to exploit the rights acquired for the orebody. Although this right of entry is clearly recognized in law, it is managed largely in isolation from other surface rights. Coordination generally only occurs upon expression of interest in extracting the resource as allocated.

The administration of general surface rights is specific to the site of interest. In cases where the surface is undesignated Crown land, surface rights are administered by the Department of Natural Resources, Crown Lands Operations Branch. Crown lands falling under one of the designations that carries land management authority confers surface rights planning and management authority to the branch administering the designation. These include Ecological Reserves, Provincial Parks, Wildlife Management Areas, Provincial Forests, and Heritage Resource Areas (Barto, *pers. comm.*). Despite this authority, only Provincial Parks and Ecological Reserves fully administer their own surface rights (Krakowka, pers. comm.). In certain cases, additional permits are required to use the surface within protected areas, but other than Provincial Parks and Ecological Reserves, these are in addition to Crown Land Work Permit requirements (Krakowka, *pers. comm.*). The Mines and Minerals Act also demands fulfillment of the requirements of the managing agency for exploration and staking in the cases of Provincial Parks, Wildlife Management Areas, and Provincial Forests (C.C.S.M. c.M162 §.147). Unlike the other designations, lands owned by the Manitoba Habitat Heritage Corporation,

although Crown lands, are not subject to any such permitting process, as the surface is managed strictly by the Corporation.

The minister responsible for the Mines and Minerals Act does have some authority over surface rights issues. In particular, in the event of a change in the designation of the surface, "the minister may ... cancel the mineral access rights of the holder" (C.C.S.M. c.M162 §.144(1)), with mineral access rights defined as "the rights to enter, use and occupy the surface of land to prospect or explore for or develop, mine and produce minerals and does not include surface rights" (C.C.S.M. c.M162 §.1). This tool may be of use during designation of new protected areas, but does not provide clarity in regards to 'takings' issues, as discussed above.

Lands that are held by an agency of the province are less clear as to mineral management. Habitat Heritage lands not subject to the same level of surface rights control as those designations listed above, although they do qualify as Crown lands for the purposes of the Crown Lands Act and the Mines and Minerals Act (C.C.S.M. c.C340; C.C.S.M. c.M162). This indicates that although management occurs in isolation from the Lands Branch, the same legal provisions that apply to Crown lands in the Mines and Minerals Act would apply to Corporation lands. Conservation Districts are not agents of the Crown (C.C.S.M. c.C175) and their lands are treated as privately owned for the purposes of surface rights management (Dugay, *pers. comm.*). The ability to control the allocation of these surface rights, whether to prevent or to impose conditions on mineral developments, by the district is generally low. For example, if, as private owner, the district decides to prevent access to the surface for mineral exploration of Crown owned mineral lands, an order granting access for exploration may be issued by the Mining Board following a hearing on the subject (Mines and Minerals Act C.C.S.M. c.M162 §.155(1)). The district in question may request that the mineral rights corresponding to their land be withdrawn under the Mines and Minerals Act, but this has not been used to date (Dugay, *pers. comm.*).

2.2.3 Environmental Assessment and Licencing

Along with managing the land base for coordinated use, the province maintains some discretion over specific developments that occur on the land. The Environment Act (C.C.S.M. c.E125) is intended to "develop and maintain an environmental management system" which "is complementary to, and support for, existing and future provincial planning and policy mechanisms"(C.C.S.M. c.E125 §.1(1)). The function of the act is to provide for environmental assessment of developments, to ensure a minimum of environmental impacts from the developments that are allowed to proceed, and prevention of developments whose impacts are particularly acute. A consideration in the environmental assessment process is the current land use and zoning, as well as any designations that may apply to the land, including protected area designations (C.C.S.M. c.E125-163/88). Land designations such as protected areas are also a point for consideration in the public review process which may be required during an environmental assessment (CEC, 1992:10). The degree to which specific features of the protected area are considered is not outlined, and may vary on a case-by-case basis. This combination of coordinated regional planning for the most appropriate land uses, and assessing actual uses (developments) in an ongoing, dynamic basis for the impacts they may cause is the foundation of environmental land management in Manitoba.

2.2.4 Manitoba's Endangered Spaces Plan

Manitoba has also outlined their action plan for the Endangered Spaces Campaign (Manitoba Natural Resources, 1997d). This plan revolves around using the available designations to protect representative lands from each ecoregion (Manitoba Natural Resources, 1997c). The only lands that are counted towards this goal are those which have protection from logging, mining, and hydro-electric developments. Currently these include Ecological Reserves, Provincial Parks and Wildlife Management Areas where zoned to prevent these activities, along with other designations and private lands where available. In many of Manitoba's protected areas, only portions of the designated land

will count towards this goal, as other zoning classifications remain open to these industrial uses (Manitoba Natural Resources, 1996a).

2.3 SUMMARY

Protected areas have been set aside in Canada for the past century. Although the emphasis has changed over the years, conflicts continue between ecological considerations and industrial uses. Much of the literature on the subject is published by the competing interests, and is largely serves an advocacy purpose.

Although there is now a significant amount of literature on the science of protected areas, there is little oriented towards legislation and policy components. One set of criteria for evaluating ecological reserves legislation is available. Literature exists on the categorization of protected areas based on management objectives (IUCN), but this categorization does not correlate with the absolute levels of protection in an area. The categorization is useful as a comparison tool between jurisdictions which vary in their use of other terminology.

Manitoba has established a process for assessing the most appropriate use of each parcel of Crown land in the province. This process is intended to provide coordination between different uses and jurisdictions. As well, the environmental approval system is intended to minimize the impacts of developments anywhere in the province.

The designation of lands as protected areas does not isolate them from other resource demands or from impacts from developments outside the designated area. These designations are to be balanced with other resources of high value, as has been attempted in Manitoba with the PLUPs. The province has also begun an initiative to meet the objectives of the Endangered Spaces program, but these lands are identified based on land use criteria, rather than standards for protection based on the enabling legislation.

CHAPTER III: METHODS

3.1 INTRODUCTION

The study was conducted using a number of techniques including review of legislation, written policies, the literature, management decisions, and common practice as identified by government officials. The investigation focused on the structure and function of the individual designations (ie. Provincial Park, Wildlife Management Area, etc.), as well as the entire suite of protected areas available for use in Manitoba under provincial jurisdiction. The intention was to identify the level of protection contained in the legislation, the particulars regarding management of the mineral rights, and the application of the suite of designations in comparison to other jurisdictions in Canada.

A summary of the various protected area tools available to provincial land managers in Manitoba was completed, including identification of the purpose, means of establishing, the level of protection afforded, and the examples of the current use of each designation. The summary included those provisions contained in the acts, as well as in the regulations and written policies.

This summary was conducted as a three-part evaluation. The first component focused on evaluating the enabling legislation for each of the designations. This was completed through comparison of the legislative components and structure of each designation to an established set of evaluation criteria (those developed by Franson and Taschereau).

The second was completed through summary of the treatment of the mineral resource in each designation. The means for access and methods available for development of this resource were summarized. A consistent series of narrative criteria were used.

Third is a comparison between jurisdictions on the application of the entire suite. This comparison is based on the IUCN categorization to allow for identification of similar designations and comparison of area designated and relative use of each tool.

3.2 REVIEW AND EVALUATION OF LEGISLATION

3.2.1 Manitoba's Protected Areas Legislation

A search of the legislation and regulations was completed to identify each of the tools available for protecting lands within provincial jurisdiction. This included all measures to protect Crown and publically owned lands only. As the privately held land base in the NWT is small, tools for privately held lands were not considered except for those that would be expropriated to form part of the Crown land base for the purposes of conservation. Each approach is described as to the process for designation, the intent or purposes in management, the level of protection, and other institutional structures associated with the designation. Two screening criteria provided bounds to the set of tools. First, protection was only considered where the intents or purposes revolve around conservation, ecology, or natural heritage. Designations limited to relatively small and isolated cultural or historical sites were not considered. Second, designations had to apply to Crown land, or to land owned by an agency enabled under provincial legislation. In cases where designations applied to both Crown and private lands, only those portions specific to Crown lands (or those owned by an agency enabled by provincial legislation) were considered.

Tools for protecting lands that were considered in this study include Ecological Areas, Provincial Parks, Wildlife Management Areas (WMAs) and other designations under the Wildlife Act, Provincial Forests, Manitoba Habitat Heritage Corporation lands, Conservation District Protected Areas, and Heritage Resource Areas. These designations differ in the characteristics of the enabling legislation, the general nature of the resource that the protection is focused upon, and the particulars regarding application of the designation.

Other designations that were considered but discarded include lands acquired under the Endangered Species Act, and designations other than WMAs under the Wildlife Act. Both these tools allow for acquisition and identification of lands, but do not include provisions to allow for management.

3.2.2 Evaluation of Designations

The designations were evaluated under criteria based on the work of Franson (1972; 1975) as compiled by Taschereau (1985) to establish the level of protection afforded by each Act. Although dated, further expansion on this work, or more recent works establishing evaluation techniques are not available. The criteria come directly from the work outlined in the literature review section, with the sole exception of the *Held in Trust Clause* criteria, which was omitted as it appears to be non-existent in Canada in any form, and has not been recognized by the courts to date. This set of criteria appears to provide the best available assessment of whether a piece of legislation provides the components necessary to ensure protection. Despite the fact that this set of criteria was not designed for multiple use areas, it appears to remain valid in assessing the level of protection afforded to these areas as well. The criteria are as listed in Table 2.

Table 2 - Protected areas legislation evaluation criteria

1. Can apply designation on Crown or other publically owned land
2. Can accept donation of land for the protected area
3. Can expropriate land for designation
4. Can use provisional or emergency designations where necessary
5. Statutes inimical to protection are excluded or modified
6. Cabinet must approve withdrawal from protection status
7. Provides intentions and guidelines for management of area
8. Provides for input from scientists and other reserve users in management
9. Provides for an advisory committee
10. Includes non-civil servants on the advisory committee
11. Majority of committee members non-civil servants
12. Advisory Committee must be consultee before withdrawal from protection status

Adapted from Franson, 1975; Taschereau, 1985.

3.3 EXAMINATION OF INTERACTIONS WITH MINING STATUTES

The evaluation of the protection afforded by the legislation is followed by an expansion of the concepts espoused in criteria #5, the exclusion or modification of inimical statutes. This examination looks at the operation of Manitoba's protected areas in regards to the ways that 1) conflicts between the protected areas legislation and the mining legislation are avoided; and, 2) the ways that the general mining legislation is modified where necessary. Much of this conflict avoidance and modification occurs through departmental regulations and practices.

A set of criteria were developed to structure this examination and are listed in Table 3. The criteria were identified through consultation with protected area managers, academics, mineral industry representatives, and government mining personnel in non-scheduled interviews, as well as a review of historical conflicts between mining and parks.

Table 3 - Interaction with Mining Statutes Parameters

Creation of New Protected Areas:
1. Are areas of high mineral potential avoided
2. Are existing mineral rights grandfathered in the creation of new protected areas
Existing Protected Areas:
1. Is the right to stake removed from the area
2. What is required to remove the designation if other valuable interests arise
3. Are cross boundary issues within the jurisdiction of the managing agency
4. What routes are available to deal with unintended consequences of approved developments

This narrative criteria is divided into management of the process of designating new protected areas, and management of existing protected areas. The concerns for level of protection are whether mineral developments or interests are likely, whether mineral interests may prevail in land-use conflicts, and whether developments that do occur can

be managed to prevent large impacts on designated areas. This criteria is equally valid in understanding areas that allow mineral developments as areas that do not. The criteria are simply the basis for an examination, and do not convey a measure of success or failure as do those in Chapter 4. This is due to the fact that, based on the literature or current practice, one approach to managing minerals cannot be clearly identified as 'better' or 'worse' than others.

This examination was conducted largely through non-scheduled interviews with protected area managers and other government personnel. Consultation with departmental literature, such as annual reports, interdepartmental agreements, written policies, and regulations, supplemented information gathered through personal interviews.

3.4 EVALUATION OF THE SUITE OF PROTECTED AREAS OPTIONS

To complete the assessment of the value of Manitoba's protected area designations, it was necessary to consider how the suite has been applied as a whole. This was completed through classification of each type of area into the IUCN six category classification system (Table 1), as outlined by Gauthier, et al (1997b). A comprehensive suite of options for protecting lands could not simply represent only a few IUCN categories. Those not represented in such a system would suggest gaps, or a lack of tools to set aside, say, heritage resources, or areas managed for science or wilderness, etc. Without these tools, areas deserving of protection would either fail to be designated, or would be designated and managed in a way that failed to identify the prime resource deserving of protection.

For the purposes of this study, the Manitoba system was classified into IUCN categories. Where this had previously been competed by the appropriate government department, those classification were used. For designations not yet classified, the appropriate category was identified through comparison of the IUCN management objectives to those used by the managing department. The number of protected areas and

geographic area contained within each designation and category was then determined from geographical data supplied by each department.

Collection of similar data was completed for two other jurisdictions within Canada to allow for comparison of the application of the Manitoba suite of options. These two jurisdictions were chosen due to the similarity of their landscapes, populations, and representation in National Parks. Both sets of data had largely been compiled by published government or private research.

The comparison between different jurisdictions was primarily based on the compiled quantitative data. Total areas protected were compared, as well as the area protected in each IUCN category. Where gaps or significant differences occurred, these were identified. Although the classifications used by the other jurisdictions were used, inconsistencies in the use of this classification system between those jurisdictions and Manitoba were noted.

CHAPTER IV - REVIEW AND EVALUATION OF LEGISLATION

4.1 TOOLS AVAILABLE FOR PROTECTING LANDS IN MANITOBA

Manitoba's provincial legislation allows for a number of ways to provide protection to lands. Although many of these can apply on any type of lands, this study is limited to Crown lands and those owned directly by the provincial government, or agency enabled by provincial legislation. Designations are available under the Ecological Reserves Act, the Provincial Parks Act, the Wildlife Act, the Forest Act, the Manitoba Habitat Heritage Act, the Conservation Districts Act, and the Heritage Resources Act.

The level of protection offered by an Act is most evident in the institutional structure that is set in place. Ministerial regulations are clearly less onerous as a requirement for setting protection standards than cabinet regulations, which are likewise less onerous than required public consultation. In addition, political accountability is increased as decision-making authority moves from bureaucrats to elected officials to cabinet. The provision of an advisory committee whose consultation is required in designation and management of areas distinctly sets a higher standard for protection, and provision of non-civil servants on this committee furthers this goal. The literature on protected areas is clear: a structure that allows for competent, transparent, accessible, accountable, and science-based management decisions, sufficiently insulated from political pressures, provides the highest level of protection possible (Beechey, 1989:7; Dwyer, 1993; Iacobelli, 1995; Noss, 1995; Peterson and Peterson, 1991; Senate of Canada, 1996; Soule and Simberloff, 1986).

The evaluation criteria follow from Franson (1972; 1975) and Taschereau (1985) as outlined in the methods chapter. The numbering system for the evaluation is outlined in Table 4. The presence or absence of each criteria is considered solely in terms of the legislation. Some departments maintain structures as outlined in the criteria, but where this is not required by the legislation, it is not sufficient to meet the criteria.

In the case of criteria #5, only the presence or absence of the necessary provisions in the Act is evaluated herein. Further examination of the interaction between the two

statutes of concern are beyond the scope of this chapter. In the case of interactions with the Mines Act, a thorough examination is provided in Chapter 5.

Table 4 - Protected Areas legislation evaluation criteria

1. Can apply designation on Crown or other publically owned land
2. Can accept donation of land for the protected area
3. Can expropriate land for designation
4. Can use provisional or emergency designations where necessary
5. Statutes inimical to protection are excluded or modified
6. Cabinet must approve withdrawal from protection status
7. Provides intentions and guidelines for management of area
8. Provides for input from scientists and other reserve users in management
9. Provides for an advisory committee
10. Includes non-civil servants on the advisory committee
11. Majority of committee members non-civil servants
12. Advisory Committee must be consulted before withdrawal from protection status

Adapted from Franson, 1975.

4.2 THE ECOLOGICAL RESERVES ACT

The Ecological Reserves Act provides a designation that allows limited activity with an emphasis on scientific research and preservation. In terms of regulated restrictions on activity, Ecological Reserves are the most onerous designations available for Crown lands in the province. Activities in Ecological Reserves are limited to those done under permit from the minister. This includes all entry, travel, and research in all but three cases, where some entry is permitted without prior ministerial approval.

4.2.1 Evaluation of Ecological Reserve Legislation

1. Ecological Reserves designation can apply on Crown land. According to C.C.S.M. c.E5 §.2(2) "The Lieutenant Governor in Council may by regulation designate Crown land in the province as an ecological reserve"

2. and 3. Ecological Reserves can be created through acquisition of land. C.C.S.M. c.E5 §.5 states that "(a)ny land in the province that is not Crown land that in the opinion of the minister is required for establishment as a reserve, or for use in administering a reserve, may be acquired by the government by purchase, lease, exchange, gift, devise, expropriation under the Expropriation Act, or otherwise."

4. Emergency designations are not included in the powers outlined in the act. Creation of reserves requires passing of a regulation by the Lieutenant Governor in Council, with no option for short-term or interim protection provided.

5. The modification of existing statutes is undertaken by two sections. C.C.S.M. c.E5 §.14 states that "(w)here a provision of this Act or a regulation made thereunder is in conflict or is inconsistent with a provision of any other Act of the Legislature or a regulation, by-law, order or direction made or given thereunder, the provision of this Act or the regulation made thereunder prevails." and §. 13 "The Crown is bound by this Act." Thus activities, whether undertaken under the authority of another statute or undertaken by the Crown, are to be scrutinized for their impacts on the goals of the Ecological Reserve. This combination satisfies the simple binary evaluation of the inimical statutes criteria.

6. Ecological Reserve designations may only be removed with cabinet approval. Removal of the Ecological Reserve designation is additionally covered by C.C.S.M. c.E5 §.8(4): "Before a designation is removed ... the minister shall, (a) publish notice in a

newspaper that has general circulation in the area in which the reserve is located; and (b) where the minister considers it to be in the public interest, request the committee to proceed under clause 9 (6) (b)." Clause 9 (6) (b) states "For the purposes of this Act, the committee upon the request of the minister shall ... receive and consider submissions from members of the public and make recommendations to the minister with respect thereto"

7. Although specific guidelines for management of Ecological Reserve areas are not provided in the Act, the purposes of reserves is outlined in some detail in C.C.S.M. c.E5 §.3, including "to afford opportunities for and to encourage the study of and research into the ecological features of the province ... and to preserve ... for posterity ... representative examples of natural ecosystems of the province ...". This appears to satisfy the criteria in Franson regarding legislation, which should "provide some guidance to those administering the program concerning its objectives" (1972:599).

8. Input from scientists or reserve users in management is not required by the Act. The Advisory Committee is appointed by the Lieutenant Governor in Council, but no detail as to the make up regarding scientists, users, and other members is provided in the Act. The Advisory Committee is authorized to receive and consider submissions from members of the general public, but only initiates action upon the request of the minister.

9. The role of the Advisory Committee includes C.C.S.M. c.E5 §.9(6)(d) "For the purposes of this Act, the committee upon the request of the minister shall ... advise the minister generally with respect to the administration of this Act." The Act outlines the appointment, administrative details, and duties and functions of an Advisory Committee in C.C.S.M. c.E5 §.9.

10. and 11. No details are provided on the make-up of the advisory committee.

12. As noted above, the advisory committee can be consulted, and can undertake a public consultation, where, in the opinion of the minister, it is in the public interest. No binding requirement to consult with advisory committee is included in the legislation.

4.3 PROVINCIAL PARKS ACT

The Provincial Parks Act is Manitoba's newest conservation oriented legislation, passed in 1993. It allows for creation of Provincial Parks of 4 or more types as follows:

> (a) a wilderness park, if the main purpose of the designation is to preserve representative areas of a natural region;
> (b) a natural park, if the main purpose of the designation is to both preserve areas of a natural region and to accommodate a diversity of recreational opportunities and resource uses;
> (c) a recreation park, if the main purpose of the designation is to provide recreational opportunities;
> (d) a heritage park, if the main purpose of the designation is to preserve an area of land containing a resource or resources of cultural or heritage value
> (C.C.S.M. c.P20 §.7(2))

These areas can than be zoned into 6 or more unique categories specifying the emphasis of protection, and the level of activity and development allowed. These land use categories include Wilderness (protect landscapes and provide pristine environment). Backcountry (protect landscapes and provide basic facilities for recreation), Heritage (protect cultural or heritage resources), Resource Management (permit commercial resource extraction), Recreation Development (accommodate large recreational developments), and Access (roads, hydro lines, and services). The first three categories do not allow for industrial development, as noted in C.C.S.M. c.P20 §.7(5) "... in the wilderness, backcountry, or heritage land use categories, no person shall engage in ... logging, mining or the development of oil, petroleum, natural gas or hydroelectric power", while the latter three permit such uses with varying restrictions to recognize the primary use and sensitivity of each area. Wilderness parks are unique in requiring that only the Wilderness, Backcountry, and Access land use categories may be used, and that

all lands including Access in these parks will prevent the developments outlined above (C.C.S.M. c.P20 §. 7(4)).

Parks can be designated under a provisional or emergency designation as Park Reserves for a period of six months, extendable by five years. During this time, public consultation must be held to establish the suitability of the reserve as a Provincial Park. In addition, any provision of the Act or any combination of regulations may be applied to park reserves during the second period, provided consultation on these provisions is held during the initial six months.

4.3.1 Evaluation of Provincial Park Legislation

1. The designation of Provincial Park can, according to C.C.S.M. c.P20 §.7(1), be applied to "land", which is not otherwise defined in the Act. Section 2 of the Act notes that "This Act and the regulations apply to ... private land and Crown land in provincial parks, except when this Act or the regulations state otherwise".

2. and 3. C.C.S.M. c.P20 §.12(1) states as follows: "The minister may, with the approval of the Lieutenant Governor in Council, acquire land for provincial parks by purchase, lease, exchange, expropriation, gift or otherwise."

4. Provisional designations are available under the Act. C.C.S.M. c.P20 §.8(1) outlines that "(t)he Lieutenant Governor in Council may, by regulation (a) designate Crown lands as a park reserve for a period of six months, during which time public consultation must take place ... and (b) declare any provision of this Act or the regulations to apply to the park reserve during the six-month period." In addition, C.C.S.M. c.P20 §.8(2)states "after consultation takes place, the Lieutenant Governor in Council may, by regulation, (a) renew the designation made under subsection (1) for a further period of five years; and (b) declare any provision of this Act or the regulations to apply to the park reserve during that

period." According to section 8(3), the lands in §. 8(2) may include additions or deletions from the lands in §. 8(1).

5. This Act binds the Crown. (C.C.S.M. c.P20 §.3). Regulations may be promulgated under C.C.S.M. c.P20 §.33(r) by the minister "respecting the removal and use of resources that are in addition to the provisions of *The Forest Act, The Wildlife Act, The Mines and Minerals Act* and any other Act of the Legislature". Although this may in effect modify the operation of these Acts regarding resource extraction or harvest, there is no indication that other terms inimical to protection would be excluded or modified. Examples may include the distribution of authority to manage forest fires, forest pest outbreaks, or flooding. Where another statute is clear on the process for reacting to these situations, but that action is in conflict with ecological process that are intended to protected under the Provincial Parks Act, there is nothing in the Provincial Parks Act to establish it's supremacy.

6. Removal or downgrading of protection status is covered by C.C.S.M. c.P20 §.7, which includes provisions for designation of parks, classification of parks and land use categories within parks, and restrictions on use. These provisions apply through Lieutenant Governor in Council regulations.

7. Two sections of *The Provincial Parks Act* are devoted to the dedication and purpose of Provincial Parks. C.C.S.M. c.P20 §.4 notes "Provincial parks are dedicated to the people of Manitoba ... and shall be maintained for the benefit of future generations ...", while §. 5 states "... the purposes of a provincial park system include the following: (a) to conserve ecosystems and maintain biodiversity; (b) to preserve unique and representative natural, cultural and heritage resources; (c) to provide outdoor recreational and educational opportunities and experiences in a natural setting". Reference is also made to the fact that

Provincial Parks should be "managed in a manner consistent with the principles of sustainable development" (C.C.S.M. c.P20) in the preamble.

8. C.C.S.M. c.P20 §.9(1) requires that "Before a regulation is made under section 7 ... the minister shall provide an opportunity for public consultation and shall seek advice about proposed regulations." It is expected that this forum would allow for input from scientists and reserve users during changes to regulations. Although no provision is made for continuing public input, this is not required under the criteria.

9. 10. and 11. C.C.S.M. c.P20 §.29(1) outlines that "(t)he minister may appoint advisory committees to provide advice and recommendations to the minister concerning the administration of one or more provincial parks." There is no binding commitment to establish, maintain, or consult with this advisory committee in the legislation, nor is there detail on the composition of a committee.

12. As noted above, the advisory committee provided for in the Act is not required, and is not given any specific role in the removal of protection status.

4.4 THE WILDLIFE ACT

The Wildlife Act provides legislation for management of the provinces wildlife resource. Although much of the Act is focused on wildlife harvest, and compensation for crop damages by wildlife, provisions are also included for protection of Crown lands for conservation purposes. These can take many forms, with Wildlife Management Areas (WMA), Special Conservation Areas, Game Bird Refuges, and Wildlife Refuges being specifically mentioned in the Act, as well as "any other type of area that the Lieutenant Governor in Council may specify" (C.C.S.M. c.W130 §.2(3)(e)). Of these areas available, only WMA's qualify as granting land management authority to the wildlife branch, the others simply being an application of a package of regulations regarding

hunting or seasonal activity (Barto, *pers. comm.*). The unique characteristic of this designation (WMA) is the management of lands primarily for the protection of one particular resource (wildlife).

4.4.1 Evaluation of Wildlife Management Area Legislation

1. C.C.S.M. c.W130 §.2(2) states "The Lieutenant Governor in Council may designate Crown lands as ... wildlife management areas ... or any other type of area that the Lieutenant Governor in Council may specify."

2. and 3. C.C.S.M. c.W130 §.6 outlines that "(t)he government may acquire, by purchase, exchange, expropriation under *The Expropriation Act*, or otherwise, any land required as a designated area for the purposes of this part."

4. No provisional designations are available in the Act. C.C.S.M. c.W130 §.3(1) states that "... the designation of an area for the better management, conservation and enhancement of the wildlife resource ... in accordance with section 2 does not limit or affect the uses and activities that may be undertaken in the area..." subject to regulation passed by the minister under this section. In effect, designations under *The Wildlife Act* can be used provisionally, with detailed regulations following upon further study. This fails to satisfy the criteria for provisional designations, as part of the value of these designations is the clarity they provide the public as to a continuing process, rather than a finality of the governments decision.

5. *The Wildlife Act* includes no mention of modifying or excluding other statutes. In addition, the Act and regulations under the Act are not specified as being binding on the Crown.

6. Designations under *The Wildlife Act* are made by the Lieutenant Governor in Council C.C.S.M. c.W130 §.2(2), with regulations "respecting the use, control, and management of an area" (C.C.S.M. c.W130 §.3(1)(a)) being made by the minister. Repeal of such regulations would be required to remove protection measures, or the designation entirely. As ministerial regulation could effectively eliminate all but the title of the designation, this fails to satisfy the cabinet level approval for downgrading of protection.

7. The only mention of purposes or intentions for management of these areas in the Act is in C.C.S.M. c.W130 §.2(1), which states "When the Lieutenant Governor in Council is satisfied that the wildlife resource of the province would be better managed, conserved or enhanced, it may ... designate areas".

8. There is no specific reference to consultation with the public or with scientists or users in management decisions regarding these areas.

9. 10. 11. and 12. No mention of an advisory committee to deal with any issues of areas designated under *The Wildlife Act* is included in the Act.

4.5 THE FOREST ACT

The definition of provincial forest from *The Forest Act* C.C.S.M. c.F150 §.1 is "any lands designated as such in the regulations". Specific sections dealing with the designation of provincial forests are in C.C.S.M. c.F150 §.41(1) "... the Lieutenant Governor in Council may make regulations ... (q) designating any area of land as a provincial forest". Provincial Forests are unique in that the designation is made to provide management for one particular resource, with sustainable use as the guiding intention. Although these lands are often ignored as potential contributors to the provincial protected areas goals, a designation which is based on management of the

landscape to provide for sustainable harvest of one renewable resource, while maintaining attention to broad conservation objectives, can be of value in protected area systems.

4.5.1 Evaluation of Provincial Forest Legislation

1. The legislation does not specifically state what kinds of land may be included in provincial forests. It does note in C.C.S.M. c.F150 §.23(1) that "all Crown lands within a provincial forest are hereby withdrawn from disposition, sale, settlement or occupancy, except under the authority of this Act" thus meeting the evaluation criteria.

2. and 3. C.C.S.M. c.F150 §.25 outlines that "(t)he Lieutenant Governor in Council may purchase, expropriate, or otherwise acquire, any land for a provincial forest ... or may exchange therefor available Crown lands ..."

4. No provisional or emergency designations are provided in *The Forest Act*.

5. The Act does not contain specific reference to other statutes. C.C.S.M. c.F150 §.41(1)(k) authorizes the Lieutenant Governor in Council to make regulations "respecting the conservation, protection, and management ... and the control and management of the flora and fauna ... and the occupancy of the lands in provincial forests".

6. Regulations regarding designation and management of provincial forests fall under the authority of the Lieutenant Governor in Council.

7. The general objectives for provincial forest management are provided in C.C.S.M. c.F150 §.23(1) "... to reserve certain areas of the province for a perpetual growth of timber, and to preserve the forest cover thereon, and to provide for a reasonable use of all the resources that the forest lands contain ..."

8. No means for input from users or scientists, or from the general public is included in the Act.

9. 10. 11. and 12. No provision is included in the legislation for an advisory committee on provincial forests or any other forestry matters.

4.6 THE MANITOBA HABITAT HERITAGE ACT

The Manitoba Habitat Heritage Corporation is a Crown corporation established for the "conservation, restoration, and enhancement of Manitoba's fish and wildlife habitat and the fish and wildlife populations thereof ..." C.C.S.M. c.H3 §.3. The corporation performs many functions, predominately on privately held land, but also acquires land as necessary for conservation objectives (MHHC, 1996). The corporation is also an agent of the Crown as noted in the Habitat Heritage Act C.C.S.M. c.H3 §.28. As a result, the lands owned by the corporation would fit the definition of Crown lands as outlined in the Crown Lands Act. Despite this, the lands are held by the corporation, and thus are not subject to management by Manitoba Natural Resources, the Crown Lands Classification Committee, or certain other provincial land management processes (Colpitts, *pers. comm.*).

4.6.1 Evaluation of Habitat Heritage Legislation

1. The corporation may work towards habitat protection on Crown land, privately owned land, or lands owned by the corporation. The only lands that the corporation maintains authority over as land manager are those owned by the corporation, which, as noted above, fit the definition of Crown lands.

2. "The corporation may, by purchase, lease, gift, devise, exchange, or otherwise, acquire any real property that it deems requisite for the purposes of this Act ..." C.C.S.M. c.H3 §.17(1).

3. The power of expropriation is not included in the Act.

4. No means for provisional or emergency designation is available to the corporation.

5. No statutes are excluded or modified in the Act. C.C.S.M. c.H3 §.17(2) states that "... property acquired under subsection (1) shall be acquired and held in the name of the corporation", thus eliminating in practice the application of a number of provincial land management statutes only applicable to Crown lands, although not in law. Statutes which apply generally in the province that may be inconsistent with protection would still apply to these lands.

6. Rather than cabinet, "[t]he affairs of the corporation shall be managed and administered by a board of directors ... of not more than 11 persons ..." (C.C.S.M. c.H3 §.8). Withdrawals from protection status, or sale of such lands, is under the authority of such board, subject to the Crown Lands Act (C.C.S.M. c.H3 §.17(1)).

7. Although there are no specific guidelines for lands owned by the corporation, the general objectives of the corporation (C.C.S.M. c.H3 §.3 quoted above) function as guiding principles for land management. These principles may be inadequate to provide specific guidance to managers and clarity to stakeholders in decisions affecting the protected areas.

8. No requirement is made to consult or seek input from scientists or other members of the public in management of corporation lands.

9. 10. 11. and 12. The Act makes no mention of an advisory committee to assist in management decisions, but as authority for administration rests with the board, such a committee may be struck by policy.

4.7 THE CONSERVATION DISTRICTS ACT

Conservation Districts are a land management tool enabled by the Conservation District Act. Districts are initiated by local municipalities to accomplish conservation objectives, and typically geographically organized around watersheds. Each district is administered by a board with representatives from each included municipality, including councillors and ratepayers. Conservation is accomplished through a wide range of powers, one of which involves acquisition and management of land. Such lands can then be designated as a "'protected area' [which] means an area that has been designated in the regulations as a 'protected area' and managed primarily for its beneficial effects for resource conservation" (C.C.S.M. c.C175 §.1). At present, no lands have been so designated (Dugay, *pers. comm.*), but significant lands have been purchased by the districts under the authority of this act. The lands owned by the conservation districts would qualify as protected areas for the purposes of this study, although not designated with that terminology in the regulations. Although distinction is made here between lands simply purchased, and those purchased and subsequently designated as protected areas, the differences are minimal.

4.7.1 Evaluation of Conservation District Legislation

1. Conservation objectives may be undertaken on Crown land, lands owned by the board, or private lands. The Conservation Districts only retain lead land management authority on lands owned by the board, and the protected area designation is likewise only available for lands owned by the board (Barto, *pers. comm.*). These lands would qualify as provincial land resources for the purposes of this study.

2. and 3. "A board or the Crown for the purposes of a scheme, may acquire lands by purchase, lease, expropriation or otherwise" (C.C.S.M. c.C175 §.23).

4. No option is included in the legislation for provisional or emergency designations

5. Since lands are not general Crown lands, many pieces of legislation that are inimical to protection do not apply. The Act does not prevent those with general application from applying, thus failing to meet the criteria.

6. The process for protected area designations is provided by a regulation from the Lieutenant Governor in Council. This regulation currently requires a municipal by-law to designate or undesignate lands as protected areas (C.C.S.M. c.C175 14/88R §.11(1)). Lands simply owned would also not require cabinet approval for downgrading of protection or sale.

7. The Conservation Districts Act does not provide intentions and guidelines for management of protected areas beyond the general "... managed primarily for its beneficial effects for resource conservation." (C.C.S.M. c.C175 §.1). Overarching objectives for the Conservation District as a whole are included in the legislation, but do not specifically apply to protected lands, and are not sufficient to meet the requirements for guidance to managers on lands owned by the corporation.

8. No requirement is made for input from scientists or others in decisions regarding Conservation District protected areas. The board is the ultimate authority and may choose to consult such groups on land management decisions.

9. 10. 11. and 12. No advisory committee is included in the legislation, but as authority for the districts rests with a board, such a committee may be struck by policy. The Act does provide for a provincial Conservation Districts Commission to provide advice and guidance to the boards, but no authority rests with this commission to affect land acquisition or management.

4.8 THE HERITAGE RESOURCES ACT

The Heritage Resources Act contains broad authority for protection and management of specific sites and lands as noted in the definitions. "'[H]eritage resource' includes (a) a heritage site, (b) a heritage object, and (c) any work or assembly of works of nature or of human endeavour that is of value for its archaeological, palaeontological, pre-historic, historic, cultural, natural, scientific or aesthetic features, and may be in the form of sites or objects or a combination thereof" (C.C.S.M. c.H39.1 §.1). The term 'heritage' is not defined in the Act.

4.8.1 Evaluation of Heritage Resources Legislation

1. The minister may "designate any site as a heritage site for the purposes of this Act" (C.C.S.M. c.H39.1 §.2), with site being defined as "an area or a place, or ... a parcel of land ... whether it is privately owned or owned by a municipality or owned by the Crown or an agency thereof" (C.C.S.M. c.H39.1 §.1).

2. and 3. "Where the minister deems it to be in the best interests of a heritage site, the minister may, with the approval of the Lieutenant Governor in Council ... acquire the heritage site for and on behalf of the government by gift, devise, purchase, lease, exchange, expropriation under the Expropriation Act, or otherwise" (C.C.S.M. c.H39.1 §.22).

4. The provisional tool available under this Act is the *Notice of Intent*. "Upon determining ... to designate a site as a heritage site, the minister shall [issue] a Notice of Intent" (C.C.S.M. c.H39.1 §.4), which includes publication in the local press. The Notice of Intent provides protection equal to formal designation, as noted in C.C.S.M. c.H39.1 §.14(1) "No person shall carry out any work, activity, development or project ... upon or within a site that is subject to a subsisting Notice of Intent or that is a heritage site ... unless and until the minister has issued a heritage permit ... authorizing the work ..."

5. Although statutes that are inimical to protection are not specifically excluded, the Act is binding on the Crown (C.C.S.M. c.H39.1 §.66), leaving all activities of the Crown open to the ministerial review and permit process described in §.14(1). The administration of the Act is still "subject to any subsisting municipal zoning by-laws or other subsisting zoning restrictions enacted or made pursuant to an Act of the Legislature"(C.C.S.M. c.H39.1 §.64). This would still meet the *exclusion of inimical statutes* criteria in this study.

6. Cabinet approval for withdrawal is not required. Instead, "the minister may at any time, on the initiative of the minister, determine that the designation of a site as a heritage site under this part should be revoked or varied"(C.C.S.M. c.H39.1 §.11).

7. There is little mention in the Act of intentions or guidelines for management of heritage resources. As all development activity at a heritage site requires a heritage permit from the minister §.14(1), the guidelines for providing heritage permits may act as a operational guideline for management. These guidelines are also absent from the Act.

8. The Act makes provisions for public hearings, which are "... open to members of the public, and any person, group, society, organization or agency interested in the subject matter ..."(C.C.S.M. c.H39.1 §.58(3)). These hearings are not mandated for any particular management decision, and thus fail to meet the criteria.

9. An advisory committee is struck under the Act, known as the Manitoba Heritage Council (C.C.S.M. c.H39.1 §.56(1)).

10. and 11. No breakdown in the membership between civil servants and non-civil servants is given in the legislation.

12. "The minister or the Lieutenant Governor in Council may refer to the council for its consideration and advice ..."(C.C.S.M. c.H39.1 §.56(9)). No requirement is made to consult with the council.

4.9 SUMMARY

The range of legislation to provide for land protection in Manitoba is broad, as seven separate Acts allow for designation of protected areas. Although a number of designations are available in the legislation with differing levels of protection due to their institutional structure, each has a unique set of characteristics that is suitable to different applications (Table 5). Ecological Reserves are highly protected in structure, but are likely somewhat more difficult to apply due to there being no provisional designation. The legislation also fails to require use of advisory committees to the fullest, despite the fact that the primary intention of such areas is scientific undertakings. Provincial Parks are also well protected in structure in the legislation and provide a useful tool for setting aside reserves that maximizes public input. This tool is particularly suited to protection of whole ecosystems. Wildlife Management Areas are specifically suited to protection with a focus on one particular resource, but fail to provide many of the structures that guarantee protection in the legislation. Provincial Forests also focus on one component of the ecosystem, but in this case with an eye to sustained harvest with minimal impacts on other components. The main weakness in this legislation is the failure to provide for public consultation or input from an advisory committee.

Table 5 - Evaluation of Legislation - Summary

Conservation Area Types	Ecological Reserves	Provincial Parks	Wildlife Act lands	Provincial Forests	Habitat Heritage Corp.	Conservation Districts	Heritage Resources
Can Apply on Crown Land	X	X	X	X	X	X	X
Donations of land	X	X	X	X	X	X	X
Expropriate Lands	X	X	X	X		X	X
Provisional Protection		X					X
Other Statutes Excluded	X						X
Cabinet App. Withdrawal	X	X		X			
Objectives in Act	X	X		X			
Input from Scientists and Users		X					
Advisory Committee	X	X					X
Non-Civil Servants Adv.							
Majority Non-Civil Servants							
Adv. Comm. Approve Withdrawal							

The Manitoba Habitat Heritage Act provides a unique tool for protecting lands, that of a Crown corporation, but the legislation fails to guarantee a high degree of protection to those lands, as there are few requirements for consultation with cabinet, the public, an advisory committee, or scientific specialists, as well as failing to meet other criteria above. Conservation Districts are another of Manitoba's interesting designations, transferring much of the management authority for the land to essentially municipal jurisdiction. Although creative, this technique fails to provide many of the structures that guarantee protection. The designation as a Conservation District Protected Area under

the Act may provide a higher level of protection than simple ownership, as cabinet approval becomes necessary for withdrawal, but still no input is provided from the public or advisory committees in the legislation. Finally, the Heritage Resources Act presents as one of the stronger pieces of legislation in this suite, however much of this power rests with the Minister, failing to guarantee protection. As well, the Act fails to identify clear objectives by which to judge the minister's actions (it fails to even define *heritage*), and also fails to guarantee input from the public or the advisory committee which is established under the Act. These conditions may be rectified in practice, but this is weaker than guaranteed provisions in the Act.

Table 5 summarizes the data from the evaluation. It is evident that the strength of the legislation varies across those evaluated. None of the pieces of legislation is able to meet all of the criteria identified, and the three criteria that deal with the structure and function of the advisory committee are not included in any of the legislation. Required outside input is rarely included in the Acts, whether this is from the general public, scientific advisors, or an established advisory committee. In fact, the only legislation requiring such input is the Provincial Parks Act. Other criteria that are rarely met include provisional protection options, exclusions of other statutes, inclusion of clear objectives in the legislation, and required cabinet approval for withdrawals. In effect, much of the major decision-making power in the majority of these Acts rests solely with the minister with no requirements to consult with anyone. Consultation is likely used extensively in practice, but without statutory requirements, there is little consistency regarding who is consulted and to what extent in any decision. Clearly this has the potential to diminish the likelihood of achieving the long-term protection goals within many of the areas.

A high degree of protection as provided by the structure imposed in the legislation does not necessarily guarantee the *untrammeled by man* quality of an area. Ecological Reserves may provide a place to study regeneration of open pit mining, and thus be placed over a disturbed area, or allow this activity within an established reserve. Likewise, Habitat Heritage lands may be as untrammeled as any in the province.

Structurally, though, Ecological Reserves and Provincial Parks are required to receive more attention and review of activities, and a higher level of accountability for these activities, than any other designation, while Habitat Heritage lands have the lowest requirements.

CHAPTER V: INTERACTIONS WITH MINING STATUTES

5.1 INTRODUCTION

This chapter is an examination of the interactions between each protected area statute and the mining statutes in Manitoba, particularly the Mines and Minerals Act C.C.S.M. c.M162. Although an ordinal evaluation is not possible, the guidelines used in practice to manage the mineral resources in each type of area are outlined. The intention is to identify the information necessary in considering the suitability of each designation for application in the Northwest Territories.

The organization of this chapter is by designation, and parallels that in Chapter 4. One variation is made as both Ecological Reserves and Provincial Parks are managed by the Parks Branch of Manitoba Natural Resources, and are combined under that heading.

5.2 PARKS BRANCH, MANITOBA NATURAL RESOURCES

5.2.1 Introduction

Ecological Reserves and Provincial Parks are under the authority of the Minister of Natural Resources, managed by the Parks and Natural Areas branch of the Department of Natural Resources (Manitoba Natural Resources, 1996b). This branch is mandated as "the steward of Provincial Parks and designated natural areas for the long-term benefit of Manitobans" (Manitoba Natural Resources, 1996c:43). More specifically, the branch ensures that the provincial parks and ecological reserves "preserve unique and representative natural and cultural resources of Manitoba, conserve and manage the flora and fauna and other resources ... and provide a range of outdoor recreational and educational opportunities" (Manitoba Natural Resources, 1996c:43). The branch is administered by a central staff, with representation in each region of the province on an Integrated Resource Management Team (IRMT) that deals with specific, local issues (Hernandez, *pers. comm.*).

The primary management objectives for this branch clearly lie in preservation of natural features and functions. Any mechanism established for management of the

mineral resource can thus be expected to be based on accomplishing these objectives. Overall guidelines and intentions for management of these areas are provided in their respective Acts as established in the previous chapter.

5.2.2 Ecological Reserves

5.2.2.1 Creation of New Ecological Reserves

Ecological Reserves are created through a process outlined in the Ecological Reserves Act. New Ecological Reserves are created through Lieutenant Governor in Council regulations, possibly on the recommendation of the Ecological Reserves Advisory Committee, which is also enabled by the Act. Once created, Ecological Reserves are managed by ministerial regulations.

The overall approach to management of Ecological Reserves is through specific cautious review of all activities. All human activities within reserves (including admission) are prohibit by the Act except those expressly permitted by ministerial regulation or a specific ministerial permit (C.C.S.M. c.E5 §.8(1)).

5.2.2.1.1 Avoiding Mineral Potential

Ecological Reserves are typically small parcels of land with a distinct and isolated feature which is the target of protection. Although there are no statutory requirements for public consultation, the branch is inclined to consider other values when proposing and designating reserves, similar to the process for Provincial Parks outlined below (Schroeder, *pers. comm.*). Despite a desire to avoid areas of high mineral potential, Ecological Reserves have been created on relatively high mineral potential lands (Palsa Hazel Ecological Reserve in the Grass River greenstone belt) (Huebert, *pers. comm.*). A possible justification is due to the nature of the isolated and unique environments that the Ecological Reserve is intended to protect simply not being available elsewhere.

In practice, the candidate Ecological Reserve is typically placed under a Crown Land reservation as outlined in the Crown Lands Act. Following approval from the

Advisory Committee, the proposal is forwarded for interdepartmental review, including circulation to the Department Energy and Mines. In the case of conflicting resources, such as high mineral potential, the proposal is typically rejected unless a compromise is possible through boundary changes, removing conflicting commitments, or postponement to allow other commitments to expire. Two cases of note illustrate this procedure. Wampum Red Pine Ecological Reserve failed to receive passage until it could be established that the sand and gravel deposits would not be required for future road construction, and Reindeer Island Ecological Reserve on Lake Winnipeg required boundary changes to allow for a planned commercial fishing station and buffer zone (Thomasson and Shay, 1984).

5.2.2.1.2 Grandfather Mineral Rights

Mining is not a permitted activity in Ecological Reserves. Although there is no statutory requirement regarding the handling of existing mineral claims and leases when designating new ecological reserves, it is quite clear that further development of any claim would not be permitted. It is unclear what measure would be used to deal with holders of existing mineral rights, as this situation has not arisen in Manitoba (Huebert, *pers.comm.*).

5.2.2.2 Existing Ecological Reserves

Within the Ecological Reserves legislation, any activity may be allowed through ministerial permission when "in his opinion it is necessary for the purpose of maintaining and administering the reserve or implementing within the reserve any measure, program, project, undertaking..." (C.C.S.M. c.E5 §.8(2)) consistent with the intentions for the Ecological Reserves program. Barring a research program on impacts, mining is highly unlikely as an allowable activity (Hernandez, *pers. comm.*)

5.2.2.2.1 Right to Stake Removed

Under the Mines and Minerals Act, "A licensee may explore for minerals on, in or under Crown mineral land and may stake out and record a claim on Crown mineral land, other than ... land that is established as an ecological reserve, as provided by regulation made under The Ecological Reserves Act" (C.C.S.M. c.M162 §. 61(1)). Crown mineral land is defined as "land in which the Crown holds a mineral interest with or without surface rights in respect of the land" (C.C.S.M. c.M162 §.1) in the Mines and Minerals Act. Thus staking is prohibited.

5.2.2.2.2 Removing Designations

Ecological Reserves are created and repealed through Lieutenant Governor in Council regulations. In cases of significant inconsistent uses being proposed, such as mineral development, complete removal of the designation is available through this channel. However, as ecological reserves are closed to exploration, specific knowledge of the mineral characteristics underlying the reserve is unlikely, likewise development opportunities or proposals

5.2.2.2.3 Cross Boundary Issues

Crown land activities that may impact on Ecological Reserves are not under the authority of the Parks and Natural Areas Branch. Instead, these activities are controlled by the Lands Branch of the Department of Natural Resources. In considering the issuance of permits, the Lands Branch staff circulate proposals to a number of interested departments, including the IRMT for the affected area. As there is representation from the Parks and Natural Areas Branch on these local teams, a route for comment is available (Krakowka, *pers. comm.*). In addition, the provincial Environment licencing process may provide for consideration of cross-boundary issues in developments near Ecological Reserves.

5.2.2.2.4 Unintended consequences

As mineral developments are not allowed in Ecological Reserves, the possibility of unexpected consequences of this type of development is low.

5.2.3 Provincial Parks

5.2.3.1 Creation of New Provincial Parks

The process of creating new provincial parks is outlined in the Provincial Parks Act. The regulations designating and classifying land uses in provincial parks are under the authority of the Lieutenant Governor in Council, with the option of using a provisional designation while studying the proposal where necessary. On any regulations other than the simple six-month provisional designation, "the minister shall provide an opportunity for public consultation and shall seek advice about proposed regulations" C.C.S.M. c.P20 §.9(1).

5.2.3.1.1 Avoiding Mineral Potential

In the creation of new provincial parks, the area is first designated as a park reserve under C.C.S.M. c.P20 §.8(1). This allows for a six month period of public consultation that may be renewed for up to five years. During this reserve status, any or all provisions of the Provincial Parks Act can be made to apply to the reserve.

The period of public consultation of park reserves includes consideration of the mineral resource in the area, and ways to avoid lands with high mining potential. As three of the six land use categories available in park zoning allow for mineral development (resource management, recreational development, and access), these lands do not necessarily require removal from the park, but appropriate zoning to reduce conflict with the mineral potential. The Parks and Natural Areas branch works closely with tie mining departments of the provincial government to attempt to avoid lands with high mineral potential in both establishing reserves and in further research between the reserve designation and park designation stages (Hernandez, *pers. comm.*). Where

avoidance is not possible, reserves may be designated over these lands with the intention of attempting compromise during the review process (Schroeder, *pers. comm.*).

5.2.3.1.2 Grandfathering mineral rights

In creation of parks, mineral claims can be included in three of the six land use categories. When parks are zoned, these categories are used over areas where current mineral rights exist. No cases have arisen where a land use category which is incompatible with mining has been placed over an existing mining claim (Hernandez, *pers. comm.*), but during the Park Reserve phase, changes have been required to proposed zoning plans to recognize and allow for Resource Management zoning of existing mineral rights (Huebert, *pers. comm.*).

5.2.3.2 Existing Parks

Within provincial parks, activities may be permitted that are not inconsistent with the land use category for the specific area. The permit process is governed by Manitoba Natural Resources Procedure Directive 13/01/003 dated July 25, 1984. In the directive, "authorization for the following activities by any branch or department shall require concurrence and endorsement by the Director of Parks: ... mining, peat, and quarry operations ..." (Manitoba Natural Resources, 1984:1). The process for permitting requires submission of a written project proposal by the proponent, which is reviewed by the Director of Parks. In order to ensure minimal impact on resources and recreation patterns, "terms and conditions shall be applied to all work permits issued" (Manitoba Natural Resources, 1984:2), including "the location, timing, nature, scale, and methods of the proposed activity, including support activities and any waste disposal ... site abandonment, including clean-up and restoration" (Manitoba Natural Resources, 1984:3).

5.2.3.2.1 Right to Stake and Explore

Under the Mines and Minerals Act, regulation C.C.S.M. c.M162-150/96 §.7(1) states that "no person shall undertake any work or survey for the purpose of prospecting and staking of land for mineral claiming in a provincial park unless that person does so under the authority of a permit issued by the minister". In effect, all provincial parks are closed to staking without the approval of the minister. In practice this approval occurs through the permitting process described above.

5.2.3.2.2 Removing the Designations

The process of removing provincial park designations, or reducing the level of protection through changes to zoning, is available in cases where newfound mineral deposits warrant exploitation. Of course, this is somewhat unlikely, as exploration would not be allowed in the area to discover the deposits, but the department is aware of the possibility of identified high value mineral belts extending under parks. The Parks Branch has considered the possibility of allowing underground mining of areas where no surface disturbance would be necessary (continuation of shaft and adit systems under the existing park), but this possibility remains theoretical (Schroeder, *pers. comm.*).

Removing protection occurs by repeal or revision of the regulations which designate and provide land use classes to the area. Original designation of the park occurs through Lieutenant Governor in Council regulation under §.7 of the Provincial Parks Act, so the same level of authority would be required for removal. Although this requires simply passing repeal regulations, §.9(1) requires that "before a regulation is made under section 7 ... the minister shall provide an opportunity for public consultation and shall seek advice about proposed regulations". In addition, although this is not binding in the Act, the minister may consult with advisory committees on these issues to consider scientific, recreational, or economic impacts of repealing park regulations.

One additional consideration must be made. As described above, the process of developing a mining operation, or any major undertaking under the Environment Act

requires consideration under that Act, which can include public hearings. Under the Provincial Parks Act §. 9(2):

> If an assessment is required under *The Environment Act* for a development in a provincial park and the development cannot be carried out without a regulation also being made under section 7 of this Act, the minister may determine that the assessment under *The Environment Act* is an appropriate substitute for public consultation under (this Act) ...

The effect of this section is to potentially remove the requirement from the minister to hold public consultations dealing distinctly with the changes to the Provincial Park regulations if an analogous process is required. Although this may serve to streamline the process of approving developments, it is also possible that Provincial Park issues would be minimized in such a complex process.

5.2.3.2.3 Cross Boundary Issues

The authority of the Provincial Parks Act is limited to lands within provincial parks, according to the Provincial Parks Act C.C.S.M. c.P20 §.2. Developments outside of provincial parks that have the potential to threaten the integrity of lands or resources within the parks are not directly under any jurisdiction of the *Parks and Natural Areas Branch*. Permitting for use of Crown lands is undertaken by the Lands Branch, which includes consultation with the district IRMT which includes representation of Parks Branch staff. In addition, the proximity to provincial parks of large resource developments has been a point for review through the Environment Act licencing (CEC, 1992:10)

5.2.3.2.4 Unintended consequences

In the case of developments in Provincial Parks, the *Parks and Natural Areas Branch* is authorized to place conditions on developments as indicated above. The same Procedure Directive includes the following comment on renewal: "The Parks Branch General Work Permit shall be eligible for annual renewal subject to review by the issuing authority" (Manitoba Natural Resources, 1984:2). In practice, compliance with the terms

and conditions on development are monitored by Natural Resources field staff (Hernandez, *pers. comm.*), but changes to permit conditions as a result of increased information about impacts are rare.

5.3 WILDLIFE BRANCH, DEPT. OF NATURAL RESOURCES

5.3.1 Introduction

The Wildlife Branch of the Department of Natural Resources "... manages the wildlife resource with priority on conservation of species and ecosystems ..." (Manitoba Natural Resources, 1996c:73). More specifically, "the Branch protects and enhances habitat on Crown and private land to achieve wildlife production consistent with projected demand." (Manitoba Natural Resources, 1996c:73). This includes responsibilities for management of Wildlife Management Areas (WMAs), and for review and approval, from the wildlife impact perspective, of any development proposal in the province which requires consideration by the Department of Natural Resources. The branch also includes representation in the regional offices of the department, and on the IRMT (Suggett, *pers. comm.*).

The branch maintains management authority only over lands designated as WMAs. On these lands, the mineral resource is subject to a variety of restrictions and permitting processes.

The branch has made explicit agreements with Energy and Mines and Highways and Transportation regarding sand and gravel extraction in WMAs, but no such explicit agreements cover other mineral resources. The intention of this agreement from the Wildlife Branch perspective is to ensure "... primary wildlife values are not compromised in WMAs ..." (Manitoba Energy and Mines, 1997) and to make the permitting process less uncertain.

5.3.2 Creation of Wildlife Management Areas

WMAs are created under the provincial Wildlife Act. They are designated by Lieutenant Governor in Council regulations where "the wildlife resource of the province would be better managed, conserved or enhanced" (C.C.S.M. c.W130 §.2(1)). This designation "does not limit or affect the uses and activities that may be undertaken in the area" (C.C.S.M. c.W130 §.3(1)) unless otherwise provided by ministerial regulation. Current ministerial regulations prohibit certain activities in all WMAs except by permit. Specifically, the regulations state that no person shall "engage in ... mineral exploration or extraction" (C.C.S.M. c.W130-64/95 §.2(1)(d)) without a permit.

5.3.2.1 Avoiding Mineral Potential

Wildlife Management Areas do not necessarily prevent mineral developments, particularly sand and gravel which are commonly permitted. For this reason, WMA designations do not require the same degree of rigour in avoiding mineral potential as designations which prevent any such developments. Long term leases of resource use rights, whether mineral, agricultural, or any other type, are avoided in establishing new WMAs (Suggett, *pers. comm.*).

5.3.2.2 Grandfather Mineral Rights

Current mineral rights are routinely grandfathered when new WMAs are created. Extractive or exploratory activities on these holdings would require a WMA Use Permit from the Wildlife Branch, along with the usual dispositions from Energy and Mines and a Crown Land Work Permit from the local District Office (Department of Energy and Mines, 1997).

5.3.3 Existing Wildlife Management Areas

WMAs are zoned with respect to mineral developments by the Department of Natural Resources to reflect the sensitivity of each particular area. *Prohibited* areas are

those zoned to the provincial Endangered Spaces standards, critical areas for endangered species, and significant habitat sites. Other areas are zoned as *limited* to reflect some concerns about the impacts of resource extraction, or as *standard*, where the basic terms and conditions regarding mineral developments apply (Suggett, *pers. comm.*). In those areas open to development, a range of activities may be undertaken with a WMA Use Permit issued by the Wildlife Branch. These activities are outlined in the regulations. In addition, certain activities require a Crown Lands Work Permit annually, which includes all mining and quarrying (Department of Energy and Mines, 1997).

In cases requiring a WMA Use Permit, this permit may restrict the total area disturbed at any one time, the conditions on rehabilitation, and special conditions such as "the timing of mining activities and the location of the quarry or pit" (Department of Energy and Mines, 1997).

Although not binding on the Crown, a memorandum of understanding exists that obligates the Department of Energy and Mines and the Department of Highways and Transportation to seek WMA Use Permits for quarrying activities (Department of Energy and Mines, 1997).

5.3.3.1 Right to Stake Removed

The Mines and Minerals Act specifies that staking is prohibited on "land that is designated for special use under *The Wildlife Act*, to the extent that exploration, staking out or recording a claim is prohibited or restricted by regulation under *The Wildlife Act*" (C.C.S.M. c.M162 §. 61(1)(g)). Wildlife Act regulations prohibit mineral exploration without a permit everywhere, and prevent the granting of such permits in all areas which are part of the provincial Endangered Spaces program. All other areas are open to staking.

5.3.3.2 Removing Designations

WMA designations are set and removed by Lieutenant Governor in Council regulations. Restrictions on activities are set through ministerial regulations. In areas that are not currently open to mining, the minimum necessary to allow reducing of the protection standards to increase the accessibility of mineral developments is the repeal of ministerial regulations.

5.3.3.3 Cross Boundary Issues

Activities on Crown lands which may impact on WMAs are reviewed by the IRMT prior to the granting of a Crown Lands Work Permit, and in cases of identified concern by this body, can be forwarded to the WMA manager at the Wildlife Branch. Impacts on Wildlife Management Areas can be a consideration in Environment Licencing on large projects (Suggett, *pers. comm.*).

5.3.3.4 Unintended consequences

WMA Use Permits are not required for subsequent operations on an existing quarry pit or mineral operation. This permitting system does not allow for revision in cases of unintended impacts. Crown Land Work Permits continue to be required annually with the provision that they may be canceled on one months notice (C.C.S.M. c.C340 §.7(2)).

5.4 FORESTRY BRANCH, DEPARTMENT OF NATURAL RESOURCES

5.4.1 Introduction

Manitoba's Provincial Forests are administered by the Forestry Branch of the Department of Natural Resources. This branch is responsible for planning, managing, and allocating "forest resources for the long term social, economic and environmental benefit of Manitobans" (Manitoba Natural Resources, 1996c:52). Similar to other branches of the department, the Forestry Branch includes a central administration as well

as regional representation on the IRMT. Provincial Forests may be designated to overlap with other designations considered in this study. This situation currently occurs with Provincial Parks, Ecological Reserves, and Wildlife Management Areas (Manitoba Natural Resources, n.d.).

5.4.2 Creation of Provincial Forests

Legislation covering matters pertaining to Provincial Forests is contained in the provincial Forests Act. Provincial Forests are designated by Lieutenant Governor in Council regulations (C.C.S.M. c.F150 §.41(1)(q)), to be managed by a director who is designated by the minister. The Lieutenant Governor in Council may also make regulations "respecting ... the control and management of the flora and fauna ... and the occupancy of the lands in provincial forests" (C.C.S.M. c.F150 §.41(1)(k)). The Forests Act specifically prevents disposition or occupancy of lands within a Provincial Forest except as provided for under the Act.

5.4.2.1 Avoiding Mineral Potential

There is no prohibition on mineral developments in Provincial Forests, and therefore less of a requirement to avoid areas of high mineral potential. In fact, as Provincial Forests tend to be designated on the lower classes of agricultural land (Manitoba Natural Resources, 1989), they typically are in areas of high potential for quarry minerals.

5.4.2.2 Grandfather Mineral Rights

The designation of lands as a Provincial Forest does not prevent private holdings of mineral rights. To date, no mineral rights have been expropriated, canceled or significantly affected by the designation of Provincial Forests (Vogel, *pers comm.*). Some Provincial Forests are closed to all activities by virtue of being simultaneously designated as a Wilderness zoned Provincial Park or Ecological Reserve. As this situation is not

driven by Provincial Forest management, it will not be considered in this section, but in the appropriate section above.

5.4.3 Existing Provincial Forests

Surface rights dispositions in Provincial Forests are handled by the Lands Branch of Natural Resources. As with all Crown Land Work Permit applications, proposals for Provincial Forests are considered by the IRMT which includes a Forestry Branch representative. The main considerations in reviewing mineral development proposals are the impacts on the supply of timber, the health of the forests, and access for timber harvesting (Bulloch, *pers. comm.*). Provincial Forest officials retain the ability to issue permits and restrictions on use, currently administered through the general occupancy permit required for any surface operations in Provincial Forests (Bulloch, *pers. comm.*).

5.4.3.1 Right to Stake Removed

Provincial Forests do not remove the right to stake. Administrators retain the ability to restrict entry for staking, or to place permit requirements on persons wishing to explore for, stake, or develop mineral deposits (as per the Mines and Minerals Act and the Forests Act), but do not have specific requirements at this time beyond the Crown Lands Work Permit (Bulloch, *pers. comm.*).

5.4.3.2 Removing Designations

Provincial Forests are designated and removed through Lieutenant Governor in Council regulations (C.C.S.M. c.F150 §.41(1)(q)). It is unlikely that this process would be undertaken to allow for development of a mineral deposit for two reasons. The designation places few restrictions on mineral developments which would be lifted in the case of removing the designation, and the restrictions that are in place are generally requirements to protect the wood supply and the provincially licenced harvesters of

timber (Bulloch, *pers. comm.*). These requirements would likely be similar whether designation is in place or not.

5.4.3.3 Cross Boundary Issues

Similar measures are in place to prevent cross-boundary problems as in the other designations. Review of Crown Lands Work Permits by the IRMT allows for input from provincial foresters whose responsibility includes the Provincial Forests program. Unlike the other designations, no mention is made in the Environment Act regulations or the documents of the Clean Environment Commission to the regards that Provincial Forest designations are a consideration in the Environment Act licencing process.

5.4.3.4 Unintended consequences

Operations which cause unintended impacts in Provincial Forests can be addressed through the annual Crown Lands Work Permit review. This review is completed in conjunction with the IRMT (Krakowka, *pers. comm.*). In addition, the occupancy permits also require annual renewal (Bulloch, *pers. comm.*).

5.5 MANITOBA HABITAT HERITAGE CORPORATION

5.5.1 Introduction

The Manitoba Habitat Heritage Corporation is charged with the "conservation, restoration, and enhancement of Manitoba's fish and wildlife habitat and the fish and wildlife populations thereof ..." (C.C.S.M. c.H3 §.3). There is no mandate in the Habitat Heritage legislation or policies to address or consider the mineral resource aspects of managing the lands acquired by the corporation (Colpitts, *pers. comm.*). In practice, few of the lands currently owned by the corporation would be considered to be high in mineral potential, so little consideration has been given to management of the mineral resource. Oil and gas potential is present, and has been grandfathered on lands acquired with active wells (Colpitts, *pers. comm.*).

5.5.2 Acquisition of New Habitat Heritage Lands

Lands are acquired by the corporation through purchase, donation or transfer from any individual or agency (C.C.S.M. c.H3 §.17(1)). These lands are then held in the name of the corporation (C.C.S.M. c.H3 §.17(2)) and administered to accomplish the purposes of the corporation as directed by the board of directors. These lands are "acquired and held in the name of the corporation" (C.C.S.M. c.H3 §.17(2)), but as the corporation is an agent of the Crown, would still fit the definition of Crown lands for the Crown Lands Act and the Mines and Minerals Act.

5.5.2.1 Avoiding Mineral Potential

No responsibility is established for the corporation to avoid lands of high mineral potential. Despite this, lands of high value for other uses are not typically pursued due to public perception reasons (Colpitts, *pers. comm.*). Disadvantages also exist for investing in such lands, as uncertainty regarding their possible use for mineral developments exists. This is a function of the inability of the corporation to conclusively withdraw access for mineral developments, or to have discretionary authority with regards to mineral operations. Effectively, it is unlikely that high value mineral lands, with likely future developments, would be actively pursued by the corporation.

5.5.2.2 Grandfather Mineral Rights

In lands acquired by the corporation, there is no direct process to remove existing mineral rights. The corporation can request that the minister responsible for the Mines and Minerals Act cancel the mineral access rights of the holder through C.C.S.M. c.M162 §.144(1) as being "in the public interest to do so".

In a somewhat analogous situation, oil and gas wells do exist on Habitat Heritage lands and were grandfathered when the lands were acquired (Colpitts, *pers. comm.*).

5.5.3 Existing Habitat Heritage Lands

Lands currently owned by the corporation receive various treatments to conserve and manage for wildlife and habitat. Although certain mineral developments would be inconsistent with these operations, there are currently no provisions in place to prevent these developments (Colpitts, *pers. comm.*). Oil and gas developments do exist on the lands, but the impacts of these grandfathered operations on the corporation's programs is likely low (Colpitts, *pers. comm.*).

5.5.3.1 Right to Stake Removed

The right to stake on Habitat Heritage lands has not been removed, nor has access rights to any claims currently in existence (Colpitts, *pers. comm.*).

5.5.3.2 Removing Designations

Lands owned by the corporation can be disposed of when no longer serving a significant purpose towards the outlined objectives of the corporation "notwithstanding anything to the contrary in the Crown Lands Act" (C.C.S.M. c.H3 §.17(1)). Although this process would not be necessary to provide for mineral developments, it may be chosen to respond to developments that compromise the value of lands for wildlife conservation.

5.5.3.3 Cross Boundary Issues

The Habitat Heritage Corporation would not be directly represented in decisions affecting the uses of Crown or private lands that may have consequences for lands owned by the corporation. As these lands are often owned by the corporation as part of a multi-agency program which commonly includes the provincial Wildlife Branch of Manitoba Natural Resources, it is expected that the interests of the corporation may be represented by the Wildlife Branch representatives on the IRMT in crown land management (Colpitts,

pers. comm.). This representation falls clearly within the mandate and responsibility of the Wildlife Branch.

5.5.3.4 Unintended consequences

In the case of unintended consequences to wildlife habitat on corporation holdings caused by developments on or off the lands, there is likely little recourse available to prevent or reduce further damage, as discretionary power in the form of a permitting process is not provided to the Corporation in the statutes.

5.6 CONSERVATION DISTRICTS

5.6.1 Introduction

Conservation Districts are a land management tool enabled by the provincial Conservation Districts Act. The objectives for forming conservation districts varies, but generally revolve around soil and water conservation and wildlife habitat issues. Districts are initiated jointly by the provincial government Rural Development department and the local municipalities affected. Boundaries for conservation districts are generally oriented around watersheds.

Each conservation district is administered by a board representing local municipalities and landowners. This board is the authority for approving land management schemes, although the schemes are open to review by the provincial Conservation Districts Commission and approval by the Minister (C.C.S.M. c.C175-14/88R §.12(1)).

5.6.2 Acquisition of New Conservation District Lands

Conservation Districts acquire land through purchase, exchange, donation, or expropriation (C.C.S.M. c.C175 §.23). Acquired lands are utilized in administering the scheme outlined by the local board. Lands may be further designated as a Conservation District Protected Area under a process determined by the Lieutenant Governor in

Council (C.C.S.M. c.C175 §.45(e)). In the regulations, it is authorized that "subject to the approval of the commission, a board may recommend to a municipality ... a by-law designating a protected area" (C.C.S.M. c.C175-14/88R §11(1)), which would include "the method of administering the protected area" (C.C.S.M. c.C175-14/88R §.11(2)(d)).

5.6.2.1 Avoiding Mineral Potential

Lands are acquired by the Conservation Districts to enable the conservation objectives as outlined in the scheme. The presence of mineral potential has not been a consideration in acquisition of lands to date (Dugay, *pers. comm.*). In many cases lands are acquired for a unique feature that is not available on any other parcels, such as watercourses or isolated wildlife habitats, or lands that are in unique taxation situations with the municipality. Selection of alternate lands to avoid mineral potential is not possible in these cases.

5.6.2.2 Grandfather Mineral Rights

There is no direct option available to Conservation Districts to reduce or eliminate existing mineral rights. Similar to Habitat Heritage lands, application could be made to the minister responsible for administering the Mines and Minerals Act to cancel the mineral access rights of the holder as per C.C.S.M. c.M162 §.144(1).

5.6.3 Existing Conservation District Lands

Lands administered by the Conservation Districts are under the authority of the local board. In all cases, ownership of land is at most a small part of achieving the conservation objectives of a district. Owned lands are typically those that cannot be managed to achieve the same objectives in any other way (leases, easements, voluntary measures) (Dugay, *pers. comm.*).

5.6.3.1 Right to Stake Removed

At present, no lands are closed to staking as a result of being owned by a Conservation District (Dugay, *pers. comm.*). These lands could be closed through the initiatives of the minister responsible for the Mines and Minerals Act, but no direct route is available to the district to prevent staking in either the Mines and Minerals Act or the Conservation Districts Act.

5.6.3.2 Removing Designations

Lands owned by any conservation district may be disposed of on the decision of the board (Dugay, *pers. comm.*). Lands designated as Protected Areas would require additional authorization from the municipality to remove the designation. As neither ownership nor designation as a Protected Area necessarily prevents mineral developments, it is unlikely that this removal would be an approach to opening lands to exploration or development.

5.6.3.3 Cross Boundary Issues

Lands managed by other agencies, including Crown Lands, are not within the authority of Rural Development or the municipalities of the province. Consideration of Crown Lands Work Permit applications by the IRMT does provide for circulation to the affected municipalities and Local Government Districts, which would allow the opportunity for input regarding Conservation District lands (Dugay, *pers. comm.*;Krakowka, *pers. comm.*). Activities on lands with privately owned surface rights would not have such consideration, but would be subject to licensing under the Environment Act, which considers existing land uses in the area (C.C.S.M. c.E125-163/88 §.1(1)(e)).

5.6.3.4 Unintended consequences

In the case of unintended consequences from mineral development activities on Conservation District lands, it is unlikely that any recourse or relicensing would be possible under the authority of the district board.

5.7 HERITAGE RESOURCES

5.7.1 Introduction

Heritage Resource Areas are managed by the Historic Resources Branch of Manitoba Cultural, Heritage and Citizenship. These areas can be designated by either the province in the case of provincially significant sites, or by a municipality where locally significant. Although any activity can be considered under a ministerial heritage permit, mining is an unlikely activity, and these areas have been identified by Manitoba Energy and Mines as unavailable for development (Manitoba Energy and Mines, 1997b).

5.7.2 Creation of Heritage Resource Sites

5.7.2.1 Avoiding Mineral Potential

Heritage Resource sites are isolated occurrences that would not allow for selecting alternate lands to avoid mineral potential. As these sites are typically small and site specific to date, there is less concern that valuable deposits will become completely unavailable due to designation (Dickson, *pers. comm.*). In the case of larger, natural heritage based areas, the current practice has been to encourage designation by Natural Resources. Should these areas receive Heritage Resource Area designations in the future, cooperation with mineral interests would be expected (Dickson, *pers. comm.*).

5.7.2.2 Grandfather Mineral Rights

Heritage Resource Areas to date have not been designated over existing mineral rights. It is unlikely that any ground disturbance associated with mining would be permitted under the Heritage Resources Act or the Environment Act licencing process

(Dickson, *pers. comm.*). As a result, it is presented in the Manitoba Energy and Mines literature that "mineral exploration is not legally permitted within lands designated as a heritage site" (1997b). Although there is no precedent, mineral claims would likely not be grandfathered into such an area.

5.7.3 Existing Heritage Resource Areas

Heritage Resource Areas are managed to prevent destruction of the unique characteristics of concern at each site. Activity is not prohibited where it fails to present such a concern. Activities that may be of concern are required to apply for a Heritage Permit from the minister (C.C.S.M. c.H39.1 §.12(1)), which would include a Heritage Resource Assessment completed at the cost of the applicant. This assessment is intended to identify the heritage resources at risk, to evaluate the risk, and to identify possible mitigation measures.

5.7.3.1 Right to Stake Removed

Manitoba Energy and Mines notes in their literature that Heritage Resource Areas are legally closed to mineral exploration (1997b). As this is not expressly provided in either the Heritage Resources Act or the Mines and Minerals Act, it is possible that these lands fall under the ministerial withdrawal provision in the Mines and Minerals Act (C.C.S.M. c.M162 §.14(1)).

5.7.3.2 Removing Designations

Heritage Resource designations are established through ministerial regulation (C.C.S.M. c.H39.1 §.2), typically as a result of recommendations from the Historic Resources Advisory Committee (Dickson, *pers. comm.*). Removal of the designation would be possible by the minister, but as the minister maintains the authority to provide permits authorizing any activity within the site, removal by this method to allow for developments would be unnecessary. Removal of the designation would reduce the

perception of the heritage value of the site, and thus likely provide less opposition to developments

5.7.3.3 Cross Boundary Issues

Under the Heritage Resources Act, the minister may designate land for protection "where a site has no heritage significance ... but the minister is satisfied that it should be designated as a heritage site for the purposes of this Act because of its proximity to, and for the protection or enhancement of ... another ... designated ... heritage site" (C.C.S.M. c.H39.1 §.3). In addition, the presence of heritage resources is a consideration in licensing under the Environment Act (Dickson, *pers comm.*).

5.7.3.4 Unintended consequences

Where heritage permits have been granted for an activity, there is no periodic review process required in the legislation. The branch does conduct ongoing analysis of each site to identify threats to the heritage resources, including permitted activities. Identified threats would be subject to a ministerial stop-order and subsequent review before further work is initiated (Dickson, *pers. comm.*).

5.8 SUMMARY

Manitoba's protected areas designations vary greatly in their treatment of the mineral resource. Although none is completely isolated from the potential impacts of exploration or mining, Ecological Reserves, Provincial Park wilderness zones, and Heritage Resource Areas prevent such activities within their boundaries. Other crown land designations (other Provincial Park zones, WMAs and Provincial Forests) are more dynamic in their management of minerals, permitting exploration and mining on a case-by-case basis, with additional restrictions in comparison to typical crown lands. The Habitat Heritage Corp. and the Conservation Districts are provided with less authority to manage their surface rights to protect resources from mineral developments.

Table 6 - Interaction with Mining Statutes - Summary

Conservation Area Types	Ecological Reserves	Provincial Parks[1]	Wildlife Act lands[1]	Provincial Forests	Habitat Heritage Corp.	Conservation Districts	Heritage Resources
Creation of New Areas							
Mineral Potential Avoided	Avoided	Avoided	Avoided	Not Avoided	Not Considered	Not Considered	Not Avoided
Mineral Rights Grandfathered	No	A - No B - Yes	A - No B - Yes	Yes	Yes	Yes	No
Existing Areas							
Right to Stake Removed	Yes	A - Yes B - No	A - Yes B - No	No	No	No	Yes
Remove Designation	LG in C regulation	LG in C reg. public input	Ministerial regulation[2]	unnecessary	simple disposal	simple disposal	Ministerial regulation
Cross Boundary Issues	IRMT input	IRMT input	IRMT input	IRMT input	IRMT input possible	Crown Land Permit review	Designation of add. site
Unintended Consequences	unlikely to occur	ann. review of permit	no review	ann. review of permit	none	none	Continual review

1. Provincial Parks and Wildlife Management Areas are divided into 2 types, areas allowing mineral developments, and areas that do not. A - refers to closed areas, B - to areas that are open to mining.
2. The Wildlife Act requires LG in C regulations to remove designations, but in practice ministerial regulations can remove all protection short of the line on a map.

Although not apparent from the summary in Table 6, it is quite clear that the designations are divisible into two categories, those that manage the mineral resources dynamically, and those that are more static in their management. Static management would refer to those areas that use outright bans on certain activities to achieve protection. These are the traditionally recognized Endangered Spaces type areas. Dynamic management, or assessing risks to protected areas on a case-by-base basis, is not inconsistent with high levels of protection, provided the institutional structure is in place to ensure a quality review by representative advisory committees and the general public. These are components of the evaluation criteria for legislation completed in the previous chapter.

Management that is more static and rigid, such as Ecological Areas, can provide a surficial air of greater protection, but without these same components in the legislation

are actually open to opportunism and political maneuvering, such as removal of designations. These designations are also more clumsy to apply.

The areas that are most likely to provide long-term protection and reduce concerns to the mining community are those that stay away from high potential mineral areas. Ecological functions that deserve protection are not always so cooperative, and designation of high mineral potential areas is sometimes necessary. In these cases, the more dynamically managed designations may be most appropriate, such as Provincial Park resource management zones and Wildlife Management Areas, as they have the potential to evaluate the threat from any development on a case-by-case basis without eliminating all possibility of exploiting the resource. Due to weaknesses identified in the previous chapter (eg. lack of consultation, lack of a strong advisory committee) there are drawbacks to using these designations as they are presently enacted in Manitoba. Provincial Forests also fit this dynamic management style, but they possess the same weaknesses as well as a primary objective that fails to consider larger ecosystem measures, in favour of "preserving the forest cover" (C.C.S.M. c.F150 §.23(1)). For this reason, a Provincial Forest is likely an inappropriate choice for such a situation.

Removal of the right to stake is an important means to avoid future conflicts over property rights and development opportunities, such as in *R.. v. Tener*, discussed above. Unfortunately, designations that remove all rights to stake and develop minerals typically become more dependent on an effective process to avoid areas of high mineral potential (which are expensive, time-consuming, and far from perfect) and are in practice very clumsy to apply. In contrast, Heritage Resource Area designations would not be considered clumsy.

Areas that are protected by agencies of the Crown, such as Conservation Districts and the Manitoba Habitat Heritage Corp., require a greater degree of cooperation with Manitoba Energy and Mines and Manitoba Environment in order to ensure their standards of protection. As there are no statutory prohibitions on mineral developments in these areas, and no provisions for these agencies to regulate mineral activities by an internal

permit system, there is little room for input from the protected areas managers and scientists. Coordinated removal of staking rights, or strong consideration of the conservation objectives of these organizations when licensing under the Environment Act would provide a greater certainty in protection of natural resources.

CHAPTER VI: APPLICATION OF THE DESIGNATIONS

6.1 INTRODUCTION

Simple evaluation of the effectiveness of each designation available to protect lands in Manitoba is not the only consideration necessary in looking at the provincial protected areas program. To be able to identify whether this package of designations is sufficient, it is necessary to consider whether the suite is complete and balanced. The clearest method available for this type of evaluation is the IUCN categorization (Table 1) as noted by Gauthier (1997b). As there is no absolute standard by which to measure the application of this suite, the means for comparison will be two other jurisdictions in Canada. Uncontrolled variables exist in this approach. No jurisdiction has completed their protected areas initiative, so tomorrow's evaluation may be different from today's. As well, the conservation requirements of one jurisdiction may be different from another due to some characteristic of the landscape or population.

To minimize difficulties due to variation between the case studies, the two jurisdictions chosen were likely the most similar to Manitoba in these aspects. Saskatchewan and British Columbia represent provinces of similar size (Manitoba 64,980,685 ha (Manitoba Environment, 1997:120) Saskatchewan 65,578,846 (World Wildlife Fund, 1997:50) British Columbia 94,810,612 ha (Land Use Coordination Office, unpublished)), with populations on the same order of magnitude. They both have relatively populated and disturbed areas, whether from farmland or forestry, and relatively remote, typically northern areas. In addition, there are generally comparable areas in National Parks (British Columbia - 607,020 ha (Lewis, *pers. comm.*) Saskatchewan - 478,100 ha (World Wildlife Fund, 1997:50) Manitoba - 1,456,261 ha (Manitoba Environment, 1997:119)) unlike Alberta, which meets significantly more of it's conservation objectives through National Parks than the rest of the western provinces, with 5,406,000 ha (World Wildlife Fund, 1997:50).

This approach to evaluating the application of each designation does not provide information on the success of any jurisdiction in accomplishing ecosystem protection.

Although large areas may be included in the protected land base, there is nothing in this approach to determine whether these areas are located geographically in the appropriate zones. The significance of this data is in determining whether each tool can be applied in practice, and how significant its impacts have been on the land base.

6.2 APPLICATIONS OF MANITOBA'S DESIGNATIONS

6.2.1 Ecological Reserves

There are 15 Ecological Reserves in the province totaling 59,777 hectares (Manitoba Natural Resources, 1997a) the largest being 39,600 hectares, and the smallest 20 hectares (Manitoba Natural Resources, 1990; Manitoba Natural Resources, 1997a). Manitoba Natural Resources classifies Ecological Reserves according to the IUCN system as either Ia, Ib, II, or III. Twelve reserves fit into Ia with one in each of the other three categories (Manitoba Natural Resources, 1997a).

6.2.2 Provincial Parks

Currently there are 74 Provincial Parks in Manitoba, and 6 Park Reserves (C.C.S.M. c.P20, Reg. 35/97; C.C.S.M. c.P20, Reg. 37/97). The IUCN breakdown as determined by Natural Resources staff includes 181 park areas to take into account multiple zones in some parks. Although IUCN uses only six categories in its classification system, Natural Resources has added a seventh to recognize the unique nature of recreation development zones, which are primarily oriented toward provision of visitor services, and do not fit neatly into any other IUCN category. Two other possible categories for this zoning are IUCN II "National/ Provincial/Territorial Park: protected area managed mainly for ecosystem protection and recreation" and IUCN VI "Managed Resource Protected Area: protected area managed mainly for the sustainable use of natural ecosystems". As Manitoba Natural Resources already classifies backcountry areas into IUCN II and resource management into IUCN VI, the system fails to recognize the distinction between either of these areas and recreational development (Manitoba

Natural Resources, 1997a). It appears that other jurisdictions use IUCN VI to accommodate such high impact uses as golf courses and cottage developments that Manitoba places in this seventh category (Banff Bow Valley Study, 1996), so this classification (IUCN VI) will be used for the purposes of this study.

6.2.3 Wildlife Management Areas

In Manitoba, there are 1,988,794 hectares in Wildlife Management Areas (Manitoba Environment, 1997:119), which fit into a number of IUCN categories. Areas that meet Manitoba's Special Places criteria would qualify as an IUCN II while other Wildlife Management Areas would qualify as IUCN IV (IUCN, 1994). The other tools outlined in the Act, specifically Special Conservation Areas (of which there are 3 totaling 36,058 hectares)(Manitoba Natural Resources, 1997b:9), and Refuges (of which there are 53)(Manitoba Natural Resources, 1997b: 9) fail to meet the definition of designation for this study as they do not impart management authority, only specific controls on a limited number of activities (Barto, *pers. comm.*). These areas may meet the management intentions for IUCN IV classification if they are associated with a legislative designation that imparts land management authority, such as Provincial Parks, but this is not consistent and these areas already have an IUCN classification for the other designation. As a result these areas have not been included in the numerical totals that follow.

6.2.4 Provincial Forests

Provincial Forests overlap with a number of other designations outlined above. Most significantly is the overlap with Provincial Parks. There are 14 Provincial Forests (Manitoba Natural Resources, 1990) comprising 2,201,400 hectares, with 1,704,209 hectares outside of Provincial Parks (Manitoba Environment, 1997: 119). An additional 77,529 hectares are double designated with WMAs (Manitoba Natural Resources, 1997b:45) and 807 ha with Ecological Reserves (Manitoba Natural Resources, n.d.; Manitoba Natural Resources, 1990), leaving a total of 1,625,873 ha as solely Provincial

Forests. These areas qualify as "IUCN VI Managed Resource Protected Area: maintained for the sustainable use of natural ecosystems" (IUCN, 1994).

6.2.5 Manitoba Habitat Heritage Corporation

The holdings of the MHHC include 43 sites comprising 3,908 hectares (MHHC, 1997). As these lands do not prevent any developments through legislation, they are not automatically considered in provincial protected areas literature. The lands currently protected qualify as IUCN IV as Habitat/Species Management Areas due their focus on specific species and habitats.

6.2.6 Conservation Districts

The protected area designation available under the Conservation Districts Act may place those lands into any number of the IUCN categories depending on the objectives for which the area was set aside. No lands have been so designated to date (Dugay, *pers. comm.*). On the lands owned by the Conservation Districts, there is no statutory restrictions on the activities that could possibly be undertaken. The intentions for their management place them into "IUCN VI Managed Resource Protected Area: protected area managed mainly for the sustainable use of natural ecosystems" (IUCN, 1994). These lands are valued for their landscape features, particularly in regards to surface and ground water characteristics, as well as wildlife and recreational purposes. (Dugay, *pers. comm.*). The 8 Conservation Districts (CD) in Manitoba hold varying amounts of land, including 967 ha in Turtle River CD (Boychuk, *pers. comm.*), 256 ha in Turtle Mountain CD (Davis, *pers. comm.*), 156 ha in Whitemud CD (Hildebrandt, *pers. comm.*), 94 ha in Pembina Valley CD (Greenfield, *pers. comm.*), and 64 ha in Cooks Creek CD (Lussier, *pers. comm.*) totaling 1,537 ha in IUCN VI.

6.2.7 Heritage Resource Areas

Lands designated as Heritage Resource Areas are typically small, and often are simply a lot containing a heritage structure. Provincially, there are currently 102 sites with the largest being 646 ha, the second <64 ha, and the rest significantly smaller. Although figures are difficult to calculate, there is less than 2,580 ha in total (Dickson, *pers. comm.*). These lands have been considered by the provincial Endangered Spaces program for inclusion, but represent such small parcels that little attention has been given to date (Dickson, *pers. comm.*; Hernandez, *pers. comm.*).

Table 7 - IUCN Category Breakdown - Manitoba

Protected Area Type		Ecological Reserves	Provincial Parks	WMAs	Provincial Forests	Habitat Heritage	Cons. Districts	Heritage Resources	Totals
Ia	#	12							12
	area (ha)	6,255							6,255
Ib	#	1	6						7
	area (ha)	13,860	2,575,985						2,589,845
II	#	1	28	10					39
	area (ha)	39,600	234,913	30,408					304,921
III	#	1						102	103
	area (ha)	62						<2,580	<2,642
IV	#			68		43			111
	area (ha)			1,958,386		3,908			1,962,294
V	#		12						12
	area (ha)		8,933						8,933
VI	#		135		14		5		149
	area (ha)		768,700		2,201,400[1]		1,537		2,970,100
Total	#	15	181	78	14	43	5	102	438
	area (ha)	59,777	3,588,531	1,988,794	2,201,400	3,908	1,537	<2,580	7,271,000[2]

1 Only 1,625,873 ha of Provincial Forest are counted towards the provincial cumulative value.
2 This total represents the total lands protected. Due to overlap, this number is not a simple summation of the column or row values.

6.2.8 Summary

Manitoba has at least one designation to fit into each IUCN category (Table 7). Although some categories have minimal representation, this is not inconsistent with a

solid protection scheme, as there is no stated or implied requirement to have equality between the categories. In fact, IUCN III, which shows minimal representation, is intended to be used for areas protected for a "unique natural/cultural feature which is of outstanding value because of its inherent rarity, representative or aesthetic qualities or cultural significance" (IUCN, 1994:14). These areas are likely to be small and unique. In addition, distinguishing these areas from IUCN Ia, which are representative ecosystems managed mainly for science, is not necessarily an exact science. Many Manitoba Ecological Reserves, including Libau Bog, set aside to protect 11 species of orchid, Lewis Bog, protecting 3 additional species of rare orchids, and Cowan Bog, which specifically protects Palm Warblers (*Dendroica pinus*) which are 112 km outside of their previous known range (Manitoba Natural Resource, 1990), could easily qualify as IUCN III instead of the current Ia.

Weaknesses can be identified as a result of this compilation. Clearly the tools that set aside lands in the hands of agencies of the provincial government are not as effective for amassing large land bases. It is possible, even likely, that these tools are instead used as more of a concentrated tool to acquire lands in difficult areas. This can be seen in the fact that all of the lands held by these two agencies are in agro-Manitoba, currently the most under represented of the major ecoregions in the provincial initiative (Manitoba Environment, 1997). The more than 5000 ha acquired may in fact be a strong indication to their successes. With a greater emphasis on acquiring and protecting lands, or with more coordinated efforts involving transfers of Crown lands, these tools could be of exceptional importance in unique settings such as agro-Manitoba.

Minimal use of one of the designations may indicate a clumsy process for identifying or designating lands. This does not appear to be the case with regards to Heritage Resource Areas. The lack of a significant land base in Heritage Resources Areas appears to be a function of the current practices avoiding areas of valuable *natural* heritage. Commercial buildings and churches are commonly protected, but only one property is over 100 ha. At present, these areas are referred to Manitoba Natural

Resources for consideration under one of the designations they administer (Dickson, *pers. comm.*). As can be concluded from the previous two chapters, Heritage Resource Areas are a useful tool based on strong legislation and dynamic management which may be particularly suited to protecting larger areas of natural heritage.

6.3 COMPARISON BETWEEN PROVINCES

6.3.1 Saskatchewan

Saskatchewan's protected lands have been compiled by the Canadian Plains Research Center at the University of Regina (Gauthier, et.al., 1997b). This work included all lands that fit into IUCN categories, so lands under federal jurisdiction are removed to achieve the numbers included in this study (Table 8).

Saskatchewan, like Manitoba, maintains designations to fit into each IUCN category. There are 10 separate designations identified under provincial jurisdiction, with Provincial Parks being zoned into 4 subdesignations. Saskatchewan has overlap between different jurisdiction which prevents simple summation of the total area designated, but unlike Manitoba, there is no simple solution to resolve this overlap. In Manitoba, the overlap is primarily between Provincial Forests and a second designation, where the other designation retains clear control over the management of the lands in question. In these cases, the other jurisdiction's IUCN category is most appropriate. In Saskatchewan, the situation is not as clear with regards to management intentions (Gauthier et. al., 1997b). Summation for each designation and for each IUCN class is valid for identifying how prolific each tool or management intention is, but further summation of these values to a single digit would be meaningless and misleading.

Table 8 - IUCN Category Breakdown - Saskatchewan

Protected Area Type		Ecological Reserve	Hist. Site	Protected Area	Comm. Pasture	Heritage Property	Prov. Park	Rec. Site	Wildlife Fund	Habitat Protection	Wildlife Refuge	Total
Ia	#	3										3
	area (ha)	800										800
Ib	#						4					4
	area (ha)						455,900					455,900
II	#						11					11
	area (ha)						677,500					677,500
III	#			22		1						23
	area (ha)			5400		30						5430
IV	#								n/a		24	n/a
	area (ha)								56,000		3100	59,100
V	#		8			2	19	135				164
	area (ha)		20			70	1500	41,700				43,290
VI	#				56					n/a		n/a
	area (ha)				311,400					1,318,900		1,630,300
Total	#	3	8	22	56	3	34	135	n/a	n/a	24	n/a
	area (ha)	800	20	5400	311,400	100	1,148,900	41,700	56,000	1,318,900	3100	n/a

Table adapted from Gauthier et al., 1997b.

In comparison to Manitoba, Saskatchewan has greater representation in categories II, III, and V. The other categories show far greater area protected in Manitoba, with 3 designations (Ib, IV, and VI) in the 2 to 3 million hectare range, more than any category in Saskatchewan. As the categorization is not an exacting process, there is room for different interpretations between the two jurisdictions. This may account for the differences in the category III data which shows Saskatchewan more represented by double, and category V, where Saskatchewan is more represented by 5-fold. Of course, this may also show a greater emphasis on protection of natural and cultural heritage features in Saskatchewan, which these two categories have tended to capture, but this is unlikely as it is Saskatchewan's Provincial Recreation Areas make up the bulk of the category V designated lands.

If indeed there is as much distinction in the emphasis for protection between the two provinces as appears in the data, it may be necessary to consider whether changes to Manitoba's designation in these IUCN categories (III and V) may provide more opportunity to protect worthy areas. As this is unclear in the data, as is whether this difference is the function of some feature on the landscape, or whether the smaller area protected in Manitoba is a function of difficulties applying the designations or the effort applied to these designations to date, there is no valid conclusion evident without further study in this area.

In Manitoba's favour, the greater area designated suggests two possible conclusions. First, it is possible that a greater amount of discipline has been applied in Manitoba to achieve this greater area protected, or second, the system in Manitoba may be easier to wield and more conducive to setting aside lands that Saskatchewan's, or both. Definitively determining the valid conclusion between these two would not only require the same rigourous assessment of Saskatchewan's system as has been completed in this study for Manitoba, but would likely also be of little value, as this data simply represents a static measure in time of a dynamic land allocation process. Completing this comparative assessment over time may provide more precise areas to concentrate further study should there be an interest in the reasons behind the provincial differences.

6.3.2 British Columbia

British Columbia is a diverse and fast changing landscape with regards to protected areas. Lands are designated frequently at the current time, and thus management categories are often not available. The most current IUCN classification data available are from March, 1997 and are aggregate figures for the province as a whole, without breakdown by designation. Figures which do differentiate between designations are current to February, 1998, but include lands that have not been classified by IUCN category (or that do not yet have management plans in place). From these, and other sources, the data in Table 9 was compiled.

British Columbia, as currently represented in the provincial protected area networks, fails to provide designations in the IUCN VI category. This may be a function of current national protected area initiatives (WWF Endangered Spaces campaign, etc.) which fail to give credit for these lands, diminishing the province's interests in identifying or documenting them. The possibility that there is no IUCN VI lands in British Columbia is unlikely, considering this is the most prolific category in both Saskatchewan and Manitoba.

British Columbia's land base in approximately 50 percent larger than Manitoba's, so this must be a consideration in looking at the gross figures in Table 9.

Table 9 - IUCN Category Breakdown - British Columbia

Protected Area Type	Ecological Reserve	Class A Prov. Park	Class B Prov. Parks	Class C Prov. Parks	Recreation Areas	Environment and Land Use Act	Wildlife Management Area	Forest Wilderness Areas	Total
Ia area (ha)	99,157[1]	x							211,118
Ib area (ha)		x						19,000	1,124,716
II area (ha)		x		540[1]	746,386[1]	377,758[1]			6,897,385
III area (ha)		x							26,711
IV area (ha)							18,900		18,900
V area (ha)			3,328						3,328
VI area (ha)									0
Total area (ha)	99,157	8,209,272[1]	3,328	540	746,386	377,758	18,900	19,000	

Table adapted from Land Use Coordination Office data(Lewis, *pers comm.*), Ministry of Environment, Lands, and Parks data (Morrison, *pers. comm.*), Ministry of Environment, Lands, and Parks, 1996, World Wildlife Fund, 1997:50, and Federal Provincial Parks Council 1997.

x - data for this designation was not available in isolation from other designations. Class A Provincial Park data is included in the totals by classification

1 - These figures represents the most current values for each designation. As other data from this table are from the survey completed in March, 1997, direct correlation and summation is not possible.

British Columbia uses an unlikely classification for the single Class B Provincial Park. IUCN V is used to safeguard traditional interactions between people and the environment in areas with "distinct character and significant aesthetic, cultural and/or ecological value" (IUCN, 1994:14) where "safeguarding the integrity of this traditional

interaction is vital to the protection, maintenance and evolution of such an area" (IUCN, 1994:14). This Class B Provincial Park is a 3,328 ha site in the middle of the highly protected Strathcona Class A Provincial Park to allow for the continued operation of the Myra Falls mine. It is unlikely that the mining interaction with the environment is *vital* to the protection, maintenance or evolution of the area. Manitoba classifies such areas as IUCN VI, and it is possible that this misunderstanding of the role of IUCN VI in the British Columbia system contributes to the disuse of the category.

British Columbia's aggregate numbers are higher than Manitoba's, but when the greater land base is factored in, the percentage of the province protected is similar (10.6% in British Columbia (Lewis, *pers. comm.*) and 11.2% in Manitoba). Considering the lack of IUCN VI, the protected areas that are recognized in B.C. are weighted towards those with more concrete conservation objectives than the lower IUCN categories. For example, the percentage of B.C. protected in IUCN Ia, Ib, and II is 8.7%, while Manitoba has only 4.5% in these designations. In addition over 10 times the amount of area is protected in IUCN III in British Columbia as in Manitoba.

The lack of IUCN VI may go unnoticed by many conservationists, but it is worth considering how this may affect the conservation objectives of the province. IUCN VI allows for resource extraction, but only in a way that recognizes the primacy of conservation goals. It appears that B.C.'s landscape fails to have such moderated areas, instead favouring the distinction between strict protected areas and strict extraction lands. As has been demonstrated, locking up lands in single uses of either type is likely to incite disagreement between interested parties, and prevent serious consideration of conservation objectives on all lands that are not expressly closed to development.

6.3.3 Summary

Manitoba's suite of protected areas designations is diverse and appears to be able to fit many different requirements. This can be seen through having at least some representation in each of the IUCN categories. Further research into the IUCN III and V

tools may be necessary to consider whether these designations are utilized less than in Saskatchewan or British Columbia due to inherent problems with the designation, or to some feature of the landscape (perhaps Manitoba has less heritage or historical sites of value).

Additional research and education into the appropriate use and categorization of lands under the IUCN system seems in order. The use of IUCN V in British Columbia for the Class B provincial park seems inappropriate, and the Manitoba suggestion that recreational developments belong in IUCN VII, as they do not fit the description of IUCN VI *Managed Resource Protected Areas* set aside for sustainable use of natural resources is inconsistent with current research. As a result, it is possible that the methods used in this study, and IUCN categories in general, are inappropriate for comparison between two jurisdictions without a better agreement on IUCN standards.

Initiatives which only recognize IUCN I-III, such as the Endangered Spaces campaign, will clearly be noticeable more impressed with the accomplishments of British Columbia than Manitoba or Saskatchewan. It is likely worth considering whether as a result British Columbia is more protected. There appears to be agreement that protected areas are necessary, but not sufficient, for protecting the environment and natural ecosystems. Comprehensive planning and effective environmental management on all other lands is a necessary complement. Having accepted this rationale, the contribution of IUCN IV-VI lands cannot be rightfully ignored as is current practice. These lands which may allow industrial activities, but only when secondary to conservation goals, would be an intermediary between the two types of managed lands accepted by this school. Nearly 5 million hectares of Manitoba's lands receive such management, and when used as buffers to the IUCN I-III, or as alternatives on areas worthy of protection, (but less sensitive than orchids, for example) could augment the value of the nearly 3 million hectares which are recognized.

CHAPTER VII: CONCLUSIONS

7.1 OBJECTIVES OF THE STUDY

The objectives of the study were as follows:

1. to identify and describe Manitoba's legislation that allows for protection of lands for conservation objectives;

2. to evaluate the protected areas provisions of the legislation in terms of the amount of protection provided;

3. to summarize the approaches to management of the mineral resource within areas designated under the legislation;

4. to evaluate the current application of the suite of protected areas alternatives in Manitoba through comparison to other jurisdictions within Canada; and,

5. to make recommendations to the GNWT regarding design of legislation to set aside protected areas and management of minerals within those areas.

Objectives 1 and 2 are completed in Chapter 4, objective 3 in Chapter 5, objective 4 in Chapter 6, and objective 5 in this chapter. Conclusions are organized by designation, as well as for the suite as a whole. Recommendations regarding design of legislation, and management of minerals under that legislation, for the GNWT follows. Consideration of the methodology used and implications for future studies completes this summary.

7.2 INDIVIDUAL DESIGNATIONS

Manitoba has a number of options for protecting lands for conservation purposes. Seven distinct pieces of legislation allow for designations on Crown or publicly owned lands. Although certain designations are simply a set of unique restrictions or regulations, seven are complete land management packages that provide the agency responsible for protection with at least some authority to ensure those protection objectives are achieved.

The seven designations identified are Ecological Reserve, Provincial Park, Wildlife Management Area, Provincial Forest, Conservation District lands, Manitoba

Habitat Heritage Corporation lands, and Heritage Resource Areas. Individual recommendations included herein are based on the evaluations completed in the course of this study, and reflect two considerations. In cases where structural changes would lead to a higher level of protection, these are clearly recommended. In the case where changes to management could be made to either increase the level of protection, or to increase the fair access to minerals, both changes are identified with no recommendation, as social values between the two interests must drive any changes to these systems. In a system with a high level of structural protection, either option (allowing or preventing mineral developments) may still lead to fulfillment of a desirable conservation objective.

7.2.1 Ecological Reserves

Ecological Reserves have the highest level of activity restriction in the Manitoba suite, intended to protect areas for the purposes of scientific research and minimizing impacts on particularly sensitive site-specific resources. Although this makes for easy management, it generally provides a more difficult process for designation, as greater forethought is required to prevent resource allocation conflicts or to prevent intervention by parties with interests in developing other resources. Structurally, the Ecological Reserve designation fails to provide as high a degree of protection as is possible without a statutory requirement for an advisory committee which is consulted in management decisions and removal of protection, and required public hearings on those issues. The more onerous requirement of a Lieutenant Governor in Council regulation is commendable, but as there is no means for provisional designation in the Act, this requirement may in effect slow the process of designation and leave sensitive lands open to exploitation long after being identified.

The management of Ecological Reserves appears to provide additional protection by creating the structural components that are absent from the Act (ie. provisional protection under the Crown Lands Act). In addition, the tendency has been to create Ecological Reserves within other designated lands where possible, such as Provincial

Parks and Provincial Forests, providing a possible buffer zone to more actively used lands.

7.2.2 Provincial Parks

Provincial Parks provide the highest degree of structural protection of the suite, with required public input, and provisional designations being the norm. Weaknesses exist in the exclusion of other statutes which may be antithetical to protection, such as forest protection statutes in the Forests Act which allow for forest fire suppression and pest management activities to be conducted as determined by the Forestry Branch. In addition, the advisory committee process is underutilized.

In practice, the identification and management of Provincial Parks allows for a significant amount of public consultation to ensure areas of high extractive resource value, and thus likely conflicts, will be avoided. In addition, the zoning system allows for using a less onerous designation over lands that are in use or likely to be put to use for resource extraction, thus allowing designation of lands that would otherwise go unprotected in any way (Resource Management) in conjunction with lands under a more rigid designation (Wilderness or Backcountry).

The statutory recognition of the Parks Branch authority in the Mines and Minerals Act provides legitimacy to the additional permitting process carried on by the branch. This process has the ability to provide additional requirements to operators in Provincial Parks, or to prevent operations that are likely to have significant impacts. One protection measure which is of note is the requirement for public consultation before making changes to the zoning scheme. This prevents simple shuffling of these zones to allow for developments which are in areas already designated as sensitive and deserving of higher levels of restrictions.

7.2.3 Wildlife Management Areas

Wildlife Management Areas receive little structural protection from the Wildlife Act. They cannot be applied through provisional measures, fail to exclude other statutes inimical to protection, and do not require public approval for withdrawal or management decisions. In addition, no requirement is made to consult with an advisory committee or knowledgeable experts on management, and no management guidelines are provided in the Act to ensure clarity of purpose in management decisions. Designations are made by cabinet, and thus would require this level of authority to remove the designation, but the designation is meaningless without the associated regulations which are under the authority of the minister. There are no consistent protection measures that apply to all WMAs, leaving the minister with the authority to remove all regulations from any WMA and functionally undesignate the area.

WMAs function as dynamically managed areas with little outright restrictions on development. This is changing as zones are added that meet the provincial Endangered Spaces commitment (currently 30,408 ha)(Manitoba Natural Resources, 1997b:45) which prevent mining, logging, and hydroelectric developments. The ability for a dynamically managed area to function as a protected area is critically dependent on meeting the criteria for structural protection. The WMA legislation fails to meet most of these criteria, thus being a poor candidate for the dynamic management that characterizes current practice. Current management does provide an equitable climate for mineral developers, where expropriation, closure of significant parcels of the landscape, and operating restrictions that change frequently are unlikely. This management style would provide a better balance with protection were it combined with high quality legislation.

7.2.4 Provincial Forests

Manitoba's Provincial Forests are typically ignored by conservation groups looking to identify protected areas in the province. This may be a function of the current management, which fails to identify resources within Provincial Forests as distinct, due to

their designation, from those outside. The legislation is not the weakest of the designations reviewed, although providing a means for provisional protection and for consultation with an advisory committee and the public would significantly strengthen this Act.

The management of Provincial Forests is dynamic with few outright restrictions or regulations. The permitting process at this time is not onerous, typically concerned primarily with impacts on harvesting and on occupancy concerns (refuse, noise, traffic, etc.)(Bulloch, *pers. comm.*). As with WMAs, this low restriction and regulation style of management is most consistent with protection when combined with rigourous review of proposals by advisory committees, scientists, and the public. As these are not requirements of the Provincial Forests, it is unlikely that protection can be guaranteed in these areas. Improvements could be achieved through more rigourous legislation that met the criteria identified in chapter 4, or conversely, although less desirable, a more static management style with clear regulations and restrictions to guide management towards guaranteed protection. The typical criticisms of Provincial Forests are that they allow continued resource harvest and that they are only restricted by sustainable production of timber. These criticisms are misplaced, rather it is the legislative structure combined with the dynamic management style of Provincial Forests that prevent clear and guaranteed achievement of their protection goals.

7.2.5 Habitat Heritage Corporation lands

The Habitat Heritage Corporation in Manitoba is a creative tool for achieving conservation objectives, as decisions are removed one step from the political arena, and other governmental limitations, such as annual budget restrictions, do not apply. Ownership of land is only a small part of the Corporation's activities, but this fails to recognize the value that could be made of transfers of conservation lands from provincial control to the Corporation should this tactic be necessary.

At the present time, the legislation of the corporation is the weakest of those reviewed. The corporation has few tools to acquire lands, notably lacking expropriation powers and provisional protection measures. There is little political weight behind the decisions of the land managers, as cabinet approval is not required for removal of protection, disposal, or other management activities, and the objectives for protected lands are not expressly included in the act. The corporation does consult widely within their staff and the conservation community in the province with regard to their management plans, but no requirements are included in the Act for such consultation, for maintenance of an advisory committee, or for public input into management decisions.

The ability of the corporation to manage the mineral resource on their lands is low. As in the case of Conservation Districts, this could be increased through coordination with Manitoba Energy and Mines, and Manitoba Environment. Removal of the right to stake, or institution of a permitting process which provides authority to the corporation, as surface owner, to control mineral development activities on their lands would be a strong step towards guaranteeing the level of protection.

7.2.6 Conservation District lands

Conservation Districts are a useful tool for achieving municipal and local support for conservation objectives. Like the Manitoba Habitat Heritage Corporation, they are currently limited in their land base to those lands purchased by Conservation District funds, which are limited. The possibility of transfers between the Crown land base and Conservation Districts is present, and use of this approach may significantly alter the function of conservation districts towards the role of land manager, but this approach is as yet untried.

The conservation district legislation is lacking components that would increase the level of protection the lands receive. A means for providing provisional protection, exclusion of statutes inimical to protection, required cabinet approval for withdrawal or removal of protection, and clearly outlined objectives for management of lands in the Act

would be beneficial to protection standards. In addition, providing a body that clearly acts as an advisory committee, as opposed to the multiple administrative bodies currently enable in the Act, and is consulted regarding protection standards and management would ensure greater protection to these lands.

Management of the lands is oriented around conservation objectives, but the ability to prevent mineral operations from infringing on these goals is minimal. A coordinated approach to preventing these potential impacts with Manitoba Energy and Mines and Manitoba Environment would likely not require major changes to statutes or regulations, but could provide protection where uncertainty is present currently. The dynamic management style currently in place fails to provide clarity in whether mineral operations would be allowed to proceed, and what means are open to the district board prevent drastic consequences.

7.2.7 Heritage Resource Areas

The Heritage Resources Act is perhaps one of the stronger pieces of legislation in place in Manitoba. Although it fails to meet many of the legislative criteria, such as cabinet level approval, the power of the minister to control activities is extremely high. Few activities are outright banned, but almost all operations on these lands is subject to a review and approval process. The legislation would be stronger with required consultation with the advisory committee, a practice that is currently routinely used.

The management of heritage areas is extremely dynamic as a result of the case-by-case approval process. Combined with a strong Act such as this, dynamic management can function to provide a higher level of guaranteed protection than in other designations with weak legislation, such as WMAs. In addition, the ability to use buffer zones, to continue to monitor operations on the lands, and to remove staking from sensitive areas results in a solid approach to protecting fragile resources, natural or cultural.

Heritage areas are typically not used on the full range of resources that fit within the act. It is obvious that the overlap with other departments regarding natural heritage

could provide for controversy, but coordinated use of these designations may allow for the powerful and discretionary form of dynamic management that is provided in this act to be applied to more than buildings and small sites. Increased use of this tool may prove assertions that dynamic management that does not outright ban activities can be consistent with protection (Table 10).

Table 10 - Legislation and Management Classification

	Strong Legislation (>6 criteria met)	Weak Legislation (<5 crit. met)
Rigid Management	Ecological Reserves Provincial Parks (Wilderness, Backcountry, Heritage)	WMAs (restricted - Endangered Spaces sites)
Dynamic Management	Heritage Resource Areas Provincial Parks (Resource Management, Access, and Recreational Development)	WMAs (non-End. Spaces sites) Provincial Forests Habitat Heritage lands Conservation District lands

7.2.8 Summary

The drawbacks to weak legislation are obvious. Lack of consultation with scientists, the public, and an established advisory committee are impediments to secure and long-term protection. Failure to require cabinet level approval in major decisions and failure to solidify the objectives for a designations in legislation results in less political accountability. Finally, omissions of means for expropriating lands or placing provisional designations on potential areas diminishes powers that could be used to guarantee protection.

The weaknesses in rigid management are less obvious, but no less significant. Protection by simply excluding certain activities that may be offending does not work, as can be seen in Banff National Park (Banff Bow Valley Study, 1997). Overprotection from some activities may be combined with underprotection from others (classically tourism). In addition, such designations are clumsy to apply, and can result in provisional

designations applying for years or decades. Where these rigidly managed areas are enabled by weak legislation that does not provide for provisional protection, there can be a significant risk of other interests acquiring the land before protection can be assured.

Likely the best combination is those areas enabled by strong legislation (potentially stronger than those listed in Table 10) which are managed dynamically. Criticism has been raised in Manitoba regarding industrial uses in Provincial Parks, but this can be attributed to two factors: as the criticism is largely based on philosophy, there may be a problem with terminology and the public expectations regarding parks; also, despite the fact that the Provincial Parks Act is the strongest piece of legislation in the province, there remain significant weaknesses regarding the use of the advisory committee. Heritage Areas, the other designation which fits this combination, may prove to be an excellent tool for protection, but as it has not been applied over large *natural* heritage areas to date, there is no data to make a determination. Nevertheless, the weaknesses in the Heritage Resources Act are still significant and would require amending before a true evaluation of its effectiveness for protecting lands could be completed.

Those areas which have potential for success in the NWT are primarily those which would be considered to have either strong legislation or dynamic management, or ideally both. Manitoba's Provincial Parks legislation is worthy of consideration as a model which may satisfy both the popular Endangered Spaces requirements and the more dynamic characteristics required to be responsive to changing conditions. Serious consideration should be given to ensuring any legislation enacted satisfies most, if not all, of the criteria from Chapter 4.

The potential of the Heritage Resources legislation is untested, but appears to hold promise. A more comprehensive system based on the institutional structure of this designation may be more useful than the narrow, cultural heritage based model in place in Manitoba.

Conservation Districts and Habitat Heritage Corporation lands have significant drawbacks as enacted in Manitoba. Despite this, these tools may be highly useful if modified by another jurisdiction. Conservation Districts in particular may be of use in the NWT, but as they closely resemble the Resource Management Boards already in place as a result of land claim settlements, they would likely be redundant. The Manitoba Habitat Heritage Corporation, on the other hand, is a unique approach to allowing for land conservation that is somewhat isolated from direct ministerial control. The corporation as it now functions is well known for establishing partnerships with agencies in the field, and receives strong public support. In theory, the Crown corporation can be transferred any number of parcels of lands and can utilize outside expertise and advisory boards to the fullest extent. Cooperation between those who hold authority over mineral rights and the corporation could lead to effective management of the mineral resource with responsive permitting and monitoring. All of this is dependent on passing stronger legislation than is currently in use in Manitoba at the present time.

7.3 MANITOBA'S PROTECTED AREAS SUITE

Despite the problems identified above with individual designations, Manitoba's protected areas suite is solid. There is representation from each IUCN category, each designation maintains at least some land base, and a significant portion of the province is represented in protected areas. Coordination between the designating bodies is not provided in the legislation, but this is in effect achieved through the Crown Lands Classification Committee and the Provincial Land Use Planning committee of cabinet. This coordination would be beneficial beyond simply initial designation, to an ongoing coordinated advisory committee representing all designations.

Weak coordination between different jurisdiction on the use of IUCN categories makes comparison difficult. Based on data available, Manitoba is under represented in IUCN III and V, the categories that are often associated with heritage protection and sustainable use by communities who have a symbiotic relationship with the landscape,

such as traditional uses by aboriginals. It is possible that these designations are an impending component of the new provincial initiatives in Manitoba, but to date the numbers are low in comparison to Saskatchewan or British Columbia.

Evaluation of the success of a jurisdiction in accomplishing its conservation goals requires more quantitative analysis than was completed in this study. The WWF Endangered Spaces campaign has received considerable attention for their gap analysis geographic approach to evaluating jurisdictions. Gap Analysis definitely stands out as a more rigourous assessment of conservation progress than the simple categorization completed here. One recommendation that may be made to improve the gap analysis process is to remove the restrictions that designated areas must meet the qualities of rigid management, while ignoring the strength of the enabling legislation. More appropriately, all areas that fit into the IUCN six category system should be considered, or possibly just those with strong legislation. In order to incorporate the results of this study, it is not necessary to reject the work of the WWF. In fact it would be advisable to structure a protected areas network on the geographic approaches of the WWF Gap Analysis system with a simple alteration to screening process as to what constitutes a protected area.

7.4 RECOMMENDATIONS

Recommendations for the NWT are listed in Table 11. They are based on ensuring at least one designation is available for each IUCN management category, and that these designations would be highly protected in structure, but dynamically managed. Accomplishing a comprehensive network of protected areas may involve use of many of the tools enacted in Manitoba, but for clarity sake, it is likely that these could function more effectively if under a single statute.

If a system is based on the IUCN categories, these categories can then be used for setting objectives for overall land area designated or relative percentages (both percent of land base protected in each category, and relative weighting of the categories). Such clear objectives would allow for simple and accurate quantitative evaluation of the protected

area network. A method for coordinated planning of protected areas that spans departments and designations would be ideal, perhaps including an advisory committee at this level, but this would be easier to achieve if the omnibus approach to legislation is taken. Coordination may also be necessary with other jurisdictions to ensure that the necessary level of protection is provided in each ecoregion without requiring extensive representation on both sides of political boundaries.

Despite the questionable standards surrounding Manitoba's participation in the Endangered Spaces program, a useful lesson from this experience is apparent. Attempting to accomplish new initiatives using the available legislative tools may result in such tenuous designs as the Endangered Spaces WMAs. Using one of the weakest pieces of legislation, the area attempts to achieve protection through ministerial regulations which simply ban activities. A more effective approach to guarantee long-term protection would involve the passing of new legislation which is intended to provide this type of protection. The time required to enact such new legislation may be significant, but it seems worthwhile, particularly if these areas are provisionally protected in some way. The final product would be greater protection in the institutional structure (accountability, consultation, and might) which simply cannot be mimicked by bans.

Table 11 - Recommendations to GNWT

Provide at least one designation for each IUCN management category
Set measurable goals based on IUCN categories (relative and absolute)
Provide for a coordinated planning mechanism to identify and manage protected areas, including an ongoing advisory committee
Design legislation to specifically address the protected area initiative
Combine protected area tools under less pieces of legislation than Manitoba to allow for better awareness and coordination
Ensure legislation meets the maximum number of criteria from Chapter 4
Provide for dynamic management, or potentially rigid absolute exclusions in conjunction with ongoing dynamic management

Table 11 - Recommendations to GNWT

Ensure interactions with other statutes (particularly those dealing with mines and minerals) are addressed explicitly to minimize uncertainty
Coordinate with other jurisdictions to prevent duplication of representation in border ecoregions
Designations in Manitoba that are worthy of consideration as models: Provincial Parks, Heritage Resource Areas, The Manitoba Habitat Heritage Corporation, and Conservation Districts

7.5 METHODOLOGY AND IMPLICATIONS FOR FUTURE STUDIES

This study was conducted using criteria that were present in the literature more than twenty years ago, or had to be specifically designed. Those that were present in the literature had rarely been revisited, particularly considering the bountiful nature of publications on the topic of protected areas presently. It is curious that so much effort has been focused on how to design an area geographically and ecologically, and so little on how to actually ensure the necessary level of protection in law. It equally curious that despite volumes of rhetoric on the philosophy of multiple-use, both for and against, so little reviewed literature has been written to support either side. It is hoped that this work can at least contribute to the body of literature on the topic of design of protected areas legislation in general, and particularly regarding methodologies for assessing a jurisdiction's suite of protected area tools.

The work of Franson and Taschereau were of significant value in assessing the strength of protected areas legislation. Although these criteria were designed to consider strict ecological reserves, they did prove useful in looking at multiple-use protected areas as well. The main variation that was necessary involved a significant expansion of the criteria relating to 'statutes inimical to protection are excluded or modified'. Rather than a simple binary evaluation of whether the enabling act for each protected area designation excludes or modifies other statutes, it was necessary to examine how, in practice, these inimical statutes (in this case the Mines and Minerals Act) are modified. This work

proved useful in understanding the framework under which minerals are managed in each type of area, but future studies may choose to further expand on the criteria used for the examination to include other resource rights or more depth regarding minerals. (such as the type of conditions imposed in past licences).

The methodology as applied varied in their ease of use. Evaluation of legislation is simple and informative, while compilation of IUCN category figures is laborious and of tenuous value in arriving at concrete conclusions regarding the success of any tool. How well any designation has achieved its original intentions is a function of information that is not generally available, and is subjective at best. This data may be more useful if collected by ecoregion, but more so for noting the amount of land absent from the totals than the amount present. Of course, application by ecoregion would increase the input required by an order of magnitude, at the least.

None of the evaluation techniques used can completely assess how well Manitoba has done in protecting its landscape from despoliation. As some manipulation of the province's landscape is necessary, and too much is devastating, a middle ground must be the best case, but where this middle ground lies is up for dispute, and this will likely not change soon. A true evaluation that is complete would require extensive time on the landscape and some means for measuring the level of impact in each type of area under varying conditions, which may in effect be impossible. Conclusions arrived at in this chapter are limited by not having such data as could be acquired from the hypothetical ideal study, but represent the best information available at this time. Protected areas designed under these recommendations are the most likely to provide the legal foundations and responsive management necessary to ensure long-term survival and integrity.

LITERATURE CITED

Banff Bow Valley Study. 1996. Banff-Bow Valley: At the crossroads. Summary Report of the Banff Bow Valley Study. Supply and Services Canada. 74 pp.

Barton, B. 1994. Canadian Law of Mining. Canadian Institute for Resource Law, 398 pp.

Beechey, T. J. 1989. Guidelines for the selection of protected ecological areas. Canadian Council on Ecological Areas. Ottawa. 14 pp.

Bella, L. 1987. Parks for Profit. Harvest House, 177 pp.

Clean Environment Commission (CEC). 1992. Annual Report 1991-1992. Manitoba Environment.

Cole, D. N. 1994. The wilderness threats matrix: a framework for assessing impacts. United States Forest Service. Research Note INT-RP-475.

Department of Indian and Northern Affairs (DIAND). 1990. Report of the conservation advisory committee on the Northern Mineral Policy - A review of the boundaries of bird sanctuaries in the Northwest Territories.

Doggett, M. D. and B. W. Mackenzie. 1994. Mineral potential on Canada's frontiers. Center for Resource Studies Perspectives No. 48.

Dwyer, J. 1993. Conflicts over wilderness: Strathcona provincial park, B.C. Unpublished Masters Thesis. Simon Fraser University. 283 pp.

Elder, P. S. 1996. Biological diversity and Alberta law. 34 Alberta Law Review. pp. 293-351.

Federal-Provincial Parks Council. 1997. Annual Information Exchange Questionnaire. Thunder Bay.

Franson, R. T. 1972. Legislation to establish ecological reserves for the protection of natural areas. Osgoode Hall Law Journal. 10:3. pp. 583-605.

Franson, R. T. 1975. The legal aspects of ecological reserve creation and management in Canada. IUCN Environmental Policy and Law Paper No.9. Morges, Switzerland. 75 pp.

Gauthier, A. L. (ed). 1992. Framework for developing a nation-wide system of Ecological Areas. Canadian Council on Ecological Areas Occasional Paper #12. 39 pp.

Gauthier, A., L. Patino, and S. Gammell. 1997a. World Conservation Union (IUCN) categories for Saskatchewan conservation lands. Canadian Plains Research Center Information Systems report Series 97-1. University of Regina. 20 pp.

Gauthier, A. L. Patino, and L. Langford. 1997b. Protecting Saskatchewan's natural heritage. Canadian Plains Research Center. University of Regina. 10 pp.

Government of Canada. 1990. Canada's green plan. Supply and Services. Ottawa.

Government of Canada. 1992. Tri-Council Statement of Commitment to Complete Canada's Network of Protected Areas. Signed in Aylmer, Quebec, Nov 25, 1992.

Government of Canada. 1994. Guiding principles and operational policies. Parks Canada. Canadian Heritage. Ottawa.

Government of Canada. 1996. The mineral and metals policy of the government of Canada. Government Services Canada. Ottawa.

Government of Manitoba. 1991. Policy and procedures manual. Crown Land Classification Committee.

Government of the Northwest Territories. 1996. Protected Areas Strategy for the NWT: Initial Concept and Schedule. Unpublished Document. 13 pp.

Government of the Northwest Territories. 1997. A guide to mineral deposits of the Northwest Territories. Resources Wildlife and Economic Development Department. Yellowknife. 126 pp.

Hummel, M. (ed.) 1989. Endangered spaces: the future for Canada's wilderness. Key Porter Books.

Hummel, M. (ed.) 1995. Protecting Canada's endangered spaces. Key Porter Books, 230 pp.

Iacobelli, T., K. Kavanagh, and S. Rowe. 1995. A protected areas gap analysis methodology: planning for the conservation of biodiversity. World Wildlife Fund. Toronto. 68 pp.

IUCN. 1984. Categories, objectives and criteria for protected areas. pp 47-53. *in* J. A. McNeely, and K. R. Miller (eds). 1984. National parks, conservation and development: the role of protected areas in sustaining society. Smithsonian Institute Press. 825 pp.

IUCN. 1994. Guidelines for Protected Areas Management Categories. IUCN. Cambridge, UK. 261 pp.

Land Use Coordination Office. unpublished. British Columbia land-use data set. *quoted by* Lewis, K. *pers. comm.* Victoria.

Locke, H. and S. Elgie. 1995. Using the law to protect wild places. *in* M. Hummel (ed). 1995. Protecting Canada's endangered spaces. Key Porter Books, 230 pp.

Lothian, W. F. 1981. A History of Canada's National Parks Volume IV. Supply and Services Canada, 154 pp.

Lothian, W. F. 1987. A Brief History of Canada's National Parks. Supply and Services Canada, 156 pp.

Lucas, P. H. C. 1984. How protected areas can help meet society's evolving needs. pp 72-77 *in* J. A. McNeely, and K. R. Miller (eds). 1984. National parks, conservation and development: the role of protected areas in sustaining society. Smithsonian Institute Press. 825 pp.

Manitoba Energy and Mines. 1997a. Memorandum of Agreement - Quarry mineral exploration and mining in Wildlife Management Areas.

Manitoba Energy and Mines. 1997b. Land access and sustainable development. Winnipeg.

Manitoba Environment. 1997. State of the Environment Report for Manitoba. Winnipeg. 174 pp.

Manitoba Habitat Heritage Corporation. 1996. Leaving a Legacy: Donating land for wildlife. MHHC. Winnipeg.

Manitoba Habitat Heritage Corporation. 1997. Annual Report 1996/1997. Winnipeg.

Manitoba Natural Resources, 1984. Procedure Directive - Permits and Licences in Parks. PR 13/01/003. Winnipeg.

Manitoba Natural Resources. 1989. Acquisition, sale and commitment of Crown Land in Manitoba and the Interlake 1960-1989. Winnipeg.

Manitoba Natural Resources. 1990. Historical Map. Surveys and Mapping. Winnipeg.

Manitoba Natural Resources. 1996a. Proposal for Grass River Provincial Park. Parks System Plan Review. Winnipeg.

Manitoba Natural Resources. 1996b. An action plan for Manitoba's network of protected areas. Winnipeg.

Manitoba Natural Resources, 1996c. Annual Report. Manitoba Natural Resources. 1995-1996

Manitoba Natural Resources. 1997a. Annual Federal/Provincial Parks Council Submission. Unpublished.

Manitoba Natural Resources. 1997b. Five Year Report to the Legislature on Wildlife. April 1992 - March 1997. Winnipeg, 47 pp.

Manitoba Natural Resources. 1997c. Manitoba's approach to enduring features analysis. Parks Branch. Winnipeg.

Manitoba Natural Resources. 1997d. An action plan for Manitoba's network of protected areas - update. Winnipeg.

Manitoba Natural Resources. n.d. Manitoba's Provincial Forests. Winnipeg.

Marty, S. 1984. A grand and fabulous notion: the first century of Canada's parks. NC press. Toronto. 156 pp.

Mining Association of Canada. 1994. Whitehorse mining initiative - leadership council accord. Final Report. 40 pp.

Ministry of Environment, Lands, and Parks. 1996. Master Plan - Strathcona/Westmin Provincial Park. Victoria. 69 pp.

National Park Service. 1933. Laws Relating to the National Park Service. United States Government Printing Office *in* W. F. Lothian. 1987. A Brief History of Canada's National Parks. Supply and Services Canada, 156 pp.

Noss, R. 1993. The wildlands project land conservation strategy. Wild Earth: 10-21.

Noss, R. 1995. Maintaining ecological integrity in representative reserve networks. World Wildlife Fund, Toronto. 77 pp.

Peterson, E. B. and N. M. Peterson. 1991. A first approximation of principles and criteria to make Canada's protected areas system representative of the nation's ecological diversity. Canadian Council on Ecological Areas, 47 pp.

Richarson, N. 1989. Land use planning and sustainable development in Canada. Canadian Environmental Advisory Council. Supply and Services Canada. 49 pp.

Runte, A. 1987. National Parks - The American Experience. University of Nebraska Press, 265 pp.

Schneider, T. 1993. Mineral Policy: Update to July 1993. Center for Resource Studies Perspectives 45.

Schwindt, R. 1992. Report of the commission of inquiry into compensation for the taking of resource interests. Queens Printer for British Columbia.

Scott, J. M., F. Davis, B. Csuti, R. Noss, B. Butterfield, C. Groves, H. Anderson, S. Caicco, F. D'Erchia, T. C. Edwards Jr, J. Ulliman, and R. G. Wright. 1993. Gap analysis: a geographic approach to protection of biological diversity. Wildlife Monographs, No. 123, 41 pp.

Senate of Canada. 1996. Protecting places and people: conserving Canada's natural heritage. Report of the Standing Senate Committee on Energy, the Environment and Natural Resources. 120 pp.

Soule, M. E. and D. Simberloff. 1986. What do genetics and ecology tell us about the design of nature reserves? Biological Conservation 35: p.19-40.

Strathcona Park Advisory Committee. 1988. Strathcona Park: restoring the balance. Queens Printer. Victoria. 88 pp.

Taschereau, P. M. 1985. The status of Ecological Reserves in Canada. The Canadian Council on Ecological Areas. Halifax. 120 pp.

Thomasson, R. D. and J. M. Shay. 1984. Ecological areas decision-making processes and case studies. Occasional Paper #2. Canadian Council on Ecological Areas. Ottawa. 12 pp.

West Coast Environmental Law Research Foundation. 1993. Tatshenshini Protected as Provincial Park. Newsletter 17(2).

World Commission on Environment and Development (WCED). 1987. Our common future. Oxford University Press. New York.

World Wildlife Fund. 1989. Canadian Wilderness Charter. Toronto.

World Wildlife Fund. 1997. Endangered Spaces progress report. Number 7. Toronto. 51 pp.

LEGISLATION CITED

C.C.S.M. c.C175 The Conservation Districts Act
C.C.S.M. c.C340 The Crown Lands Act
C.C.S.M. c.E5 The Ecological Reserves Act
C.C.S.M. c.F150 The Forests Act
C.C.S.M. c.H3 The Habitat Heritage Act
C.C.S.M. c.H39.1 The Heritage Resources Act
C.C.S.M. c.M162 The Mines and Minerals Act
C.C.S.M. c.P20 The Provincial Parks Act
C.C.S.M. c.W130 The Wildlife Act

REGULATIONS CITED

C.C.S.M. c.C175-14/88R
C.C.S.M. c.E125-163/88
C.C.S.M. c.M162-150/96
C.C.S.M. c.P20-35/97
C.C.S.M. c.P20-37/97
C.C.S.M. c.P80-184/94
C.C.S.M. c.W130-64/95

CASES CITED

Cream Silver Mines Ltd. v. B.C., [1986] 4 W.W.R. 328 (B.C.S.C.)
Green v. The Queen in Right of the Province of Ontario, [1972] 34 D.L.R. (3d) 20.
R. v. Tener and Tener, [1985] 3 W.W.R. 673. (S.C.C.)

PERSONAL COMMUNICATIONS

Barto, William. Senior Policy Analyst. Sustainable Development Coordination Unit. Executive Council. Government of Manitoba.

Blackman, Susan. Research Associate. Canadian Institute of Resource Law.

Boychuk, Mike. Manager. Turtle River Conservation District.

Bulloch, Dan. Resource Extension Officer. Manitoba Natural Resources.

Colpitts, Lorne. Executive Director. Manitoba Habitat Heritage Corporation.

Davis, Gary. Manager. Turtle Mountain Conservation District.

Dugay, Lyle. Administrative Officer. Conservation Districts Program. Rural Development. Government of Manitoba.

Fellows, Jo-Ann. Senior Policy Analyst. Policy and Planning Branch. New Brunswick Natural Resources and Energy

Greenfield, Cliff. Manager. Pembina Valley Conservation District.

Hernandez, Helios. Ecological Reserve/Natural Resource Specialist. Parks and Natural Areas Branch. Manitoba Natural Resources.

Hildebrandt, Wayne. Manager. Whitemud Conservation District.

Krakowka, Larry. Land Administrator. Lands Branch. Manitoba Natural Resources.

Lussier, Bernie. Manager. Cooks Creek Conservation District.

Patterson, George. Executive Director. Exploration and Geological Services. Saskatchewan Energy and Mines.

Schroeder, Roger. Head of System and Management Planning. Parks and Natural Areas Branch. Manitoba Natural Resources.

Suggett, Glen. Wildlife Lands Specialist. Manitoba Natural Resources.

Vogel, Chris. Policy Coordination Branch. Manitoba Natural Resources.

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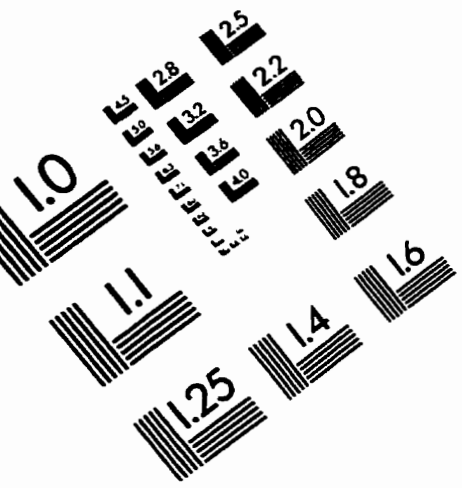

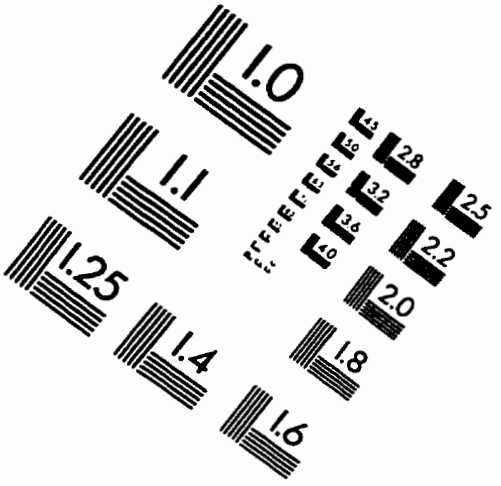

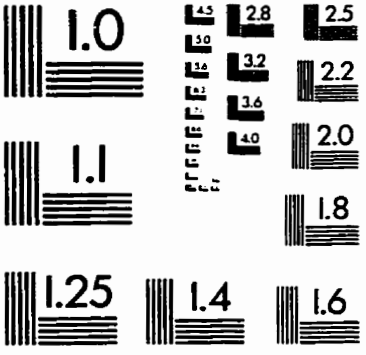

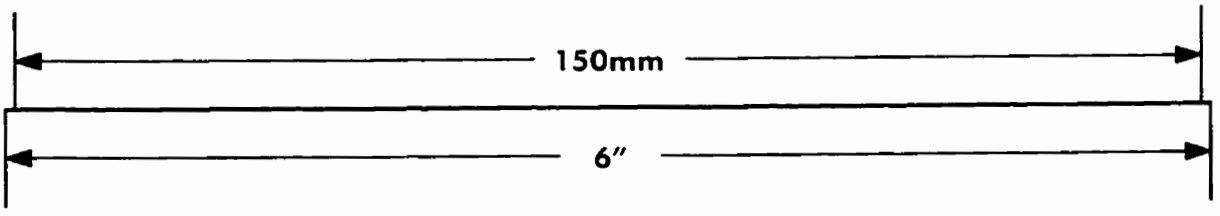

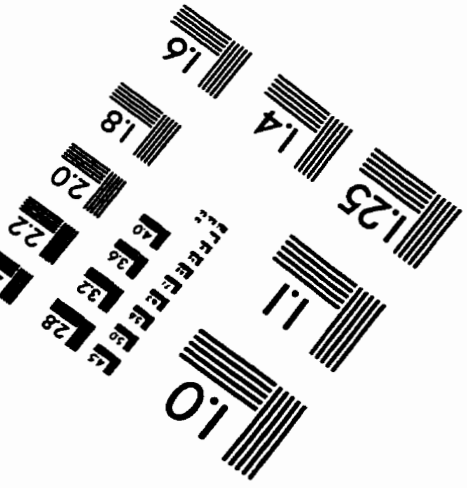

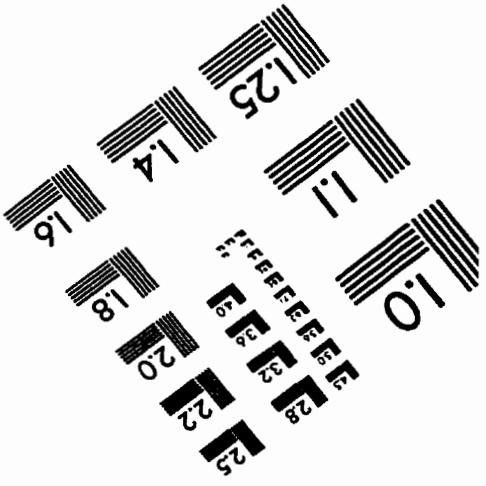

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