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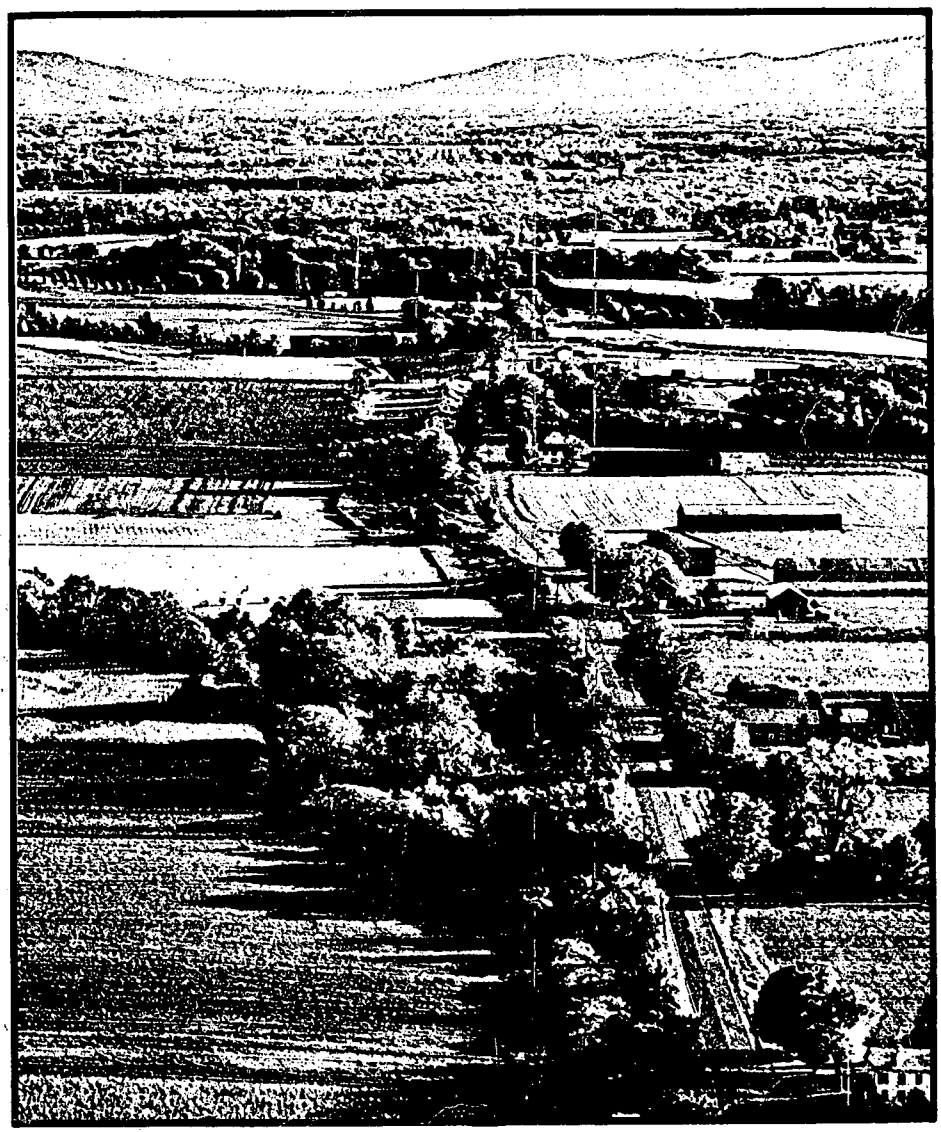
Towards Comprehensive Land Use and Resource Management in Newfoundland



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TOWARDS COMPREHENSIVE LAND USE AND RESOURCE MANAGEMENT IN NEWFOUNDLAND

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Notwithstanding the assistance of many others, the views and opinions expressed in the following report are solely those of the authors and may not necessarily reflect the views of the Canadian Forestry Service or any other Department or Agency.

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Conflict between forestry and other land uses in Newfoundland has resulted in significant alienation of productive forest lands and created significant difficulties for the determination and implementation of long term management plans. One prerequisite for forest management is the definition of forest lands themselves, which in turn presupposes a comprehensive land classification system and, more fundamentally, a comprehensive and integrated approach to resource planning in general. The objective of this report is to outline a strategy for comprehensive land use planning for resource management in Newfoundland.

The approach is to examine the ways in which other Canadian Provinces have addressed essentially the same problems and to suggest a system appropriate for Newfoundland based on the results of those other provincial experiences.

2.0 BACKGROUND

Alienation of forest lands is one of several ongoing forestry issues or problems that has been identified since 1955 by various Provincial, and joint Federal-Provincial, Royal Commissions and Task Forces. While progress has been made in some areas from an internal planning standpoint (for example, improved inventory data and preparation of Management Unit Plans), little has been achieved in others. For example, there has been little rationalization of forest legislation, few changes in silvicultural practices, and virtually no developments with respect to external planning, that is the coordination of activities with other land using Departments.

3.0 TOWARD COMPREHENSIVE RESOURCE AND LAND USE PLANNING

Development of a comprehensive resource and land planning framework in Newfoundland and Labrador requires some significant changes in present administrative structure and Departmental practices. One way to begin to achieve integrated resource management, that is, to attain an improved measure of orderly development, balance and flexibility in land and resource planning, would be to create a Natural Resources Planning Directorate. As the apex of a hierarchical system of planning responsibilities, the proposed Directorate would be responsible to Cabinet in preparation of provincial land use policy and regional strategic plans. The system suggested is a normative one, moving broadly from identification of objectives, to supply/demand analyses, evaluation of management alternatives, and selection of management activities. Implementation of this type of system would help guide planners and decision makers to more effective and efficient allocation, development and use of the forest lands and resources of the Province.

II - INTRODUCTION: OBJECTIVES AND APPROACH

1.0 PROJECT DESCRIPTION

The original objective of this research project was to attempt to develop a methodology that could be used as the basis for the resolution of land use conflicts between forestry and other uses. The rationale for such a project was that on Crown lands in particular, though not exclusively, there had been an increasing level of competition by land uses other than forestry, the outcome of which had been, and will continue to be, alienation of productive forest lands, and the continuous erosion of the forest base. With few, if any, guarantees of forest continuity in many areas in the light of these problems, it is difficult to prepare meaningful long-term management plans and it may be virtually impossible to implement them.

A prerequisite for effective forest lands management is the definition of the forest lands themselves. This in turn requires a comprehensive land classification system that would identify the priorities for forestry, agriculture, recreation, municipal development, and other land uses. The 1981 Royal Commission on Forest Protection and Management recognized the need for such a classification and that it would be a major undertaking not easily or rapidly achieved (Royal Commission on Forest Protection and Management, 1981, 66). While noting that an overall land classification scheme is a long-term planning necessity, the Commission suggested a short-term, second best approach to the problem. The Department of Forest Resources and Lands would identify those land areas that would be managed primarily for future production and which, through subsequent legislation and regulation, would be given protection from alienation by competing land uses.

It was on the basis of this short-term goal that this project was originally conceived; the intention was to attempt to develop a "criteria-framework" that could be used to allocate land among various uses, with particular emphasis being placed on forestry.

In the process of trying to determine such criteria, several issues emerged which suggested that defining criteria for one particular type of land use was premature, and that far more fundamental issues needed to be addressed at the outset.

In the first place it soon became evident that there was little available information about the process of forest land alienation. The magnitude of the problem, location and specific type or cause of alienation could not be clearly specified.[1] This in part reflects a land inventory data problem but perhaps more importantly it is a reflection of the lack of coordination between the various land using agencies.

Secondly, a review of forestry policy and objectives and the legislative framework within which they are implemented and regulated revealed poor definition on the one hand and lack of comprehensiveness on the other. The basis for forestry land use criteria was not clear and there appeared to be no legislaltive mechanism through which these criteria could be applied to identify and subsequently protect prime forest land.

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1 Northland Associates Ltd. (Northland, 1982) have, and are, continuing to address this specific question for selected areas in the Province.

A third, and perhaps the most fundamental, constraint to the approach originally proposed was that the identification of forestry land use selection criteria would merely perpetuate the piece-meal, single resource perspective that appears to characterize the thinking, not only of Forestry, but all other land using Departments in the Province.

There is presently no requirement or incentive for Departments and Agencies to think or act collectively, and no apparent desire to consider the more complex proposition that land often can be used for multiple purposes. No formal mechanism or process exists through which land use planning can be comprehensively approached. Suggesting criteria for the identification of one land use type would merely promote adversarial relationships between Departments when what is required is the development of cooperative attitudes.

Accordingly, the purpose of the project was revised to address the broader, more fundamental issue of comprehensive land use planning. The objective is to attempt to outline, in general terms, a strategy for comprehensive land use and resource management planning in Newfoundland.

The need for such a system is well documented, though the need is perhaps not widely recognized. Any changes toward such a system will undoubtedly require major legislative and administrative changes and, as experience elsewhere has shown, its implementation is not likely to be simple and straightforward. However, not to implement a new approach because of these difficulties still leaves the basic problem. There is little doubt that land use conflicts will only increase in the future. The sooner a comprehensive land use planning system is put into place, the better; there may still be some lead time to resolve initial problems before land use conflicts become overwhelming.

2.0 APPROACH

The approach adopted was to examine the ways in which other Provinces in Canada, and the United States, have addressed similar problems. Newfoundland has a large land base and a small and dispersed population. Until relatively recently there has been little concern over resource management of any type. Thus, compared to many other Provinces and the United States, Newfoundland has come to the problem comparatively late. This being the case, there should be much to learn from experiences elsewhere, notwithstanding the difficulties of transferability of problem and resolution in space and time. The suggestions made here, therefore, are derived from experience elsewhere, with modifications in the light of local conditions and the outcomes of those other experiences themselves.

Though advocating comprehensive land use planning, the original "point of entry" or perspective was that of forestry and so it remains. To this end the body of the report begins by documenting past and current land use problems associated with Forestry (Chapter III). Chapter IV illustrates those steps which have been taken to date to address the problems, and which are indicative of recognition of the need for a more comprehensive approach to land use planning.

In the light of this background, Chapter V illustrates the experience with comprehensive land use planning elsewhere in Canada, from which a strategy is proposed that is considered suitable for Newfoundland (Chapter VI).

III - BACKGROUND: FORESTRY AND LAND USE PLANNING PROBLEMS IN NEWFOUNDLAND.

1.0 INTRODUCTION

Alienation of forest lands for non-forestry uses is a long-standing problem. Task Force Reports, Royal Commissions and Annual Departmental Reports have all recognized the problem and concern continues to grow as evidence emerges to indicate the cause and scale of losses.

In 1973, for example, the Report of the Newfoundland Federal-Provincial Task Force on Forestry indicated that "A little over 4 per cent of the productive forest land of the Island is already committed to uses other than forestry" (Newfoundland Federal-Provincial Task Force on Forestry, 1973, 15). Over the last decade the problem has become more serious but much work remains to be done to determine the real magnitude of losses.

The Task Force also indicated that many of the losses experienced were unnecessary as "Most other uses of forest land, for wildlife, recreation, and related purposes are compatible with fibre production" (Newfoundland Federal-Provincial Task Force on Forestry, 1973, 18, 19). More specifically, the Task Force suggested that an estimated "additional 24 per cent of productive forest land might best be managed on an integrated resource basis for some use other than forestry" (Newfoundland Federal-Provincial Task Force on Forestry, 1973, 15).

To date little progress appears to have been made with respect to multiple land use management. Integrated resource use does not necessarily imply significant reduction of forest production but, on the other hand, single activity land use practices have had, and are likely to continue to have, the effect of prohibiting forestry altogether in some areas, thereby imposing limitations on forest production and the available wood supply.

The solution, while not necessarily easy to effect, is, once again, one that has been offered many times; namely that the "allocation of land for fibre production, recreation, wildlife, agriculture, hydro developments, or for multiple resource uses should . . . be done within the context of a comprehensive land use plan." (Newfoundland Federal-Provincial Task Force on Forestry, 1973, 29; emphasis added).

Unfortunately, as of 1973, "Land management and land use planning have been neglected in Newfoundland, mainly because the responsibility for such planning does not rest with any one agency of government. Indeed, many departments and divisions of government are directly or indirectly concerned with land use and are often unaware of each other's needs. In the absence of a clearly defined policy on land use, this inevitably leads to conflicts of interest which are rarely, if ever, resolved to the satisfaction of the parties concerned." (Newfoundland Federal-Provincial Task Force on Forestry, 1973, 79, 80; emphasis added).

If comprehensive land use planning and integrated resource management practices are essential, a prerequisite for success is that the participants in the process (Forestry, Agriculture, Wildlife, etc.) have adequate internal management capability. Without sufficient information about the individual resource, without adequate administrative and legislative capabilities, and without well-defined policy frameworks, there is little likelihood that any Department or Agency will be able to manage satisfactorily its own affairs, let alone be able to place the objectives and requirements of that sector in a broader integrated resource management context.

Within the specific context of Forestry, it is evident that many of the elements needed for sound internal management are evolving slowly but that external management questions, i.e. the relationships with other land users, have barely begun to be addressed.

2.0 FORESTRY: INTERNAL MANAGEMENT CONSTRAINTS

2.1. Main Issues

Since 1955 there have been four major reviews of the state of forestry in Newfoundland.[1] All have identified, in one form or another, a series of continuing issues concerned with:

- decreasing resource base and increasing demand;
- need for legislative revision;
- problems of land tenure and control;
- the lack of forestry policy and planning;
- competing land uses;
- (uncontrolled) fuelwood cutting;
- lack of public concern/education regarding forest resources;
- role of the Forest Service/Department of Forest Resources and Lands.

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1 These analyses are:

(1) Newfoundland Royal Commission on Forestry. Report. Government of Newfoundland, 1955;

(2) Royal Commission on Forestry. Report to the Government of Newfoundland and Labrador. Government of Newfoundland and Labrador, 1970;

(3) Newfoundland Federal-Provincial Task Force on Forestry. Report. Newfoundland Forest Research Center, 1973;

(4) Royal Commission on Forest Protection and Management. Report, Part II. Government of Newfoundland and Labrador, 1981.

Using the 1973 Task Force as a base and the 1981 Royal Commission by way of current comparison, progress (or lack thereof) in addressing these issues can be seen.

2.1.1. Forest Management Plans

Writing at a general level about forest management plans for Newfoundland, the 1973 Task Force noted both certain needs and specific types of problems which faced forest resource managers. For example, "because of the dramatic increase in the demand for wood" the Provincial Government was exhorted to "develop management plans and exert its influence to ensure that all forest lands are managed in the best interests of the economy and environment of the Province." (Newfoundland Federal-Provincial Task Force on Forestry, 1973, 102). However, until the initial forest inventory was completed in 1969 (Royal Commission on Forest Protection and Management, 1981, 50), the preparation of management plans for Crown Lands was "almost impossible". Although Price and Bowater's own inventory systems enabled them to plan and carry out forest operations, their plans were private property and were not necessarily in the best interests of the Province (Newfoundland Federal-Provincial Task Force on Forestry, 1973, 102). To counteract this practice, the Task Force recommended that "the preparation and supervision of sound, well-executed management plans could and should become the backbone of the Forest Service Program" (Newfoundland Federal-Provincial Task Force on Forestry, 1973, 103).

2.1.2. Practice and Policy

Formal establishment of Management Units and the development of master plans to cover major forest regions as well as the entire Province were seen as steps toward ultimate government control over company management plans and operations on alienated Crown Land (Newfoundland Federal-Provincial Task Force on Forestry, 1973, 103, 104). A variety of approaches, including taxation systems, stumpage fees and changes to the cutting permit system, was suggested as means to achieve direct government control over freehold and alienated Crown Lands. Given vested property rights, existing tenure agreements, and the established precedent of company operations under their own management plans, the Task Force anticipated difficulty in achieving government control. Even with the existence of a "sound forest practices" clause in agreements with pulp and paper companies, the lack of explicit detail as to what constituted those sound practices led to unacceptable effects such as highgrading (Newfoundland Federal-Provincial Task Force on Forestry, 1973, 103, 104). The Task Force made reference to "examples" which showed that company operations under their own management plans were not "the most efficient or the most beneficial from the point of view of a government attempting to achieve maximum utilization of the resource" (Newfoundland Federal-Provincial Task Force on Forestry, 1973, 104). Some practices, such as removing sawtimber from Crown Lands without it being scaled, were in contravention of legislation (Newfoundland Federal-Provincial Task Force on Forestry, 1973, 107).

Outlining the need to plan concurrently upon three time scales (long term, 5 years and 1 year) for regional and provincial forest management, the Task Force suggested that non-economic factors also should play a part in planning. Forest improvement programs, for example, "offer excellent employment opportunities and can often be justified from a social or government standpoint" (Newfoundland Federal-Provincial Task Force on Forestry, 1973, 111). However, the functioning of the Newfoundland Forest Service up to 1973 and "its administration of the forest resource has been inadequately planned and largely ineffective . . .", (Newfoundland Federal-Provincial Task Force on Forestry, 1973, 115; emphasis added). According to the Task Force Report, a variety of interrelated reasons had led to unsatisfactory forest management planning:

> Inadequate forestry legislation and the lack of a government forest policy for the Province has resulted in a forest service prone to making ad hoc decisions, and very susceptible to political pressures and to the demands of special interest groups. Management decisions made under these circumstances are almost inevitably short-sighted and planned hurriedly, if at all, and frequently demoralizing to the staff that have to make them. Many of these pressures could be removed if a comprehensive forest policy, together with clearly defined objectives and goals for the Newfoundland Forest Service, were to be adopted by the Newfoundland Government.
>
> (Newfoundland Federal-Provincial Task Force on Forestry, 1973, 116).

The result, in 1973, was that "A listing of well-defined forest policy objectives cannot be produced for Newfoundland at this time" (Newfoundland Federal-Provincial Task Force on Forestry, 1973, 117). Towards remedying such deficiencies, the Task Force suggested that the capability of the Forest Service to

"appraise and advise on the biological, economic and social implications of policy decisions in matters affecting forestry" should be strengthened. In part, this could be achieved by developing continuing communications with federal agencies and other Provinces regarding their forest planning and management methods and operations (Newfoundland Federal-Provincial Task Force on Forestry, 1973, 118).

2.1.3. Legislation

Another major requirement for improved forest management identified by the 1973 Task Force was the revision of present "out-dated, unwieldy, and inconsistent" forest-related legislation. Legislation was described as "a confusing patchwork of many Acts, amendments to Acts, and regulations which have been passed over a long period of time" (Newfoundland Federal-Provincial Task Force on Forestry, 1973, 81). A consolidated Forest Act was needed that must reflect sound forest policies (Newfoundland Federal-Provincial Task Force on Forestry, 1973, 118). Legislation should be reviewed and modified in the light of "sound economic, social and biological principles" in order to "provide the framework on which to develop concise policy objectives governing the use and management of the forests and forest lands of the Province" (Newfoundland Federal-Provincial Task Force on Forestry, 1973, 82). Among these, the Task Force recommended that the multiple use aspects of the forest resource be recognized and employed in developing policies "that will provide greatest benefit to the public. Timber is not necessarily the most important product; some areas could be assigned primarily to wildlife and recreation, others to timber production, and some to multiple use" (Newfoundland Federal-Provincial Task Force on Forestry, 1973, 130).

2.2 Progress 1973 - 1981

2.2.1. Forest Management Units

The degree to which progress has been made on these problems (and others of more recent origin) has varied. According to the 1981 Royal Commission Report, "There were a number of important developments as a consequence of the recommendations of the [1973] Task Force" (Royal Commission on Forest Protection and Management, 1981, 10). Among these was the creation in 1974 of forest management units. The Department of Forest Resources and Lands now requires major land holders within the nineteen sustained yield management units (Figure III - 1) to submit a forest management plan to the Province. Such plans represent "an attempt to ensure that the forest resource is managed in the best interests of the Province" (Royal Commission on Forest Protection and Management, 1981, 10). A $55.5 million Federal-Provincial Forest Subsidiary Agreement (April 1974) was considered to be the most important development stemming from the Task Force Report, for the Agreement "gave the Provincial Government its first opportunity to initiate a comprehensive programme of intensive[1] forest management" (Royal Commission on Forest Protection and Management, 1981, 11; emphasis added).

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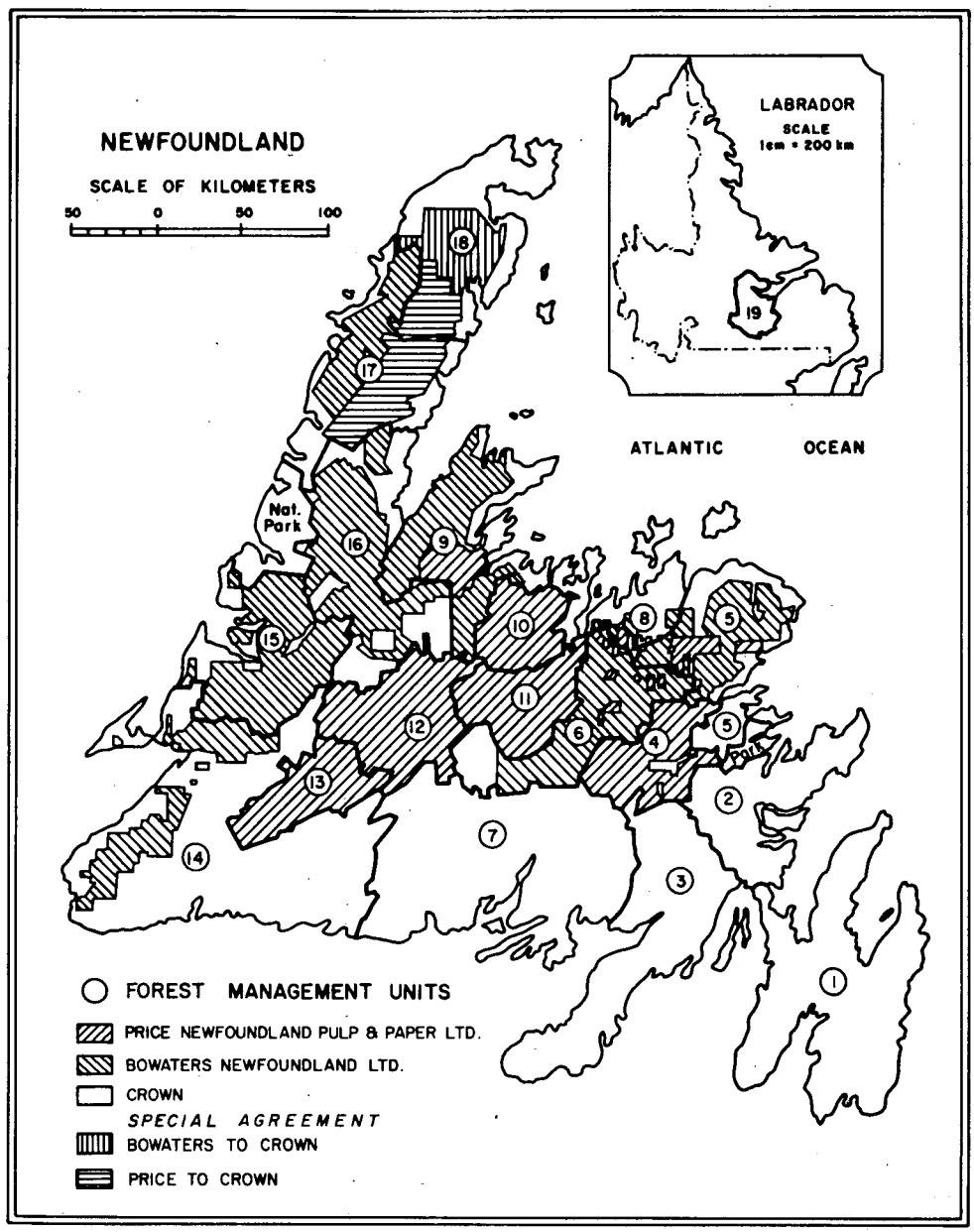
1 Throughout the 1960s and early 1970s, forest management in Newfoundland was practised at the extensive level. Definitions of intensive and extensive forest management, taken from the 1981 Royal Commission on Forest Protection and Management, Report, 8, 9, are as follows: Intensive Management - the practice of forestry so as to obtain a high level of volume and quality of production per unit of area, through the application of the best techniques of silviculture and management; Extensive Management - the practice of forestry on the basis of low operating and investment costs per acre. The crop is harvested and protected and everything else is left to nature.

Figure III - 1

TIMBER OWNERSHIPS IN THE PROVINCE



Source: Royal Commission on Forest Protection and Management, Report, Part II, Government of Newfoundland and Labrador, St. John's, Nfld., 1981, 70.

> Despite the positive developments of the 1970s, progress towards intensification of forest management has been slow. The most serious impediment was failure to protect the forest from spruce budworm attack . . . . Fortunately, a policy to protect the forest against further insect losses has now been adopted by the Government. . . . . Another factor which has impeded progress is the lack of assurance of continuity of funding. .... A complication caused by uncertainty in funding is that it discourages long-term planning of forest management activities. .... Finally, there are other constraints to implementation of intensive forest management in Newfoundland, including inadequacy of data on the status of a number of aspects of the forest resource.
>
> (Royal Commission on Forest Protection and Management, 1981, 11; emphasis added).

2.2.2. Inventories and Management Plans

Chapter III in the 1981 Royal Commission Report, titled "Forest Management Planning", discussed the need for forest inventories and forest management plans as required under provisions of The Forest Land (Management and Taxation) Regulations, 1975, Nfld. Reg. 92/78. "A thorough knowledge of the timber supply and its distribution is necessary before meaningful forest management can be undertaken, and for this reason a valid forest inventory is a principal requirement." (Royal Commission on Forest Protection and Management, 1981, 50). The same appears to be true for land related information particularly, in this case, with respect to forestry. A province-wide inventory by management unit begun in 1975 was scheduled to be completed in 1984. The reinventory procedures were to begin in 1985 (Royal Commission on Forest Protection and Management, 1981, 51). While the contents of such inventories provide useful information for forest management planning by management unit, two major weaknesses exist: (1) difficulty in

updating inventory data to account for losses from insect outbreaks, fires, etc., and (2) unavailability of forest growth information (Royal Commission on Forest Protection and Management, 1981, 53). Were they to remain, these weaknesses would mean that there would be continuing uncertainty in determining available wood supply and in estimating future industry prospects. "The lack of reliable growth and yield information places constraints on the preparation of annual allowable cut calculations" (Royal Commission on Forest Protection and Management, 1981, 54).

The former of these constraints is now being addressed by the installation of a computer-assisted mapping system crossreferenced to the inventory data base. This should allow rapid updating of inventory data and is anticipated to be in place by early 1985. Forest growth information should also be more readily available in the future with the establishment of permanent sample plots. These developments and proposals notwithstanding, it has yet to be illustrated that these weaknesses have been overcome. Other problems, including discrepancies between company and government data on wood supply, still need to be addressed (Royal Commission on Forest Protection and Management, 1981, 54). In short, in spite of "good intentions" and some potential progress, fundamental gaps in knowledge about the forest resource remain, reducing the ability of the Province to attain its stated forest resource related policies.

The Forest Land (Management and Taxation) Act, 1974, S.N. No. 59, identifies the policy of the provincial government as placing all Provincial Forest Land[1] under sustained yield management. It is a goal

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1 The Forest Land (Management and Taxation) Act, 1974, applies to virtually all forest lands except non-alienated Crown Land forests. The Crown Lands Act, 1952, deals with non-alienated Crown Land forests.

of the Provincial government that all forest lands will be maintained in a productive condition and that new growing stock will be established on lands disturbed by logging, fire or insect attack (Royal Commission on Forest Protection and Management, 1981, 55). The management plans prepared for each unit identify the methods (treatments) to be used in reaching these goals. On other-than-Crown Forest Lands, management objectives "are normally related to the production of timber". However, "Other land-use objectives are, where necessary, identified and discussed" (Royal Commission on Forest Protection and Management, 1981, 55).

Unit management plans are inspected/approved by Department staff and then authorized by the Minister of Forest Resources and Lands. Other departments and agencies "which have close forest relationships, e.g. the Department of Environment and the Wildlife Division", also must approve the management plans (Royal Commission on Forest Protection and Management, 1981, 57). According to the 1981 Royal Commission, industrial forest operations encounter no serious difficulties in attaining management plan approval. "In this instance there is usually a single operator who manages the forests for a single product, pulpwood . . . ." (Royal Commission on Forest Protection and Management, 1981, 57; emphasis added). In this instance, it might be expected that "adherence to approved plans can be achieved" (Royal Commission on Forest Protection and Management, 1981, 57). In practice, however, it seems that this is seldom the case.

Crown Land management units, however, are particularly problematic. Especially in management units with a high urban population, ". . . emphasis must be placed on forest management for the production of timber for a variety of uses by many users" (Royal Commission on Forest Protection and Management, 1981, 57). These many users, such as those granted the 24,000 fuelwood cutting permits in 1980, make controls difficult to enforce. "Probably", suggested the 1981 Royal Commission, "an equal amount of non-permit cutting took place".

> Furthermore, in many instances other land uses have a higher priority than forestry and the forest base is being constantly eroded; there is often no guarantee of forest continuity. It is difficult to prepare meaningful management plans under these conditions and it is virtually impossible to implement such plans. A land use policy whereby specific areas are designated for continuous forest production would help to alleviate the problem.
>
> (Royal Commission on Forest Protection and Management, 1981, 57; emphasis added).

2.2.3. Legislation

Even if the availability of more accurate data for planning has helped improve the quality of management plans, and even if there is an increasing recognition of the need for better forest management (triggered by the need to compensate for spruce budworm damage), in 1981 the Royal Commission pointed out that a number of constraints still "impede the progress of Provincial authorities in meeting management objectives".

Confusion over the large number of legislative Acts related to forestry remains as one impediment to progress in forest management. Under the Government Re-organization Act, S.N. 1979, c. 49, sixteen different Acts were assigned to the Department of Forest Resources

and Lands for administration. Special legislation still governs operations of the pulp and paper industry, and special Acts exist for other developments which never materialized (Royal Commission on Forest Protection and Management, 1981, 58). The Crown Lands Act (amended 1970) and the Forest Land (Management and Taxation) Act (1974) are the principal Acts by which provincial forest resources are presently administered. At least in 1981, similar procedures adopted by the Department of Forest Resources and Lands in administering both Acts resulted in "considerable overlap and some confusion ....". "This situation can be remedied only by a consolidation of all forestry legislation under one comprehensive Act governing all aspects of forest administration and management" (Royal Commission on Forest Protection and Management, 1981, 58).

In the light of these criticisms a new Forestry Act has been drafted, but at the time of writing no details were available.

2.2.4. Forestry Practices

Another constraint to meeting management objectives is the lack of a "standard regulatory system pertaining to forestry practices". Again, "good forestry practices" are not defined or described. Further, "appropriate penalties for non-compliance with specific conditions" must be developed (Royal Commission on Forest Protection and Management, 1981, 61). Presently (1981), the "only possible penalty for both minor and major breaches of the [Forest Land (Management and Taxation)] Act is the cancellation of the certificate of managed lands" (Royal Commission on Forest Protection and Management, 1981, 58). It was suggested that, for minor breaches of forest management practices, such a penalty was too severe. In a similar way, Crown Lands management systems permit only the cancellation of a cutting permit or initiation of prosecution in Provincial Court for any infractions of cutting rules. These alternatives are considered

to be too severe for minor offences and also are impractical because of problems of legal proof of infractions (Royal Commission on Forest Protection and Management, 1981, 58, 59; see also p. 72). Currently under consideration is a "ticketing system" to penalize those responsible for minor infractions but this has yet to be implemented. In general terms as the 1981 Royal Commission noted:

> There is a need for the development of new forestry legislation to consolidate existing legislative acts and to provide regulations for administering all freehold, leased, and licensed forest lands, including a system of penalties for non-compliance with the regulations.
>
> (Royal Commission on Forest Protection and Management, 1981, 59).

The 1981 Royal Commission identified also a problem of internal inconsistency between management policies and practices. Having indicated that "management plans are based upon the principle of sustained yield, which implies that the forest land will be returned to a productive condition after harvesting .... ", the Royal Commission noted that management plans were designed to give equal weight to cutting operations and silviculture. "In practice, however, the present operating plan concentrates on the cutting cycle and gives only cursory consideration to silviculture" (Royal Commission on Forest Protection and Management, 1981, 59). In commenting upon this problem, the Royal Commission stated "Probably this is inevitable[1] at the present stage of development, but if management

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1 If comprehensive land or forest management policies existed in the Province, it would not be "inevitable" that focus would be placed upon the cutting cycle. However, the danger of downplaying the importance of regeneration exists, as the recent B.C. experience illustrates. (See Victoria Times-Colonist January 3, 1984, p. 2, (Appendix 1)).

plans are to be effective, they must ensure that silviculture concerns are adequately emphasized". Adequate emphasis includes "assurance by Government and industry that sufficient funds and staff will be committed to silvicultural programmes[1] on a long-term basis" (Royal Commission on Forest Protection and Management, 1981, 59).

2.2.5. Review and Evaluation

A related concern to ensure "adherence to the policies governing management of the Provincial forests and the application of these policies in the form of forest management plans ...." was that such plans "should be subject to annual inspections and audit" (Royal Commission on Forest Protection and Management, 1981, 59, 60). In 1981 no provision existed for any formal inspection or audit; no critical analysis or evaluation of management plans and actions was required. The Royal Commission noted that annual inspections would provide consistent, cumulative documentation of forestry practices and the progress of silvicultural treatments (particularly important, given "a considerable backlog of nonregenerating lands") (Royal Commission on Forest Protection and Management, 1981, 60, 61). Audits would "ascertain that forest management procedures are in agreement with established Governmental policies and that the desired results are being attained". A "policy, planning and evaluation agency within the Department of Forest Resources and Lands" would have to be established to reach this objective (Royal Commission on Forest Protection and Management, 1981, 60).

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1 In Alberta, for example, detailed silvicultural plans are required by major operators under the Forest Management Agreement.

2.2.6. Tenure Systems and Multiple Uses

Chapter IV in the 1981 Royal Commission Report, titled "Forest Land Tenure", raised a number of issues regarding the tenure systems and multiple uses of the forest land base which are of particular significance to this study. The Newfoundland forest land tenure system: (1) defines the conditions under which individuals or organizations use the timber resource of the Province; (2) establishes the ground rules under which large processing plants may obtain their timber supplies; (3) protects the historic right of Newfoundlanders to harvest wood from the forests adjacent to their settlement for fuelwood, small sawmills and other purposes; (4) provides a mechanism for the collection of resource revenues (economic rent) for the owners (uusually the Provincial Government); (5) can be used to promote better forest management; and (6) has to recognize multiple use of the forest land base (Royal Commission on Forest Protection and Management, 1981, 62, 63).

Given the functions of the forest land tenure system outlined above, a variety of pressures arise. For example, individual "cutting rights are becoming more important as the cost of alternate fuels continues to rise and log supplies are reduced by the spruce budworm outbreak" (Royal Commission on Forest Protection and Management, 1981, 61). "The forest land tenure system has to accommodate the sometimes conflicting needs of the large-scale holders with those of the individual fuelwood cutter and sawlog harvester" (Royal Commission on Forest Protection and Management, 1981, 63). As the Royal Commission noted, demands from both groups will increase pressure on the resource in the future. Multiple use demands are expected to increase as well. "There have been growing requirements for lands to be allocated to other primary uses such as municipal water

supply areas, recreation areas, and hydroelectric development" (Royal Commission on Forest Protection and Management, 1981, 63). " A good tenure system should encourage the highest economic use of the forest land" (Royal Commission on Forest Protection and Management, 1981, 63; emphasis added).

The 1973 Task Force recommendations concerning a new forest land tenure system have been partially implemented. The Forest Land (Management and Taxation) Act of 1974 highlighted the introduction of a tax system (on lands over 120 hectares) designed as an incentive for holders of private forest lands to manage their lands in accordance with Ministry (Forest Resources and Lands) objectives. Some renegotiation of tenure agreements has taken place; timber exchanges have occurred and continue to be negotiated; and the Government has acquired freeholds lands owned by the Reid Newfoundland Company. Though, by 1981, no new tenure agreements had been finalized, it appeared that a 20-year (renewable) period was being used (Royal Commission on Forest Protection and Management, 1981, 65). Government policy seems to be against sale of forest lands; there have been no such sales since the 1973 Task Force Report (Royal Commission on Forest Protection and Management, 1981, 66). No study of appropriate stumpage evaluation system(s) has been done, nor has Government formally designated areas of non-alienated Crown Lands for domestic use and for small commercial operations near rural communities as the Task Force recommended to be done (Royal Commission on Forest Protection and Management, 1981, 65, 66).

2.2.7. Land Classification System

The need for a land classification system to facilitate effective management was again raised by the 1981 Royal Commission. "If the Department of Forest Resources and Lands is to be ultimately responsible for forest management, then the land base has to be clearly identified and separated from other primary use areas. A land classification system should identify the priority land uses for forestry, agriculture, recreation, municipal development areas, and other purposes" (Royal Commission on Forest Protection and Management, 1981, 66). As was discussed in the Introduction, it was realized that developing such a system would be a major, time-consuming task; consequently the Royal Commission noted that as a "second best solution" the Department of Forest Resources and Lands could identify the areas of land that would be managed primarily for fibre production. Legislation could then be prepared to "have these areas declared productive forests and given protection from alienation for competing land uses" (Royal Commission on Forest Protection and Management, 1981, 66).

Concern about the lack of a land classification system arose because, without it, there is

> .... no protection for productive forest lands against sudden and unplanned alienation for other uses. This makes forest management planning difficult, as there is no stability in the land base. It is difficult to calculate annual allowable cuts and future harvesting operations if the area under management is subject to change on short notice. Uncertainty in the designation of lands for forestry use is also an important deterrant to silviculture investments. The problem appears to be particularly acute on the Avalon Peninsula, where forest land use has severe competition from agriculture and other uses. . . . .
> Of course, no land classification system should be so rigid as to prevent the highest economic use of land. Prime forest, agriculture, and recreation lands should

> be given protection against competing uses, and changes in land use should occur in an orderly, planned manner. This would be the objective of a classification system.
>
> (Royal Commission on Forest Protection and Management, 1981, 66, 67; emphasis added).

2.2.8. Fuelwood Cutting

Figure III - 1 identified timber ownership in Newfoundland. Tenure rights to about 60 per cent of the productive forest land of the Island (the interior forest lands) are held by two companies. On the remaining 40 per cent of productive forest lands (primarily coastal areas) are "tens of thousands of individuals [with] common property tenure rights" (Royal Commission on Forest Protection and Management, 1981, 80). The 40 per cent non-alienated Crown forest lands (57 per cent of the total area of the Island) experience problems of tenure that are "more serious and complex than those of the interior" (Royal Commission on Forest Protection and Management, 1981, 80).

The 1981 Royal Commission Report identified two major problems affecting "public" forest lands, the first being uncontrolled cutting on non-alienated Crown Lands. With regard to private cutting for fuelwood and logs, the Royal Commission noted that a large number of uninformed cutters, dispersed over a wide geographic area, harvest "prime immature stands that should be left to grow. There can be no programme of sustained forest management on Crown Lands as long as these cutting practices continue" (Royal Commission on Forest Protection and Management, 1981, 81). In 1980 about 24,000 people were issued domestic cutting permits. Not only does this volume of potential cutters make effective control over cutting operations extremely difficult, but also estimates of annual cuts are

unreliable since "only a fraction of the people cutting on non-alienated Crown Lands bother to get a permit" (Royal Commission on Forest Protection and Management, 1981, 81).

There appears to be no easy solution to this problem: "Individual rights to harvest wood are well established and should be respected" (Royal Commission on Forest Protection and Management, 1981, 81; emphasis added). An improved public relations and education programme was required "to advise individuals of proper harvesting procedures and to seek cooperation in improved utilization of existing timber supplies" (Royal Commission on Forest Protection and Management, 1981, 81). The Royal Commission Report suggested that the cutting permit system should not only continue but be strengthened and its public acceptance reinforced by a publicity programme (Royal Commission on Forest Protection and Management, 1981, 82). Additional forestry staff to work in the field would be necessary to achieve these goals.

2.2.9. Protected Watersheds

The second problem affecting public forest lands is that concerning protected watersheds. The protected watershed areas[1] are non-alienated Crown Lands located mainly adjacent to coastal settlements. The responsibility for forestry operations there resides with the Department of Forest Resources and Lands. "If harvesting operations

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1 Protected Watershed areas are established under the Department of Provincial Affairs and Environment Act, S.N. 1973, No. 39, and are designed to protect municipal water supplies from possible pollution (Royal Commission on Forest Protection and Management, 1981, 83).

negatively affect water quality, they can be halted under the provisions of the Department of Provincial Affairs and Environment Act" (Royal Commission on Forest Protection and Management, 1981, 83). Since "protected watersheds include significant areas of productive forest land" - about one-third of the total protected watershed area in 1981 was productive forest land - and because an increase in the number of protected watersheds is expected, there is concern that timber harvesting areas will be further reduced (Royal Commission on Forest Protection and Management, 1981, 83).

The Royal Commission felt that "special multiple-use management plans" should be developed for protected water supply areas. Provision of a community clean water supply would be the prime management objective of such a plan, with secondary objectives of compatible forestry and recreation uses where possible. However, lack of municipal expertise in development of (multiple use) management plans would likely lead to difficulties in developing and implementing such plans. Nevertheless the intent would be to give municipalities the responsibility for management and protection of water and forest (and other) resources in their localities.

IV - ACTION: TOWARD COMPREHENSIVE LAND USE PLANNING AND RESOURCE MANAGEMENT

1.0 INTRODUCTION

As noted in the previous chapter there has been relatively little concern with broader resource management issues that are external to individual sector concerns and thus little concern with comprehensive land use planning and management per se. In general, prior to the early 1970s there was little, if any, systematic planning for resource management at any level. This resulted in part from a situation where:

(1) There were few real, or perceived, competing demands for resource use in most areas;

(2) There had been allocation of large areas of the land base to single use activities;

(3) There was limited concern with the concept of management per se and similarly little concern with environmental protection;

(4) There were limited resources and capabilities within individual line Departments to undertake long range planning;

(5) There was an absence of legislation and administrative organization that would promote planning in general and integrated planning in particular.

Over the last decade, however, there have been a number of significant changes in both attitudes and practices within most, if not all, Departments. With reference to the Department of Forest Resources and Lands in particular there has been the recognition that:

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1 A possible exception is the Waters Protection Act (1966) which is concerned with Water Quality for public consumption.

(1) poor forestry practices in the past have had significant negative impacts on current and future timber supplies;

(2) there will soon be serious timber supply shortfalls, given current levels of demand, a fact emphasized in recent years by further timber resource losses from budworm and related insect infestation (Mercer, 1983).[1]

In other resource sectors changes in attitude have been reflected in legislative changes, such as the Consumer Affairs and Environment Act (1973), and the Environmental Assessment Act (1980). In addition there have been planning capability improvements resulting, for example, from expenditures of funds under the Canada/Newfoundland Subsidiary Agreements, implemented through the General Development Agreement by the (then) Department of Regional Economic Expansion and the Province.

The net effect of these and other attitudinal and organizational shifts has been to:

(1) increase demands for land;

(2) increase the competition among land using agencies;

(3) increase the awareness of the need for long run management of lands under the jurisdiction of these agencies.

However, in the absence of any fundamental changes and rationalization of existing legislation and administrative practice that would promote comprehensive land use planning and resource management, the above changes will serve only to promote conflict

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1 This issue may need to be reassessed given the undertain situation vis à vis the Bowater Corner Brook operation; the apparent stabilization of the budworm problem; recent reductions in wood requirements by both Abitibi-Price and Bowater because of changing paper weight, and suggested expansion of harvesting practices to steep-slope sites. These potentially beneficial changes notwithstanding, the supply shortfalls estimated by the Department of Forestry should be viewed as optimistic scenarios, hence a high probability of shortfall still remains.

between land using agencies. In the last few years there have been several examples of "planning strategies" by some Departments that by virtue of their "exclusive use" approach to land use have alienated land from all other uses. Clearly, when such a philosophy is pursued by several land using Departments it can promote only conflict. The results may be that lands are allocated to less than optimum uses, and that a planning environment which is conducive to neither rational nor long term decision making is created.

2.0 MECHANISMS TO RESOLVE LAND USE CONFLICTS

This is not to suggest that no attempts have been made to address the problems of conflict and alienation, particularly with respect to Crown Lands. However, action to date can best be described as reactive, rather than pro-active. Such action does not constitute "planning" either in a general sense or in a specific, comprehensive planning sense.

2.1. The Inter-Departmental Land Use Committee

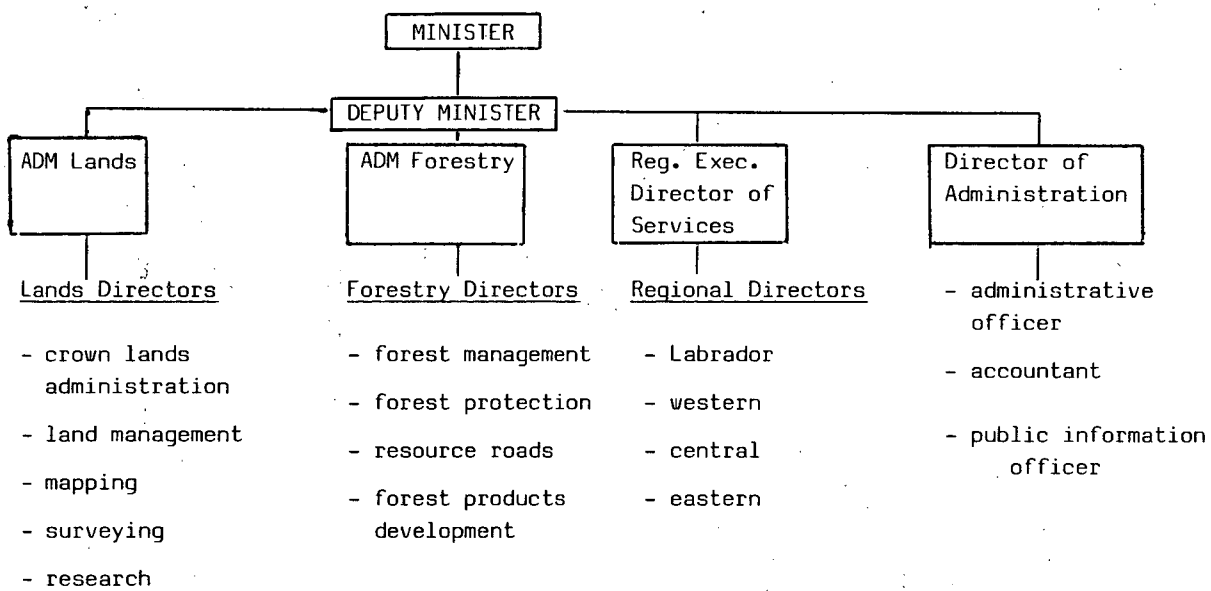
The sole mechanism for resolving inter-agency land use conflicts at the present time is the Inter-Departmental Land Use Committee (ILUC), which exists within the Land Management Division of the Lands Branch of the Department of Forest Resources and Lands.

The overall structure of the Department of Forest Resources and Lands is illustrated in Figure IV - 1. Within the Lands Branch the Crown Lands Division is responsible for the enforcement of the Crown Lands Act, and the Land Management Division is charged with prime responsibility for "coordinating and integrating government

Figure IV - 1

DEPARTMENT OF FOREST RESOURCES AND LANDS;

ORGANIZATIONAL STRUCTURE, 1984



land use policies to ensure that the Province's public lands are managed properly" (Newfoundland Department of Forest Resources and Lands, 1982, 61). ILUC's function within the Land Management Division is to adjudicate all proposals involving the use of Crown or public lands.

Clearly, the Lands Branch and the Forestry Branch have overlapping concerns when land and forest resource bases are considered. Yet, administratively, these two branches have functioned more independently than they ought to have done, given the frequently conflicting nature of forest and land resource use decisions which have been required. It has been recognized, for example, that:

> "the present [1983] organizational structure and management responsibilities within government are along single resource lines. This method of organizational design fosters the development of interdepartmental conflict and often results in one agency pursuing its goals to the exclusion of other competing agencies. ... the present system is inappropriate to ensure maximum utilization of the Province's resources."
>
> (Fugate, 1983, 1).

ILUC was, in part, a response to this type of dilemma. Its primary function is to act as a forum where conflicts can be discussed. Membership of the Committee extends to the Director level and above of any government Department or Agency, the Committee Chairman being the Director of Land Management of the Lands Branch.

Part of the Committee's function is to coordinate land use planning activities throughout the Province. However, any resolution of conflict appears to be possible only through consensus, as the Committee has no formal mandate to enforce particular courses of action, nor is there any established Provincial Land Use Policy or land use allocation criteria upon which consistent decisions can be based.

One example of the problem of conflicting goals and the coordination/direction efforts of the Land Management Division when land use conflicts arise, has been described as follows:

> "The most significant problem during the year [1981/82] was the conflicting agriculture and forestry policies under the St. John's Urban Region Regional Plan. Under the Plan, both forestry and agriculture are permitted to exist in the same area. This situation was not acceptable to Forest Management staff who required a land base for long term management purposes. As a result of the co-ordinating efforts of the Land Management Division, that problem is near resolution. ... both agencies have agreed in principle with a formula presented by the Land Management Division which will be used to amend the Regional Plan. Basically, the conflict areas will be subdivided as far as possible into distinct resource areas. Remaining overlapping areas will be managed on an integrated basis."
>
> (Newfoundland Department of Forest Resources and Lands, 1982, 62).

Whether or not the problem "is near resolution" is questionable, as the basic conflict between agriculture and forestry is still, in fact, unresolved. Furthermore, the "solution" whereby most conflict areas are separated into "distinct resource areas" may well represent a sub-optimal outcome compared to a more broadly applied "integrated use" solution.

A second major effort of the Land Management Division has been to develop regional plans, specifically the "Southern Shore Crown Land Plan" (Fugate, 1983), and the "Random Island Crown Land Plan" (Sansom, 1982). "The regional plans serve to enunciate the Province's natural resource and land use policies and to provide a framework for the development of integrated resource plans." (Newfoundland Department of Forest Resources and Lands, 1982, 61). It is interesting to review and compare these land use

plans, both in terms of the broad statements they make, as well as in detail with regard to land and forest use policies; unfortunately, their purpose and aims appear to be beyond what they can deliver.

2.2. Crown Land Plans

The 1982 Random Island Crown Land Plan (Sansom, 1982, ii; emphasis added) identified the mandate of the Department of Forest Resources and Lands as being "to manage the Province's Crown Land resources in a manner which ensures their continuous use and development for the maximum social and economic benefit of the residents of the Province." The 1983 Southern Shore Crown Land Plan (Fugate, 1983, iii; emphasis added) stated things somewhat differently: "The mandate . . . is to ensure Crown Land within the Province is managed properly so that the range of natural resources derived from this land base are developed in a coordinated and environmentally sound fashion." Recognition of the fact that there is a range of resources derived from the land base represents an important step toward developing an attitude conducive to, if not the achievement of, the coordinated and integrated approach to resource management recommended by the Royal Commissions and Task Force reports.

The planning principles outlined in the 1982 Plan are useful as they indicated, at least in part, the approach taken by the Department of Forest Resources and Lands toward planning for Crown Lands. The principles were stated as follows:

- the plan should augment the effectiveness and efficiency of day-to-day Crown Land allocation, management and decision-making;
- the plan should assist other government departments and agencies in developing their planning strategies;

- plan policies should provide long-term benefits over short-term gain;
- allocation, management, policies and procedures should be developed on the inherent biophysical capabilities of the land base for various uses, consistent with long-term socio-economic requirements;
- plan policies should maximize future options;
- the public good takes precedence over individual gain;
- planning is a dynamic, evolving, changing process.

The development of a planning program for Crown Land by the Department does not attempt to negate or supersede the management responsibilities of other government agencies. The Department recognizes the fact that other agencies have planning and management responsibilities, within their various statutes, for control and development relative to various resources and local governments. It is the intent of the Department to assist and encourage these agencies to further their mandates with respect to unalienated Crown Land for the maximization of long term socio-economic and environmental benefits to the populace of the Province (Sansom, 1982, iii, iv).

Before looking more closely at the two Regional plans, it is necessary to clarify the meaning and use of the terms "policy", "integrated" and "comprehensive" (resource) management. This is necessary because there appears to be a lack of clarify and/or consistency in Departmental use of these terms. Using World Book Dictionary definitions of each term, we find: (a) "policy" to mean a plan of action, way of management; (b) "integrated" to mean to bring parts together into a whole; (c) "comprehensive" to mean of large scope or extent; including much; and (d) "management" to be control, handling, direction. Two definitions of resource management specifically are useful as well:

(a) resource management represents the actual decisions concerning policy or practice regarding how resources are allocated and under what conditions or arrangements resources may be developed (Mitchell, 1979, 3);

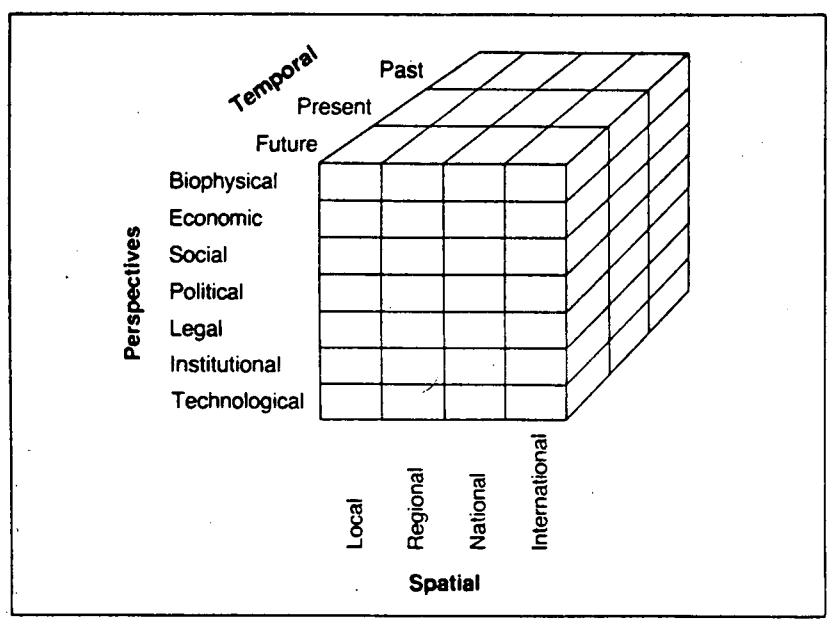
(b) [resource management] .... may be defined as a process of decision-making whereby resources are allocated over space and time according to the needs, aspirations, and desires of man within the framework of his technological inventiveness, his political and social institutions, and his legal and administrative arrangements. Resource management should be visualized as a conscious process of decision involving judgement, preference and commitment, whereby certain desired resource outputs are sought from certain perceived resource combinations through the choice among various managerial, technical and administrative alternatives. (O'Riordan, 1971, 19).

The dimensions of in-depth knowledge necessary to achieve effective decisions concerning land, forest or any other resource sector or issue are illustrated in Figure IV - 2. This framework not only illustrates the considerable range of factors which influence resource decision making, it also emphasizes the difficulty of considerations facing decision makers. In fact, Figure IV - 2 is a matrix representative of features vital to an integrated and comprehensive approach to management.

The 1982 Random Island Crown Land Plan basically describes the various resources in, and the land uses of, the region. It is less a planning document that it is a statement of "resource priorities" and of the need to "avoid undesirable land use" (rather than to strive for "best" use). While these points may be valid in an expression of land use policy, they do not constitute "a plan of action" or a "way of management". There is, for example, a statement that "It is important that each and every application

Figure IV - 2

DIMENSIONS OF RESOURCE ANALYSIS



Source: Mitchell, Geography and Resource Analysis, 1979, 6.

for Crown Land in rural designated areas be properly assessed in light of all the other possible uses of the land" (Sansom, 1982, 50; emphasis added). With the exception of the following, there are no specifications as to what constitutes a "proper assessment"; there is no "plan of action" given to achieve this "comprehensive" management goal:

> The primary objectives when making recommendations with respect to the suitability of a unit of Crown Land for a specific use are to ensure that:
>
> 1. The proposed use will not conflict with other existing or potential land uses.
> 2. The resource base is capable of supporting the specific development.
> 3. The site is unencumbered Crown Land.
>
> To achieve the above objectives requires the analysis of the plan maps, policies and other records and field investigation (Sansom, 1982, 83).

Examination of the "land use designations" tables in the Plan (Sansom, 1982, 53 ff.) indicates that the objectives in designating an area for forestry use are to: (1) minimize conflicts with other land uses; (2) maximize forest production, and (3) ensure the wise and efficient use of the areas [sic] forest resources. The fact that these objectives are so broad as to be almost meaningless is problematic in pursuit of useful and effective policies and plans. The "management/development guidelines" (Sansom, 1982, 53) are only a little more specific: On lands designated for forestry:

(1) no Crown land alienation for purposes other than forestry associated use [will be permitted] except where an approved development plan exists and has been agreed to by forestry;

(2) [the Department of Forest Resources and Lands will] prepare studies for future silvicultural operations, and

(3) [will] manage the areas to ensure future long-term forest development strategies.

To be usefully implemented such guidelines would need to be more explicit. For example, what is implied in managing areas to ensure future long-term development strategies? What are the strategies perceived to include?

There appears to be a lack of consistency within the Regional Plan concerning forestry. While "Forest utilization is limited primarily to selective cutting to feed a proliferation of small sawmills", the area lacks "mature timber stands" because of major forest fires and man's overcutting (Sansom, 1982, 15). In addition, the area "has a relatively low capability for forestry", but, at the same time, "under proper forest management the actual productivity could be greatly increased" (Sansom, 1982, 15). Nevertheless, "The forest industry is the major resource user with the greatest potential for development and expansion .... [which] may lead to some future land use conflicts. However, these conflicts are expected to be minimal and should be capable of resolution between the agencies or groups concerned" (Sansom, 1982, 36). Again, no "plan of action" is provided to give meaning to these somewhat contradictory statements.

The "Implementation Plan", which "has been designed for the use of the Regional Lands Office for day-to-day assessment of Crown Land applications within the Plan Area" (Sansom, 1982, 85), and which should specify the "way of management", identifies the plan policies for forestry as:

> Policy #2 Forestry
>
> Objective:
>
> To ensure the wise and efficient use of the forest resources by minimizing conflicts with other land uses and the maximization of forest production.
>
> Implementation:
>
> Applications within the designated Forestry areas are generally restricted to forestry related uses. Other uses (e.g. recreation cottaging) may be allowed where approval has been granted by the Forestry Branch.
>
> (Sansom, 1982, 86, 87).

Not only is this not a policy statement (as policy was defined, above) but it appears also to be stated in isolation from other "policies" which also identify objectives as minimizing or maximizing certain aspects of resource use. These "policies" may, in fact, conflict (they are not integrated). Comparison of Policy #4 Wildlife ("to protect sensitive wildlife areas from human disturbance and to maximize the wildlife potential of the Plan Area") with that of Policy #2 Forestry, above, would suggest that where wildlife and forestry land uses overlap, conflict would occur. It is not possible to maximize simultaneously

both forest production and wildlife potential.[1] There appears to be no system of priorities, and no mechanism is provided in the Plan for resolution of such conflicts. As it stands, the Plan is not a very useful document for planning or attaining a coordinated and integrated approach to resource management.

Both the 1982 Random Island Plan and the 1983 Southern Shore Plan are "partial" or "exclusive" in nature. That is, both plans limit the scope of their analysis. While this is necessary in view of the wide array of considerations identified (Figure IV-2) as potentially relevant, it is unclear by what criteria the decision to address "only those areas which are considered to be critical to the management of the resources in the region" was made, and by whom it was made (Fugate, 1983, iii, iv). In contrast to the 1982 Plan, the Southern Shore Plan does attempt to identify priorities: "units of land may carry a primary resource designation indicating that a particular resource use takes precedence over others, unless qualified through the "special case" section of the policy statement. Land units that carry no special designation are considered suitable for multiple use" (Fugate, 1983, iv). Still, however, criteria for making such designations are not provided, nor is the reasoning behind the selection of multiple use areas explained.

Even if the 1982 Plan (Sansom, 1982, 2) "forms the general basis for coordinating interdepartmental activities", and the 1983 Plan (Fugate, 1983, iv) is "designed to provide the general framework for more detailed resource management plans by the responsible agencies",

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1 The Plan acknowledges this difficulty (Sansom, 1982, 6) but makes no attempt to indicate how the "best" use is attained. Without a previously agreed upon system of priority ranking it is more difficult than necessary to achieve a satisfactory resolution of conflicts.

there is insufficient policy base provided to establish optimum resource uses for land areas. And, even if an interdisciplinary committee were formed by ILUC and sought to "identify the needs and management objectives of the concerned agencies" (Fugate, 1983, 1, 2), a direct consideration of the views and concerns of the public appears to have been overlooked. Similarly, insufficient explicit detailed attention seems to have been given to evaluation of resource capability (see earlier references to lack of basic forest/land data), economics and demand. Present land uses seem to be understood adequately, but no projections are given (except in the broadest of terms) to relate present and future rates of growth/demand for land and land based resources.

In terms of forestry, for example, the 1983 Plan (Fugate, 1983, 10) indicated that the Southern Shore Plan area "is one of the poorest forest areas in the Province, consisting predominately [sic] of CLI Class 7 land." In spite of this, and without providing evidence that viable forest resource production could (or should be assisted to) occur in the area, "it is the intent of this Plan to establish areas for the long-term management of the forest resources. In these designated areas, forestry will be considered the primary use" (Fugate, 1983, 28). While no one would argue against preservation of forest land to provide "the local residents with raw materials, fuel, local employment, wildlife, recreation and tourist-related opportunities" (Fugate, 1983, 27), the Plan does not indicate how much land area in which portion(s) of the region would be involved, particularly if commercial operations were to be considered. Neither does it specify how the "best" area(s) for forestry purposes would be selected and how any "incompatible" present land uses in those areas might be accommodated.

The "Forestry Policy" put forward in the Southern Shore Crown Land Plan (Fugate, 1983, 30) is reproduced below as several concerns emanate from the statements made:

FORESTRY POLICY

OBJECTIVE: To establish and protect a land base for the long term utilization of the forest resource for both commercial and domestic uses.

APPLICATION: In those areas with a forest designation, forestry will be considered the dominant use, and this land base will be preserved for the long term use of this resource.

Secondary resource uses will be permitted, provided they are necessary for the development of the forest resource or they are compatible and do not eliminate any significant amount of this resource base.

Secondary resource users should consult with the Forestry Branch prior to planning to ensure that the terms of this policy can be met. Responsible forest management and resource road construction will be carried out to the best extent possible.

SPECIAL CASES:

1. Agricultural operations adjacent to Forest Zones - Where land is adjacent to an existing farm and land is needed for the expansion of this operation, it will be permitted to extend into the Forest Zone.

2. Forest Zone Overlapping Aggregate Potential Zone - Aggregate extraction will be permitted providing topsoil is retained and the land is returned to a useable form and all merchantable timber is salvaged.

3. Forest Zone Overlapping Wildlife Reserve - Forestry activities will be permitted in Forest Zones. In the remaining areas of the Wildlife Reserve, harvesting activities should be coordinated with the Wildlife Division to ensure compatibility with their Wildlife management plans, and that the terms of the Wildlife Policy are adhered to.

NOTE:

Wildlife management is considered compatible and intricately linked with proper Forest Management. Therefore, the Forest Zones can be considered to be reserved for both uses. The coordination of management plans will ensure that both resources reach their optimal utilization.

It is curious, given the limited capability for forestry in the Southern Shore Plan area, that commercial forestry should be specified as part of the Plan objective. While it is clear that the Plan anticipates reserving land for long term forest use, the scale of any perceived commercial development is not specified and the Plan does not indicate whether domestic or commercial use ought to have priority. For any areas designated as forest lands, it is not specified how the boundaries are to be determined, nor who ought to determine such boundaries.[1] Similarly, in indicating that secondary uses will be permitted in forest areas if they do not eliminate any significant amount of the forest resource base, there is no scale provided by which to determine how much is "significant". In other words, a plan should provide details and rationales for these "applications". There is one other small point regarding wording: the meaning of the comment that responsible forest management and resource road construction would be carried out to the best extent possible is unclear. Is there an (unintended) implication that responsible forest management (which is not defined) may be compromised given certain times/conditions?

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1 Presumably, the Department of Forest Resources and Lands has determined boundaries for resource areas. But if the maps that are contained within the Plan represent the functional maps, then they are clearly inadequate for planning purposes. If larger scale maps exist as part of the Plan, they have not been made available to us and we would reserve judgement on their utility until they have been reviewed.

The special cases section of the forestry policy - which could have been viewed as an opportunity to indicate the rationale for and priority rankings of land uses - merely indicates that forest lands may also accommodate agricultural operations, aggregate extraction and wildlife uses. If this is what is meant by or understood as multiple use of land units (the terms is not defined in the Plan), then the special cases section is a very weak one. Why is it logical to permit agricultural operations to expand into forest lands? Does this imply agricultural land is of greater priority than forest land? Is it enough to require salvage of all merchantable timber if aggregates are extracted from forest lands? What about the need to replant trees (earlier the lack of regeneration was identified as a problem)? Even though "Wildlife Management is considered compatible and intricately linked with proper forest management" and "therefore, the Forest Zones can be considered to be reserved for both uses", is it realistic or wise to indicate forestry will take precedence over wildlife (in certain areas) when there remain gaps in knowledge of wildlife habitat needs? Given that understanding of wildlife habitat/range needs is incomplete, and that it is not possible to reach simultaneously optimal utilization of both forest and wildlife resources, the Plan may be overoptimistic in indicating forestry activities can occur in (the overlap portion of) wildlife reserve areas. Being "reserved for both uses" does not imply effective (multiple) use.

Changes over time in societal and economic conditions will influence management decisions, of course. Thus, while the Southern Shore Plan indicates it is "open and flexible to incorporate new information and evolve with the region as it grows and develops" (Fugate, 1983, iv, v) it seems to be development oriented. Sometimes, the "best use" of land and associated resources is "no use at all"; this option for "conservation" does not appear to play a significant role in

the thinking of the Land Management Division. There is also a danger that, since "the policy statements should only be taken in context of the region that the plans were prepared for and should not be construed as having province-wide application" (Fugate, 1983, iv), administration will (appear to) be inconsistent. This is a prime reason for developing and implementing a provincial statement of land use policy which would permit regional application of integrated land use policies to achieve the desired comprehensive resource management and development plans for the Province. A provincial policy would also have the advantage of "forcing" resource departments to act cooperatively "at all times", rather than "when it becomes necessary" (Fugate, 1983, 49) - whatever and whenever that is - as is the case presently.

While it is fair to say that the 1983 Plan in particular has been able to "provide the resource agencies with a common understanding of each other's management objectives", it is not evident that the Plan defines adequately the "ground rules" necessary for the agencies to "pursue their objectives in a secure manner and in the spirit of cooperation" (Fugate, 1983, 49).

V - PARALLELS: SELECTED CANADIAN EXPERIENCE WITH COMPREHENSIVE LAND USE PLANNING

1.0 INTRODUCTION

Land alienation and land use conflicts are not new problems. They have been encountered elsewhere and approaches have been developed to address questions of land use policy, planning and allocation. There is of course no "one" approach that will satisfy all situations, and clearly there are dangers in the direct transfer of experience from one context to another. However, this does not mean that we cannot learn from others' experiences and to this end comprehensive approaches to land use planning in Ontario, Alberta, and British Columbia, are reviewed below. This review serves both to highlight the shortcomings of the current approach in Newfoundland as well as to identify useful structural elements that could be considered for adoption here.

2.0 THE ONTARIO STRATEGIC LAND USE PLANNING PROGRAM AND THE WEST PATRICIA LAND USE PLAN

2.1. Introduction

Ontario's Ministry of Natural Resources, the "official custodian and manager of Ontario's Crown Land", has been facing increasing demands on the land and water resources of the province.[1] In response to the challenge of these demands, and the challenge of coordinating the allocation of land and water uses to "produce the maximum overall benefit for the people of Ontario", the Ministry of Natural Resources

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1 The term "land" is used in Ontario planning circles to include both land and water (unless otherwise specified).

has developed a "comprehensive planning programme which will guide and coordinate the land-using programmes of this Ministry throughout Ontario" (Ontario Ministry of Natural Resources, 1981, 4).

A three-level hierarchy of planning has been implemented in Ontario. The first level is the provincial plan which gives broad policy direction to the three planning regions of the province (Southern, Northeastern and Northwestern). At the second level, regional plans give policy directions and specific targets to be achieved in the 47 administrative districts of the Ministry. The third level is the local area plan which contains more detailed information necessary at the district level. The West Patricia Land Use Plan is such a local area plan.

> The purpose of the West Patricia planning program is to coordinate the various programs of the Ministry of natural Resources [a wide variety of programs exists, ranging from forest production to outdoor recreation and preservation] so that conflicts and inefficiencies are minimized, and all program objectives are achieved to the degree possible through to the year 2001. While a regional and provincial perspective will be recognized throughout the preparation of the plan, primary consideration will be given to the interests of local residents and traditional users of the Planning Area. Every effort will be made to allocate land and water resources to ensure that any development will be compatible with the maintenance of a high quality environment and the aspirations of the local people.
>
> (Ontario Ministry of Natural Resources, 1981, 4).

2.2. Planning Process

The actual planning process was conducted in three phases, as the following diagram (Figure V-1) illustrates.

Figure V-1

WEST PATRICIA LAND USE PLANNING PROCESS

	Ministry of Natural Resources	Public Participation
Phase I - Data Collection	Information/Data Collection and Analysis on West Patricia Planning Area (Nov. 1977)	Review and Discuss Background Information, Identify Problems and Issues
Phase II - Review Policy and Develop Option Plans	Prepare Policy and Optional Land Use Plan (Spring 1981)	Review, Discuss and Refine Policy and Optional Land Use Plans
Phase III - Develop Final Draft Plan	Develop Preferred Land Use Plan (Spring 1982)	Review, Discuss, and Refine Preferred Land Use Plan
	Prepare Final Draft of West Patricia Land Use Plan (Fall 1982)	

Source: Ontario Ministry of Natural Resources, 1981, 4.

Clearly, the preparation of the Plan depended upon adequate data and detailed knowledge concerning present uses, capability and potential of the land and water resources in the planning area. The data which was collected and analyzed was published; comments were sought from the public and incorporated into the background information document. This information formed "the foundation against which the specific resource policies for the West Patricia Planning Area [would] be tested and optional land use plans [would] be developed (Phase II) and . . . the Land Use Plan [would] evolve (Phase III)." (Ontario Ministry of Natural Resources, 1981, 4). Because the background document was intended to inform the public and to generate discussion, public review of the published planning documents was viewed as a positive means to gain insightful input and to identify any errors or omissions in the information.[1] "Plans are for people, and public participation is necessary for the preparation of the West Patricia Land Use Plan" (Ontario Ministry of natural Resources, 1981, 4). Also, in order to avoid unnecessary conflicts in planning, the Ministry of Natural Resources considered the programs of other provincial government ministries or agencies.

The West Patricia Planning Area encompasses about 223,625 square kilometers in the relatively isolated northwest corner of Ontario.[2] One of the stimuli to the preparation of a land use plan for the area was a 1974 proposal by Reed Paper Limited to undetake an extensive feasibility study for the development of an integrated forest products complex in the Ear Falls/Red Lake area. In 1976, the Ontario

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1 The Ontario Ministry of Natural Resources (MNR) made available the complete, original planning formation to the public, and advertised details on the public participation program and availability of documents through local radio, television and press, as well as through local MNR offices.

2 The Planning Area is bounded by the Hudson Bay lowlands to the north and east, by the Ontario-Manitoba border on the west, and is approximately 50° north latitude to the south.

Ministry of Natural Resources and Reed Paper co-signed a Memorandum of Understanding which identified a number of mutual concerns which would bear upon the proposed forests products complex. The Ministry of Natural Resources, "as the agency responsible for the management, sale and disposition of public lands and forests in the Province" (Ontario Ministry of Natural Resources, 1981, 5), was to conduct a detailed forest inventory of the Reed tract (over 49,000 square kilometers) and any other investigations deemed necessary by the Crown. Also, the Royal Commission on the Northern Environment was established in 1977. Applying to that portion of Ontario north of 50° north latitude, the Commission's mandate was to "assess the environmental effects of major enterprises in the north; to recommend methods for their assessment; and to examine alternative uses for northern resources" (Ontario Ministry of Natural Resources, 1981, 5).

To ensure that all the concerns of the Ministry were clearly documented and articulated in an integrated fashion (that is, to permit the Ministry of Natural Resources to deal effectively with the area affected by the Reed proposal), the West Patricia Land Use Plan was to:

(a) provide assistance to, and receive direction from, the Royal Commission on the Northern Environment;

(b) provide a mechanism whereby the residents of the Planning Area will be able to have input through the Plan into the identification of future development proposals which could affect their lifestyle; and

(c) provide long range land use decisions for this large area of Northwestern Ontario.

The Background Information document, in addition to providing a brief introduction identifying the regional setting and historical background to the West Patricia Land Use Plan, also described the natural

setting and the history, population and development patterns of the area. The bulk of the report consisted of analyses of eight major resources accompanied by 20 Tables, 4 Figures and 27 Maps (most sized 20 x 20 inches). The Table of Contents of the Plan is reproduced below (Figure V - 2) for purposes of information as well as for comparison with the Newfoundland Crown Land Plans. In terms of organization, content, effort (and dollars) expended and ultimate utility, the West Patricia Land Use Plan is far superior to the Newfoundland attempts particularly when it is borne in mind that the document was produced as the first phase in the three-part planning process.

The forestry resource section of the document provided four full size maps and four data Tables in addition to the written analysis of capability, present use, potential, and problems and issues. The analysis revealed that:

> As part of its timber management mandate, the Ministry of Natural Resources is responsible for management planning, the regulation of the harvest, and subsequent regeneration of a new forest - on a sustained yield basis. This entails conducting inventories, issuing timber licenses, determining annual allowable cuts for the licensed areas and approving management plans (20 year, 5 and 10 year operating plans and annual plans) for harvesting timber. The Ministry monitors areas and volumes cut, collects area and Crown charges (i.e., stumpage fees) from the operators, and ensures that adequate regeneration takes place on harvested areas within the availability of funding and silviculture techniques. In the future, Forest Management Agreements may be signed with major timber companies placing the responsibility for regeneration, tending, marking, and road construction with the licensee.

Figure V-2

TABLE OF CONTENTS: WEST PATRICIA LAND USE PLAN; BACKGROUND INFORMATION, 1981

> Much of the presently inventoried area has been divided into Crown and Company forest management units .... These units may be licenced entirely to one company, [or] smaller working areas within a unit may be licenced to smaller operators. The smaller licences are generally located on Crown Management Units. A large area (49,300 km^2) immediately north of the presently licenced areas has been inventoried in response to an expansion proposal by Reed Paper Limited of Dryden. . . . . the Memorandum of Understanding in effect for the area essentially guarantees that the company will have first rights to timber harvesting in the Reed tract if the government decides to permit it upon completion of the West Patricia Land Use Plan and other studies.
>
> (Ontario Ministry of Natural Resources, 1981, 27)

The importance of inventory data to resource planning and decision making is clearly shown in this case, as is the fact that planning for increased timber production in the area is undertaken from strictly operational as well as management points of view. In discussion of problems and issues, the Plan document indicated that:

> Despite the apparent potential for increased timber extraction, a number of factors presently limit the utilization of the overall potential. The most significant of these is the relative inaccessibility of the wood which results in increased costs. To compound the problem, a significant amount of the present forest is mature and overmature and more susceptible to fire, wind, insect damage, and disease. In addition, withdrawals of land for provincial parks and other uses may reduce the amount of land available for future harvest. Two further limitations are market fluctuations associated with cyclical trends in demand and the level of forest fire protection available across the Planning Area.

> In view of these limitations, more intensive forest management appears to be the most effective method available for increasing wood supplies. An important part of this intensified management must be improved regeneration. Regeneration programs to date have not kept pace with cutting and will not in the future, without increased effort, funding, and technological developments.
>
> Forest management practices must be altered in some cases to avoid detracting from the significant value of forested areas for tourism, recreation, and general aesthetic appreciation. Creation of access to specific lakes, erosion leading to the situation [sic] of waterbodies, and destruction of wildlife habitat are all undesirable consequences which can be avoided if proper management procedures are followed.
>
> (Ontario Ministry of Natural Resources, 1981, 31).

This is clear evidence of the fact that integrated and comprehensive planning demands consideration of each resource in isolation as well as in terms of shortages or conflicts which may result from competition by potential users. Thus, for example, the Ministry of Natural Resources could indicate that:

> The public often view unique or unusual features of natural, cultural, recreational, or scientific value such as an archaeological site, a stand of virgin timber, an area of rare wildflowers, a waterfall, or a bald eagle nest, to mention but a few, as essential for the benefit of both present and future generations. The need to consider the protection of such features is recognized as fundamental in the preparation of any land use plan.
>
> (Ontario Ministry of Natural Resources, 1981, 57).

A significant feature of the Ministry of Natural Resources' approach to planning is the "attitude" that not only accepts but welcomes public comment and criticism:

> Public participation is an integral part of the Ministry of Natural Resources' land use planning process. The public is encouraged to review and to critically assess all planning documents in an effort to assist in the preparation of the West Patricia Land Use Plan. It is essential that all interested persons have the opportunity to be involved in the early stages of plan preparation to ensure a greater satisfaction with the final result.
>
> (Ontario Ministry of Natural Resources, 1981, 62).

Recognizing that varied uses are made of lands and that the potential for user conflicts and inefficiencies is high, the Ministry was not afraid to acknowledge that:

> Forest management, as presently practiced in Ontario, has recently been subject to close public scrutiny. Criticism has been directed at the Ministry of Natural Resources for having no long-term commitment to forest management in Ontario. Concerns have been voiced primarily over the inadequacy of current forest regeneration efforts. Perceived over-harvesting in some areas combined with poor regeneration success has led to the charge that the principle of sustained yield is not working and that other businesses and ways of life which rely on the forests are being jeopardized. On the other hand, the forest industry is concerned over the impact future park proposals may have in reducing the land base available for future timber production. While these concerns regarding forest management are by no means limited to the Planning Area, the large areas of presently unlicenced forest land within the Planning Area and the potential impact of harvesting them dictate that this problem, whether it is real or perceived, be addressed.
>
> (Ontario Ministry of Natural Resources, 1981, 62).

The next phase of the West Patricia Land Use Plan involved formulation of policies for specific Ministry of Natural Resources programs based upon the targets ("quantified ends with call dates") provided by the Strategic Land Use Plan. Once the targets were tested for their suitability, optional land use plans were to be prepared for public comment. These options were to illustrate various ways in which the resources of the Planning Area could be allocated to meet the Ministry's objectives; the preferred plan would be the one which most readily met the expectations of the public and was compatible with the physical capabilities of the land. Prior to being submitted for approval as the West Patricia Land Use Plan, the option would be refined with public assistance.

3.0 PUBLIC LAND MANAGEMENT IN ALBERTA: A POLICY FOR RESOURCE MANAGEMENT OF THE EASTERN SLOPES

3.1. Introduction

Alberta provincial Crown Lands, most of which are forested, cover approximately 63 per cent of the province. The Public Lands Act is the major piece of legislation governing disposition and use of public lands. The Alberta Energy and Natural Resources Department is responsible for administration and management of public lands, forests, wildlife, mineral and energy resources. The overall objective of the Department is "to manage Alberta's public lands and resources in a manner which ensures their efficient development and use for the greatest possible benefit of the Province and the public as a whole, while maintaining the quality of our environment and the productivity of our lands" (Alberta Energy and Natural Resources, 1981, 1).

3.2. Administration

Within the Department (Figure V - 3) the primary land managers and administrators are the Public Land Division, which manages public lands in the settled areas (White and Yellow areas) of the Province, and the Alberta Forest Service, which manages public lands in the Green area, (these forested lands, excluding Federal lands, cover about 51 per cent of the Province). The Resource Evaluation and Planning Division (REAP) develops and coordinates regional and integrated land use management plans for all public lands. REAP is responsible also to provide resource inventories and appraisal data.

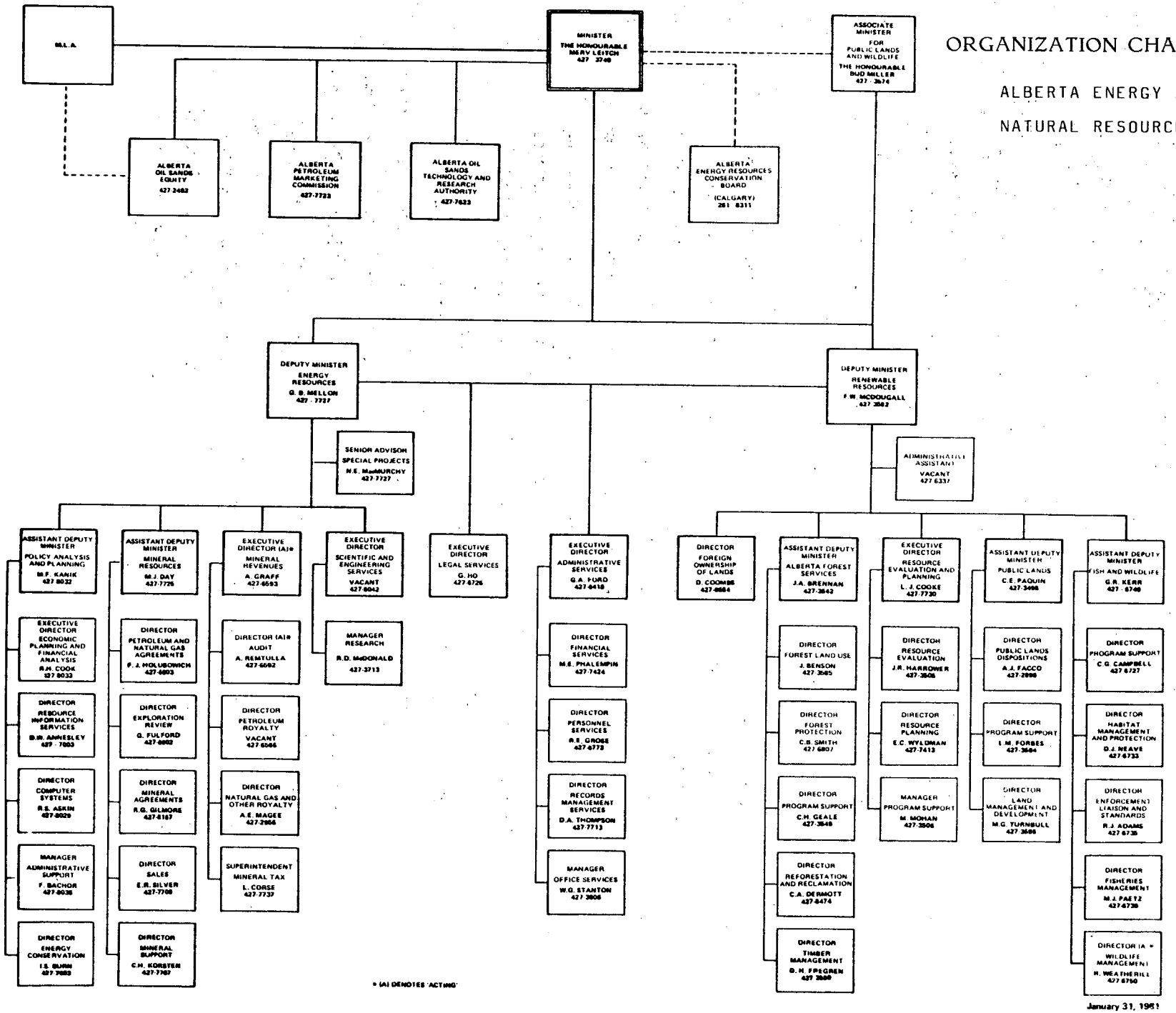
The Green, Yellow and White areas policy was applied to the Province in 1948. The policy was intended to prevent random settlement in isolated areas by "providing a means for the orderly allocation of public lands according to their best use, based on a physical land classification" (Gordon, 1981, 14).

> The classification for use of public lands in Alberta is carried out by the Resource Planning Branch of the Resource Evaluation and Planning Division, . . . through a hierarchy of planning processes ranging from integrated natural resource management plans covering an area of perhaps only several townships, to broad regional plans. Regional plans, such as the Eastern Slopes Resource Management Policy, . . . specify general land use designations which provide guidelines for making decisions on specific proposals. At the intermediate level, the Resource Planning Branch co-ordinates a major program of integrated resource planning studies comprised currently (1981) of 19 project areas. Small portions within these areas may be provided with very detailed management plans in response to demands to address specific problems. For example, the Spring Creek Area Integrated Resource Management Plan, covering two and one-half townships within the Sturgeon Lake-Puskwaskau area, was developed primarily to satisfy a need for agricultural land. As the plan points out, local farmers expressed the desire for additional land to extend their mixed farming operations.

Figure V-3

ORGANIZATION CHART:

ALBERTA ENERGY AND NATURAL RESOURCES



* (A) DENOTES 'ACTING'

January 31, 1981

> The planning process for all levels involves biophysical and interpretive assessments of the resource base of the subject area. The department's co-operative, interagency approach to developing management policies utilizes a planning team consisting of representatives from each agency with land or resource management responsibility in that area. Other agencies with indirect interests in Crown land management, such as regional planning commissions and Alberta Municipal Affairs, are consulted at various stages of the process. Implementation strategies in the form of operational and administrative programs are outlined in the plans and carried out by the participating agencies which have the management responsibilities. In the Spring Creek area example, certain lands may be offered for disposition for agriculture following detailed field inspection. Consequently, those lands may then be removed from the Green Area.
>
> (Gordon, 1981, 14, 15; emphasis added).

Provincial public lands in the Green area administered by the Forest Service are managed primarily "to ensure a perpetual yield of forest products and benefits while maintaining a forest environment of high quality. The multitude of resources in the Green area demands an integrated management approach that considers timber production, watershed protection, recreation, fish and wildlife habitat, domestic livestock grazing, fire protection and mineral development" (Alberta Energy and Natural Resources, 1981, 4). This integrated approach includes determination of "the best and most appropriate use of the land considering physical economic and environmental constraints . . . ." (Alberta Energy and Natural Resources, 1981, 3). The land use priorities are established by the Public Lands Division, the Forest Service, the Fish and Wildlife Division, and the Resource Evaluation and Planning Division -- "frequently in conjunction with other government agencies or departments to arrive at integrated uses wherever possible" (Alberta Energy and Natural Resources, 1981, 3). Once the land use priorities have been set and the land has been evaluated in detail, the various branches of the Public Lands Division carry out specific functions relative to management of the land in question.

3.3. The Eastern Slopes Planning Region

The Eastern Slopes area of the Rocky Mountains is a large (90,650 km^2), diverse area of forest -covered mountains and foothills, possessing a wealth of renewable and non-renewable resources. Demands for use of water, scenery, timber products, livestock and wildlife forage and mineral resources have increased "at a rapid rate over recent years, making more evident the fact that the resource base of the Eastern Slopes is not unlimited."

> Growing pressures for resources and land in the area have led to conflicts in land allocation and to a rising concern for the protection of environmental quality and the management of this extremely important watershed region.
>
> (Alberta Energy and Natural Resources, 1983, 1).

> These concerns highlighted the need for an integrated land use policy and a comprehensive plan for management and development.
>
> (Alberta Energy and Natural Resources, 1977, 2).

In 1970 the Alberta government conducted two planning studies in the Eastern Slopes in response to these needs. As a result, "a comprehensive planning process designed to identify optimum resource uses for land units based on an evaluation of resource capability, present land use, economics and demand" was initiated (Alberta Energy and Natural Resources, 1977, 2). In order to identify the views and concerns of the Alberta public, in 1973 the Environment Conservation Authority conducted hearings into land use and resource development in the Eastern Slopes. The results of a public opinion survey emphasized watershed and public recreation priorities as well as the need for an integrated resource policy and land use planning for the area. In 1975 an Eastern Slopes Interdepartmental Planning Committee was established to make recommendations on an integrated planning approach for this region of Alberta.

3.4. Resource Management Policy

On July 18, 1975 the Alberta government announced a statement of resource management policy for the Eastern Slopes. The following general priorities and guidelines were to apply:

- Decisions for development of the Eastern Slopes and management of its resources are based on a comprehensive, integrated planning system.
- The highest priority is placed on watershed management to ensure a reliable supply of clean water for aquatic habitat and downstream users.
- The recreational potential and aesthetic quality of the mountains and foothills will be maintained, while increasing the opportunities of Albertans for enjoyment of this unique region.
- Critical wildlife habitat will be protected to maintain those species presently found in the Eastern Slopes.
- Selected areas of natural significance that are unique or representative will be protected.
- The resources of the Eastern Slopes will be utilized and developed, consistent with principles of conservation and environmental protection.
- The management of renewable resources is the long term priority of resource management in the Eastern Slopes. Non-renewable resource development will be encouraged where it is not in conflict with the long term goal of renewable resource management.
- Service center development will generally be directed to defined nodes associated with transportation corridors.
- Crown lands in the Eastern Slopes will be retained in public ownership for the use of all Albertans. In registered subdivisions, the sale of small parcels of public land may be considered.

(Alberta Energy and Natural Resources, 1977, 4).

The Alberta government has determined that a regional land use zoning system will be employed to translate integrated land use and resource management policies into a planning or decision making format. The zoning system "identifies broad units of land for which policies and integrated management objectives are specified, including an indication of the types of uses which can be permitted" (Alberta Energy and Natural Resources, 1977, 3). The zoning system provides for the resolution of land use conflicts but its major purpose is to allocate resources on a regional scale.

> The land use priorities identified by the zoning are based on a combined evaluation of the physical environment, the existing resources, present land use, demand and public interest.
>
> The zoning allows for the appropriate utilization of the diverse resource base of the Eastern Slopes. It directs integrated land management efforts toward maximizing the benefits derived from the region while minimizing the resource conflicts and costs incurred.
>
> Regional zoning provides the background for detailed resource management planning. It does not allocate land to specific projects within a zone. It provides flexibility for making decisions on specific project proposals within a zone in accord with the range of permitted uses. The system recognizes that there are existing commitments and ongoing land use and resource development activities within most of the zones.
>
> . . . . The zoning . . . [is] to give positive direction for future management and to identify permitted and restricted uses within the zones, based on what the land is best suited for. Where incompatible activities exist, whether on Crown or private lands, the zoning implies that the operations should continue until either resource extraction is completed or the non-conforming uses may be phased out in the future.
>
> (Alberta Energy and Natural Resources, 1977, 3, 4; emphasis added)

The regional zoning system consists of three broad land use zones which designate large areas of land for varying degrees of protection, multiple use management, or resource development. There are eight detailed land use zones which outline a range of permitted activities that are in keeping with the established priorities and management objectives of the zone. These primary and more detailed land use zones are as follows:

BROAD AREAS	LAND USE ZONES	INTENTS
Protection	1. prime protection 2. critical wildlife	To provide the highest level of protection for those areas which are known to form the unique character of the Eastern Slopes.
Resource Management	3. special use 4. general recreation 5. multiple use 6. agriculture	To foster wise mixed use of the natural resources to achieve specific goals and objectives.
Development	7. industrial 8. facility	To recognize existing and provide for future site-specific development.

(Alberta Energy and Natural Resources, 1977, 5; and 1983, 3).

The activities permitted in each of these zones are summarized in Figure V-4. In order to better appreciate the reasoning behind the (non)permitted activities, it must be noted that management of the public lands in the region has been directed towards a high level of watershed protection in order to maintain natural streamflow and water quality. Since the early 1900s when the Eastern Slopes area

Figure V - 4

TABLE OF PERMITTED ACTIVITIES BY LAND USE ZONES IN ALBERTA

ZONE / ACTIVITY	1 PRIME PROTECTION	2 CRITICAL WILDLIFE	3 SPECIAL USE	4 GENERAL RECREATION	5 MULTIPLE USE	6 AGRICULTURE	7 INDUSTRIAL	8 FACILITY
Non-Mechanical Recreation	/	/	R	/	/	/	R	/
Fishing	/	/	R	/	/	/	R	/
Hunting	/	/	R	R	/	/	R	X
Trails (Non-motorized)	R	R	R	/	/	/	R	/
Off Highway Vehicle Activity	X	R	R	R	/	/	/	/
Primitive Camping	R	R	R	/	/	/	X	X
Serviced Camping	X	X	R	/	/	R	X	/
Intensive Recreation	R	X	R	/	/	X	X	/
Scientific Study	/	R	R	R	/	/	/	/
Trapping	/	R	R	R	/	/	X	X
Logging	X	R	R	R	/	/	/	X
Cultivation	X	X	R	X	R	/	X	R
Domestic Grazing	X	R	R	X	/	/	X	R
Petroleum & Natural Gas Exploration and Development	X	R	R	X	/	/	/	R
Mineral Exploration and Development	X	X	R	X	/	/	/	X
Coal Exploration and Development	X	R	R	R	/	/	/	X
Transportation and Utility Corridors	R	R	R	R	/	/	/	/
Commercial Development	X	X	R	R	R	R	X	/
Industrial Development	X	X	R	X	/	R	/	R
Residential	X	X	R	X	R	/	R	/

Source: Alberta Energy and Natural Resources, A Policy for Resource Management for the Eastern Slopes, Revised, 1983, 1983, 15.

/ Permitted Uses - Uses that will be allowed under normal guidelines and land use regulations.

X Not Permitted - Uses that are not compatible with the intent or capabilities of a land use zone.

R Restricted - Uses that mayb e compatible under certain circumstances and stricter than normal controls.

These activities are only representative of the range of activities that occur in the Eastern Slopes. For these and any other activities, the possibility of whether they should or should not take place in a particular area must be measured against the fundamental management intentions for that zone.

was recognized as being the critical headwaters region for the Prairie Provinces, environmental and land use regulations and controls have governed use and development of natural resources of the region. Management emphasis has been upon maintenance of streamflow and water quality with the main objective being to ensure a clean water supply for aquatic habitat and downstream user purposes. To prevent streamflow from undue alterations and to maintain the "self-perpetuating recreational fishery" of the Eastern Slopes, land use practices are controlled carefully. Because watershed protection was and is a major pervasive concern throughout the region, it was not possible to emphasize watershed protection through establishment of a separate zone. Rather, "the classification of portions of watersheds as to priorities or management needs is viewed as an integrated management planning function" (Alberta Energy and Natural Resources, 1977, 4).

The way in which this concern is manifested through the zoning system is perhaps best described by quoting at length from the Policy document; two different land use zone descriptions follow (Alberta Energy and Natural Resources, 1977, 5-6, 9, 10; emphasis added):

Zone 1. Prime Protection Zone

> This zone consists primarily of the high-elevation forests and steep, rocky slopes of the major mountain ranges in the Eastern Slopes. It protects the rugged mountain scenery for which the region is highly valued and is the zone which receives maximum amounts of precipitation and produces most of the streamflow of the Eastern Slopes. The lower boundary of the zone generally corresponds to the 6,500 foot contour line south of the Bow River, to the 6,000 foot contour line from the Brazeau River to the Bow River and to the 5,500 foot elevation further north.

The intent of the Prime Protection Zone is to preserve the environmentally sensitive terrain and the valuable aesthetic resource. As in all zones, watershed protection will be a paramount concern, along with the preservation of rare or fragile biologic communities and representative areas of natural landscape. Many critical wildlife ranges, especially for bighorn sheep and mountain goat, are above the designated elevations and are included in the Prime Protection Zone.

Land use will be strongly oriented toward dispersed "back-country" recreation activities such as hiking, fishing, hunting and other non-mechanized forms of recreation. Scientific study and research projects not requiring land dispositions will be allowed under normal conditions of environmental protection. No serviced camping facilities will be permitted, and primitive camping will be on a restricted basis, due to the needs for careful control of use levels at specific sites. Trail systems for hiking and horse travel will also require stringent controls in certain areas. Commercial development and transportation and utility systems will normally be precluded; however certain exceptions may have to be recognized.

Future commercial ski developments will be considered in this zone, since it contains the only possible suitable snow and terrain conditions in the Eastern Slopes. In these cases, the ski lifts and associated facilities will be permitted in the Prime Protection Zone while accommodation, stores and other ancillary facilities will be located in adjacent zones where commercial development will be permitted. Also, future major roads or utility corridors may, of necessity, require access through the zone. Restricted activities will require particularly stringent environmental conditions and resource management controls.

Land use activities that will not be permitted include mineral exploration and development, petroleum and natural gas exploration and development, commercial timber operations, domestic grazing, cultivation, industrial development, residential development and off-highway vehicle activities.

Where considered essential, management programs may include fire control, wildlife habitat improvement and sanitation cutting. Wildlife habitat improvement will generally be by means of controlled burning or fertilization programs rather than aesthetically unattractive mechanical means. Fire control and sanitation cutting will be permitted where there is a proven hazard to merchantable timber outside of the zone.

Where lands in the zone are presently being utilized for resource development activities, the uses will be continued until the extraction is complete, after which the lands will be reclaimed and allowed to return to a near-natural state. All other conflicting uses will be phased out by the responsible management agency as soon as possible after the zone is established.

Zone 5: Multiple Use Zone

The Multiple Use Zone contains the broad areas of forested foothills which comprise a major portion of the Eastern Slopes. The zone contains a variety of natural resources: water, timber, oil and gas, coal, scenic areas and forage. Much of the area is accessible to public and industrial use, and the zone is experiencing growing pressures for public land dispositions and resource development. The zone comprises approximately 65 percent of the Eastern Slopes, exclusive of the National Parks.

The primary goal of this zone is to allow the utilization of the full range of available resources within a multiple use context without adversely affecting watershed or environmental conditions in the long term. The allocation of permitted uses to specific land areas will be based upon land capability and the integrated management planning process within the framework of existing regulations and control procedures. Relatively small areas of land in the zone will be disturbed by resource development at any one time.

The Multiple Use Zone produces an important portion of the water supply from the Eastern Slopes, and the area is drained by a dense network of streamcourses. These important watersheds are mainly covered by coniferous forests of varying age classes which have development potential for commercial sawlog, wood fiber or roundwood operations. Properly designed harvesting practices provide the means of managing forested watersheds for the manipulation of water yields and flow regime. Many areas may be utilized for sustained yield forestry while at the same time ensuring watershed protection.

Those portions of the zone which are suitable for unimproved grazing, and in which this activity will not conflict with other land uses, will continue to be utilized for summer grazing by domestic livestock. It is expected that no changes in presently approved stocking levels will be necessitated by the zoning. Grazing is particularly important in the southern foothills area which provides summer range for the majority of the 25,000 head of cattle accommodated annually within the Eastern Slopes. Proper range management practices will ensure the desired levels of sustained forage production and standards of watershed and stream channel condition. Conflicts with wildlife populations will have to be minimized. Certain lands in the eastern portions of the Multiple Use Zone having suitable climatological and soil capability characteristics may be considered for cultivation agriculture.

The Multiple Use Zone has been extensively explored and developed for petroleum and natural gas. The area contains a number of producing fields, and most of the zone has experienced exploration activities to some degree. Exploration in the zone is presently at a high level, and the Eastern Slopes region is judged to have considerable potential for natural gas in particular. Future energy needs will exert increased pressures for the recovery of the oil and gas reserves of this zone.

Mineral exploration and development, including coal, will be permitted in this zone consistent with existing policy, regulations and environmental protection standards.

Numerous recreation pursuits, including sight-seeing, pleasure-driving, outfitting, hiking, fishing, hunting, cross-country skiing and overnight camping will be permitted in this zone. Approximately 90 percent of the streams in the province which are capable of providing trout fisheries are located in the Eastern Slopes. Much of the angling in these streams will take place in the Multiple Use Zone. Land practices in this and the other zones will require careful controls in order to protect this recreational resource by means of maintaining water quality and stream conditon.

The identification of areas for off-highway vehicle use will be a priority consideration in this zone. Efforts will be made to confine necessary transportation and utility corridors to the Multiple Use Zone whenever possible.

Residential development will be allowed on a very limited basis as required.

3.5. Review and Monitoring Procedures

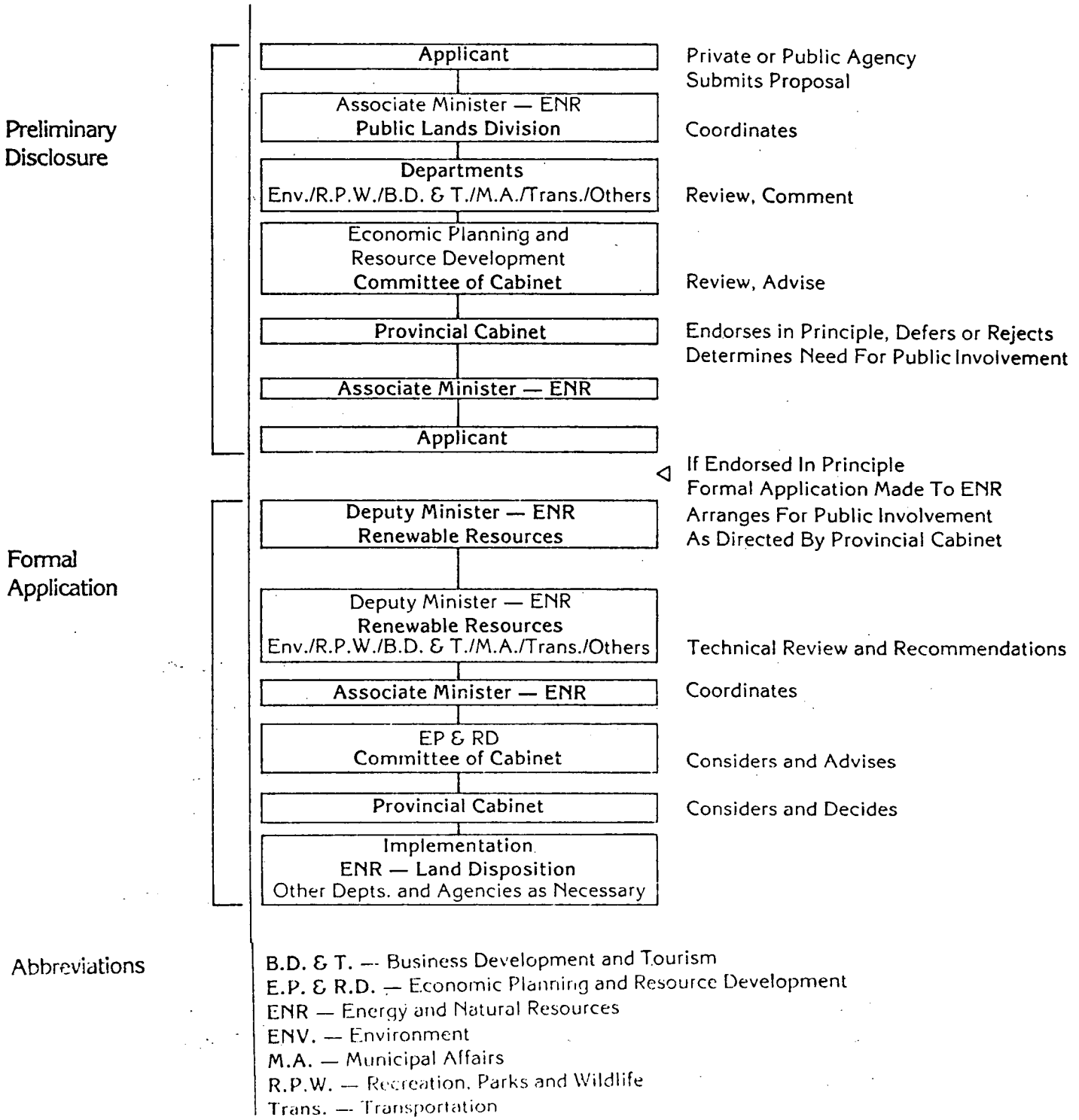
The Alberta government considers that "The key to effective management of the resources of the Eastern Slopes will be integrated management planning conducted under a comprehensive, interagency approach" (Alberta Energy and Natural Resources, 1977, 17). Further, the "key to the overall application of the system will be cooperative planning and administration by the existing departments and agencies" (Alberta Energy and Natural Resources, 1977, 4). When a major development proposal is forthcoming, the process of consideration is as outlined in Figure V-5. Other proposals for land use or resource development are reviewed by the Eastern Slopes Interdepartmental Committee. This is to be a permanent review and decision making process involving the various resource management and planning jurisdictions within the region. The process is to include examination of:

- review and approval of integrated management plans
- resource management guidelines
- revisions to regional zoning
- disposition policies and procedures
- information programs to inform the public of the resources and problems of the Eastern Slopes and the approach of the Government to management of the area.

Given that the regional land use zoning for the Eastern Slopes is based upon the best existing knowledge, the zoning (uses and boundaries) will be subject to continuous monitoring and review as more detailed evaluations are conducted. For example, the eight land use zones were developed specifically for the Eastern

Figure V - 5

PROCEDURE FOR CONSIDERATION OF MAJOR DEVELOPMENT PROPOSALS IN ALBERTA



Abbreviations

B.D. & T. — Business Development and Tourism
E.P. & R.D. — Economic Planning and Resource Development
ENR — Energy and Natural Resources
ENV. — Environment
M.A. — Municipal Affairs
R.P.W. — Recreation, Parks and Wildlife
Trans. — Transportation

Source: Alberta Energy and Natural Resources, A Policy for Resource Management of the Eastern Slopes, 1977, 19; and Alberta Energy and Natural Resources. A Policy for Resource Management of the Eastern Slopes, Revised, 1983. 1983, 15.

Slopes. These may be changed or modified when the more detailed integrated resource management plans are developed to cover specified areas of the Eastern Slopes. It is expected that the total system of zoning and interagency planning and administration will provide "a flexible, positive and orderly direction for the use and development of the valuable public resources of the Eastern Slopes" (Alberta Energy and Natural Resources, 1977, 18).

4.0 BRITISH COLUMBIA: ENVIRONMENTAL AND LAND USE PLANNING BY COMMITTEE

4.1. Introduction

One further experience with land use planning that is worth considering is the approach adopted by the British Columbia Environment and Land Use Committee (ELUC). In 1974, A. D. Crerar, the Director of ELUC, indicated that the "allocation of finite natural resources between expanding and frequently conflicting demands has become an increasingly important task" and that "the need for improving the ability to make decisions about the use and allocation of resources is imperative" (British Columbia Environment and Land Use Committee, 1975, 9).

Prior to 1974, British Columbia's approach to allocation decisions about resource development and land use was similar to Newfoundland's. Individual, specialized departments were responsible for protecting and promoting one aspect of resource development (a forest service for forestry, an agriculture department for agriculture, a parks service for recreation).

This specialization was felt to be necessary to permit full use of the accumulated information and expertise in each discipline and department. However, the British Columbia provincial government also realized that:

> Though specialization is essential for understanding the detailed mechanism of the resource base, we must appreciate that the resource base we are dealing with is a seamless web and that an action in one area of discipline will have repercussions in another. These conflicts have surfaced in disputes between forestry and recreationalists, dams and fisheries, agriculture and urban expansion . . . . So governments have been seeking methods of improving the quality of decision-making, to provide for ways in which the detailed knowledge of specialist departments could be combined with a total view of the whole resource base.
>
> (British Columbia Environment and Land Use Committee, 1975, 10).

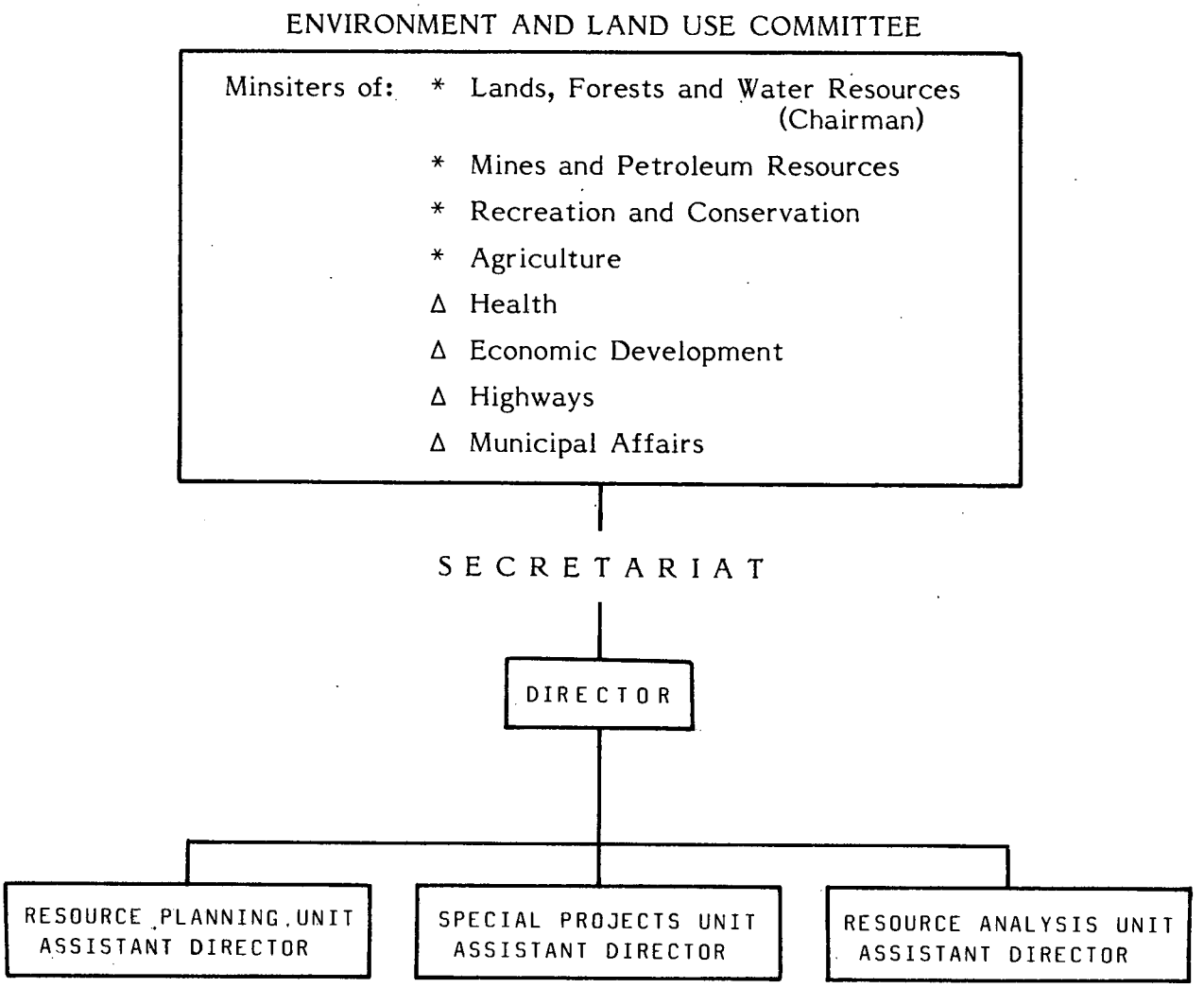
4.2. The Environment and Land Use Committee

A common solution to resource management problems among many provincial governments was to create a Department of the Environment which brought all functions of government relating to the resource base under a single Minister. British Columbia tried a different approach by maintaining the individual specialist departments and bringing together the Ministers responsible for the individual departments in a Committee of Cabinet known as the Environment and Land Use Committee (Figure V-6). One of the advantages of this approach was the ability to include the nonresource departments whose actions were affected by, or whose actions affected, the resource departments.

Initially, the Committee was assisted by a Secretary Co-ordinator who used a Technical Committee consisting of the Deputy Ministers

Figure V-6

STRUCTURE OF THE BRITISH COLUMBIA ENVIRONMENT AND LAND USE COMMITTEE



* = The resource departments

Δ = Departments whose activities affect the resource base

Source: British Columbia Environment and Land Use Committee, 1975, 4.

of the same departments to provide staff support for the Ministers' Committee. "This was a cumbersome device since the Deputy Ministers are busy men, fully engaged in the administration of their departments" (British Columbia Environment and Land Use Committee, 1975, 10). Newfoundland's ILUC appears to have encountered this problem also. As an alternative, the B. C. Ministers' Committee decided to establish a Secretariat which could act as a full-time continuing staff arm to the Committee.

Two divisions, Resource Planning and Special Projects, initially comprised the Secretariat. In January 1974, the third unit, the B.C. Land Inventory Unit was added. The first two units had the same aims and objectives: in becoming functional in January 1974 they were to examine problems and potentials in the resource development field; to identify alternatives, and to assess the direct and indirect consequences associated with each of the alternatives. The focus of each unit was different; the Resource Planning Unit focussed on areas and regions, while the Special Projects Unit focussed more on classes of resource use conflicts (such as power projects or development in estuaries).

Neither of the first two units, nor the Secretariat as a whole, operated as a "superplanning" organization. The planning operations of individual resource departments continued. Effectively operating bilateral arrangements between departments were continued also. It was only in cases where problems could not be handled simply or directly, where frustration levels were too high, where areas were too complex or where too many departmental interests were affected, that the Secretariat got involved. And then, it was only on instructions of the ELUC. In other words, ELUC participation took place only when the Ministers, collectively, identified that the problem, or necessary investigation of it, was beyond the scope or capability of a single department.

The operational method was to bring together a working group (task force) consisting of representatives of all the involved departments to see if a mutually agreed solution could be achieved. A member of the Secretariat would act as a neutral chairman/secretary/catalyst and look for the common thread(s) of interest that would serve to unite all members of the task force. From this would follow isolation of the conflict areas and (as clear as possible) a definition of the basis of the conflict. If this process was insufficient to identify acceptable solutions, and if major problems remained unsolved, the matter would revert to the ELUC. The position(s) of each "side" would be identified and alternative solutions offered for the final decision of the Ministerial Committee.

> The results of this process are not the production of comprehensive master plans to be unveiled with a flourish of trumpets. It is an incremental process that gradually reduces and resolves areas of conflict between resource departments, that develops a sounder approach to resource use and development and ensures that, sector by sector, the quality of decisions improves.
>
> (British Columbia Environment and Land Use Committee, 1975, 11).

The third unit of the Secretariat, the B. C. Land Inventory Unit (BCLI), had existed since 1964, being attached to the Department of Agriculture and conducting land inventories as part of the Canada Land Inventory program. Upon joining the Secretariat, the BCLI was designated as the Resource Analysis Unit. In contrast to the resource inventories conducted at the resource department level (which are related to standing stocks or to their use), the BCLI was an assessment of the capability of the land to support a particular use, whether it was in that use or not. This was considered essential background information for long-range resource

planning. The biophysical capability approach led to inventory data which could "become a more useful tool for land management by identifying the critical limitations associated with a particular area, providing a guide to the management practices that should be adopted in each area and in indicating how a number of uses might be accommodated in a single area, without harm to the base that supports them all, the land" (British Columbia Environment and Land Use Committee, 1975, 12).

The Resource Analysis Unit was able, in a number of instances, to indicate to the ELUC what the future use of a parcel or area of land should be. Clearly, if the land were Class 1 or 2 (the best) for forestry and Class 5, 6 or 7 (the worst) for all other uses, the decision would be a relatively simple one. However, in a situation when the capability was high for a number of uses (such as Class 1 for forestry, Class 2 for agriculture and Class 1 for wildlife), or when the capability was Class 4 or 5 for a number of uses, with no one use clearly dominant, the decision would be less clear cut. In such an instance the capability classes do not indicate which of the alternate uses is the most appropriate use or whether a combination of uses is the best possible alternative. In an attempt to provide more input for decisions, information on the net socio-economic returns possible from each alternative (or their combinations) was sought.

A brief look at the operation of the Resource Planning Unit reveals how such a group can be a significant force in coordination of planning efforts. The Unit performed the following functions:

- Co-ordinating, where assigned by the Environment and Land Use Committee, the preparation of integrated regional studies involving evaluation of resource potentials, social requirements and economic considerations. The general aim of this approach is to ensure balanced resource allocation and development that is environmentally sound, socially acceptable and economically feasible for a particular area or region.

- Conducting planning analysis and research on specifc resource-use and environmental problems identified by and for the Environment and Land Use Committee and formulation of action-oriented planning alternatives.

- Conducting interdepartmental reviews of resource conflict problems to develop and clarify options or avenues of integration.

- Conducting evaluations to assist the ELUC respond to expressions of public concern.

- Co-ordinating arrangements for ELUC public hearings.

- Co-operating in or initiating applied resource research and planning projects with other agencies.

> (British Columbia Environment and Land Use Committee, 1975, 15).

According to the ELUC Secretariat's Report, the work of the Resource Planning Unit had several distinguishing features:

> The emphasis of the unit is on co-ordinating the expertise of various departments in the analytical process. Frequently this involves identification and analysis of divergent views on resource use and allocation. Accordingly, studies must focus on evaluating and clarifying the implications of alternative courses of action, finding avenues of resolution and recommending optimum courses of action of ELUC consideration and decision. While much independent analysis and organization is required, the unit's strongest emphasis is on collaborative study - typically on a task-oriented basis. The strength of this approach and quality of the work derives from the strong contributions of other Provincial agencies and the synergy that this approach produces.
>
> (British Columbia Environment and Land Use Committee, 1975, 16).

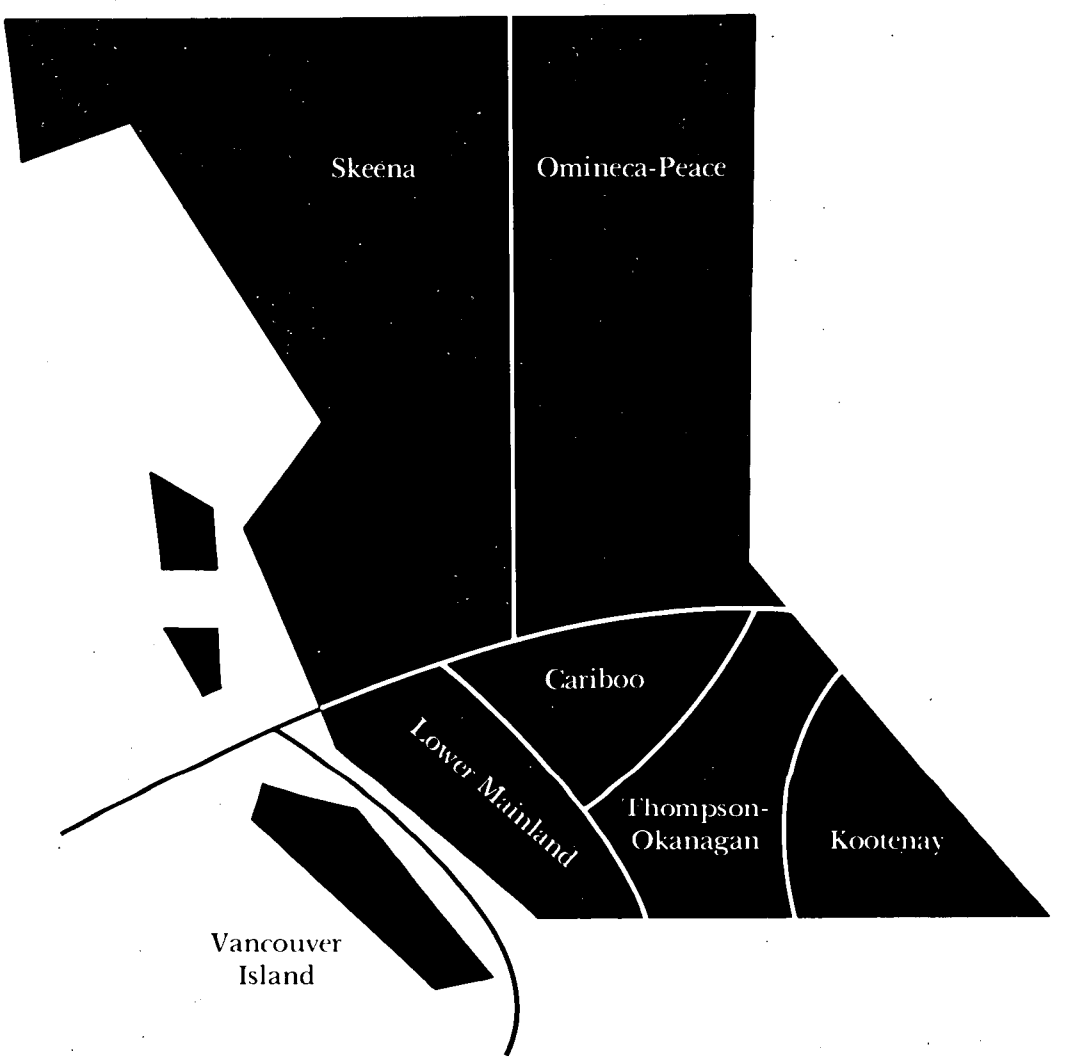
During 1974, a major emphasis of the Resource Planning Unit was the development of an appropriate administrative framework for integrated resource planning. "A key feature of this work was the collaborative development by interagency committees of common boundaries for the major resource regions of British Columbia." Seven regions were identified and are shown in highly simplified form in Figure V-7. The importance of establishing such boundaries was stated clearly:

> The basis of integrated resource planning is the bringing together of all departments and agencies who have knowledge, skills and responsibilities for natural resources in an area. In the past each agency has had its own administrative boundaries and centres from which they managed their resource. With the best will in the world, it has often proved impossible to readily assemble those persons responsible for managing all resources in an area, as they may be stationed hundreds of miles apart. Common boundaries, coupled with administration from common centres, will not guarantee integrated planning and management. It does, however, remove a major physical and psychological barrier to the process.
>
> (British Columbia Environment and Land Use Committee, 1975, 16).

Considerable emphasis was placed also on developing means to obtain public input. One method chosen was a series of community meetings to, for example, involve local snowmobilers and winter recreationalists in the process of selecting appropriate snowmobiling areas. The community meetings were not meant to be a vehicle for "delivering instant answers". Rather, they were intended to provide the forum for discussion of issues and concerns and to start the determination of whether answers were available. These meetings were not without their difficulties: "Such meetings often generate high expectations for solutions to intractable problems or ones with no immediate answer. Many of the answers in resource planning require a study process. There are no instant cures

Figure V - 7

BRITISH COLUMBIA RESOURCE MANAGEMENT REGIONS



Source: British Columbia Environment and Land Use Committee, Report of the Secretariat; year ended December 31, 1974, 1975, 17.

to problems of market instability, sex-ratio imbalance, community futures, social problems and other issues. However, community dialogues permit their identification and represent . . . a useful part of the program" (British Columbia Environment and Land Use Committee, 1975, 19).

In November 1979, the B. C. government underwent an administrative reorganization which resulted in ELUC consisting of the Ministers of: Environment (Chairman); Agriculture, Energy, Mines and Petroleum Resources; Forests; Health; Industry and Small Business Development; Tourism; Lands, Parks and Housing; Municipal Affairs and Transportation and Highways. Under the reorganization, which was ongoing to 1982, the Environment and Land Use Act established ELUC and empowered it to:

- establish and recommend programs designed to foster increased public concern and awareness of the environment,
- ensure that all aspects of preservation and maintenance of the natural environment are fully considered in the administration of land use and resource development,
- study any matter pertaining to the environment or land use.

(British Columbia Ministry of Environment, 1980, 68).

The ELUC maintained its major role in determining policy on broad questions of land and resource use and environmental management, especially where the goals of individual mininstries might, by themselves, lead in conflicting directions. "The coordinating function of ELUC allows in these cases for joint determination of a comprehensive and integrated policy" (British Columbia Ministry of Environment, 1980, 68). The mandate of ELUC results in it playing several roles, including:

- directing that policy and project studies necessary for addressing land use, resource development and environmental issues are done
- making policy decisions on such issues; advising Cabinet on these issues and obtaining Cabinet concurrence or direction
- recommending to Cabinet Orders-in-Council under the Environment and Land Use Act
- establishing programs and procedures for land use and environmental management
- making decisions respecting specific projects pursuant to these procedures
- reviewing legislative or program proposals and making recommendations to Cabinet
- advising the public on decisions of Government respecting various environmental, resource and land use matters.

(British Columbia Ministry of Environment, 1980, 68).

To arrive at its decisions and recommendations to Cabinet, the ELUC requires comprehensive information and advice. To secure such, the ELUC Secretariat coordinates studies and planning procedures in association with the headquarters and regional staffs of the participating ministries, and through the ELUC Technical Committee (comprised of Deputy Ministers). "With Secretariat coordination, the interagency task teams work to clarify the problems in specific terms, document proposals, array and evaluate alternatives and outline recommendations to ELUC for decision." (British Columbia Ministry of Environment, 1980, 69).

One other area of work of the ELUC Secretariat was the "development of procedures for problem analysis and project assessment, as a means of clarifying and facilitating the decision-making process for concerned participants and the public." For example, work included the "development

of Guidelines for Mitigation and Compensation for review by the ELUCTC. When complete these Guidelines . . . will outline systematically principles and procedures for evaluating mitigation and compensation measures designed to reduce or offset adverse environmental and social impacts associated with major project developments" (British Columbia Ministry of Environment, 1980, 71).

By 1981, the ELUC Secretariat had been dissolved. However, certain of its functions became the responsibility of the Assessment and Planning Division of the Ministry of Environment.[1] The new Assessment and Planning Division was created in April 1980 "to ensure that proper planning is an integral part of our management strategy" (British Columbia Ministry of Environment, 1982, 21). Specifically, the Division became responsible for coordinating projects under the ELUC Development Guidelines, particularly for linear developments.

4.3. Strategic Planning in British Columbia[2]

For some time British Columbia has faced particularly significant problems concerning water and related resource management issues. Issues have seen conflicts between consumption of water for irrigation and maintenance of stream flows for the Pacific Salmonid fisheries,

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1 The organizational structure of the Ministry of Environment itself changed during 1980 to permit realignment of programs and responsibilities.

2 This section is a summary of J. O'Riordan, "New Strategies for Water Resource Planning in British Columbia", Canadian Water Resources Journal, Vol. 6, No. 4, 1981, 13 - 43.

conflicts between community water supply systems and increased sedimentation resulting from forestry activities, lake eutrophication resulting from sewage disposal and cattle operations, and other water quality problems arising from toxic chemical and heavy metal deposition and pulpmill effluent discharges. Add to these issues the serious flooding problems for communities on the floodplains of many of the major and minor rivers and the conflicts between those wishing to expand and those wishing to limit hydroelectric development, and it is clear that planning was and is essential.

Provincial planning studies in the 1970s tended to be characterized by reactive responses to specific cases or immediate issues. In part this resulted from the lack of foresight, in part the lack of appropriate data, and in part the legislative context, i.e. the Provincial Water Act, which tended to emphasize water allocation and regulation rather than long-term management. Joint Federal/Provincial studies[1] have on the other hand tended to be more comprehensive, regional in scope and broader in perspective. However, these efforts have tended to be administratively cumbersome, involving as they do two governments, have taken a long time to complete, have yielded low returns relative to cost, and have seen few of their recommendations implemented.

What was seen to be necessary was a new approach to planning in which the comprehensiveness of the Federal/Provincial approach was undertaken within a more flexible administrative structure. In the early 1980s the Provincial Ministry of Environment thus began a process termed strategic planning which attempted to meet these criteria. This process was characterized by:

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1 For example, the 1973 Okanagan Basin Study and the 1978 Fraser Estuary Study.

1. Regional planning, in this context usually a major watershed or group of smaller watersheds, to achieve a broad geographical perspective.

2. Integrated planning, thereby including all water and related resource issues and other resources such as wildlife and air quality which fall within the Ministry's mandate.

3. Current data usage, whereby reliance on available data rather than collection of new data speeds turn-around time. (Where significant data gaps are seen to exist this can be dealt with under the specific management plan that follows the initial strategic plan).

4. Explicit policy framework, developed to allocate and manage water and related resources and to specifically consider the institutional arrangements, including budget and manpower, required to implement these policies.

The ability to implement this strategic planning approach is in part dependent on a legislative framework that allows it. The B.C. Ministry of Environment is responsible for the management of water resources, water and air quality, fisheries, wildlife, marine resources, and protection against environmental hazards, a broad mandate specified under the Ministry of Environment Act (1980). With increasing demands on resources and a higher concern with protecting the quality of the environment, this Act was supplemented by the Environmental Management Act (1981) that charged the Ministry with the responsibility to prepare long-term environmental management plans for the Province.

Administratively, these legislative and policy changes have been followed by the decentralization of Ministry activities into eight regional offices. This step is intended to help integrate Ministry regulatory activities which were, or appeared to be, in conflict and to provide the structure to implement the management plans that emerge from the strategic plans.

Conceptually, strategic planning is the process of identifying management priorities for all environmental resources under the Ministry's mandate in order to meet a number of specified planning objectives on a sub-regional scale.

The specific objectives of strategic planning in this context were:

1. To determine present and projected demands for all environmental resources under the Ministry's mandate.
2. To assess the capability of environmental systems to meet these demands at the present and potential level of management.
3. To evaluate management options for balancing the demand for and the supplies of environment resources in terms of social, economic and ecological criteria.
4. To establish management targets (i.e. levels of productivity) for all environmental resources based on the above evaluation that will ensure that satisfactory levels of environmental quality are maintained.
5. To develop a set of management programmes (monitoring, inventory enhancement, protection) designed to implement the key elements of the plan.
6. To monitor performance and reiterate the planning process at appropriate levels.

Strategic planning is intended to provide the basis for planning action within the Ministry of Environment throughout the early 1980s. Plans are to be prepared for some 40 planning units consisting of river basins, parts of larger basins, or combinations of smaller watersheds.

The outputs of these plans eventually will be integrated upward to form the basis of Regional and then Provincial policy statements (Figure V-8). However, at the outset strategic plans have to be given input from the Executive level in the Ministry with respect to each major program element (fisheries, wildlife, water management, etc.) such that initially "top-down" direction will provide the basis for the first stage of planning.

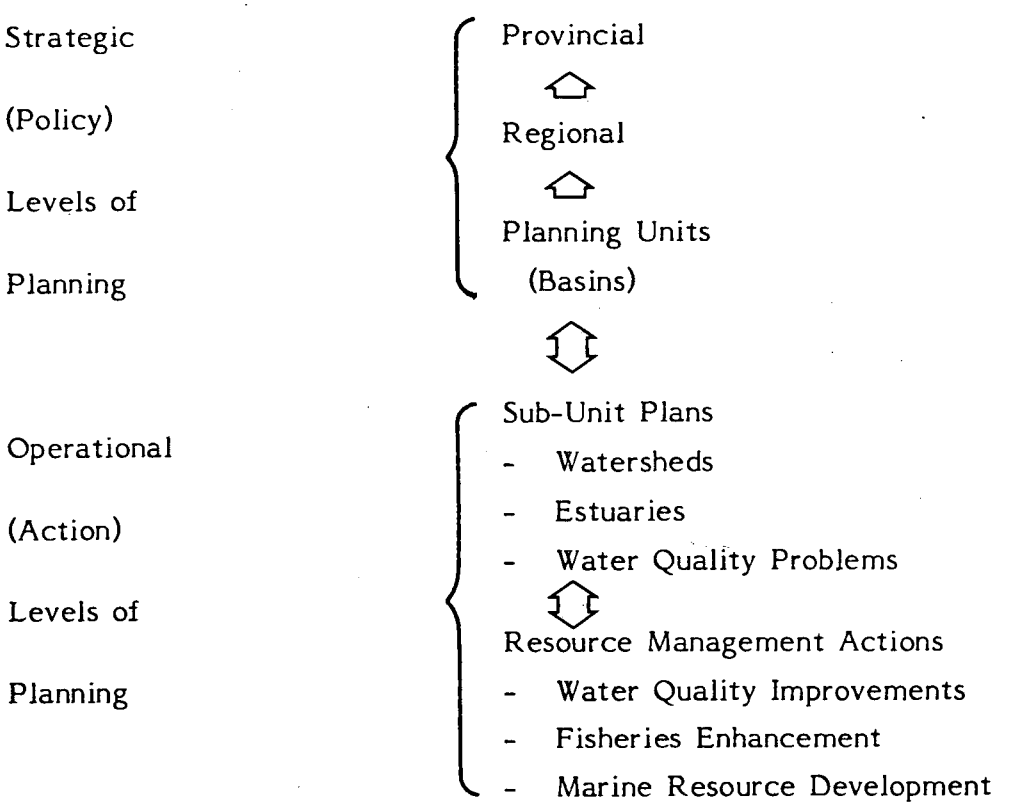
Once the strategic plans are determined, specific environmental management components identified would be implemented at the operational level. These might include, for example, construction of specific physical infrastructure elements for water control, habitat improvements for fish or wildlife, information generating programs or monitoring exercises. These operational activities would not be developed for the whole river basin but rather would apply to those specific areas where there are immediate problems or management opportunities that were identified in the strategic plan.

In summary, the planning process follows the hierarchical arrangment illustrated in Figure V-9. Management options are developed for Regional Units (I - IV) which reflect long term policy and resource allocation choices. Strategic Plans are developed for planning units (river basins) 1 - 5, that identify specific management objectives and priorities covering a medium - long term planning horizon (e.g. 20 years). Where specific operational activities are identified as appropriate under the strategic plan, these would be implemented at the sub-unit level(i).

The approach, though it may be conceptually straightforward, is not without significant potential problems. First, it presupposes

Figure V - 8

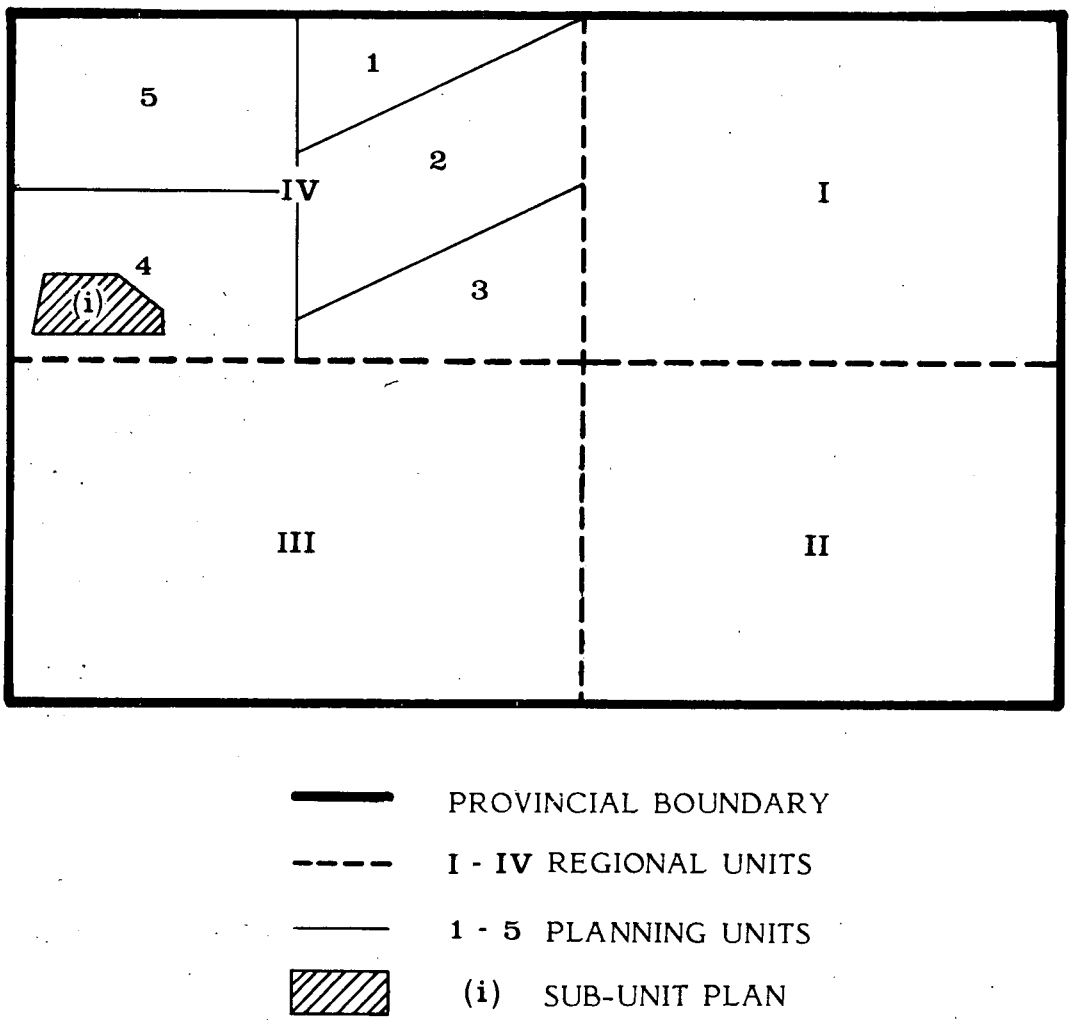
BRITISH COLUMBIA STRATEGIC PLANNING HIERARCHY



Source: after J. O'Riordan, "New Strategies for Water Resources Planning in British Columbia", Canadian Water Resources Journal, Vol. 6., No. 4, 1981, 21.

Figure V - 9

SCHEMATIC DIAGRAM OF THE BRITISH COLUMBIA STRATEGIC PLANNING HIERARCHY



Source: Based upon J. O'Riordan, "New Strategies for Water Resources Planning in British Columbia", Canadian Water Resources Journal, Vol. 6., No. 4, 1981, 13 - 43.

that each program area under the Ministry's mandate can articulate clearly and meaningfully their goals and objectives. Perhaps even more significantly it requires that the strategic plans be integrated with, or conceptually expanded to include, those of other Provincial and Federal Agencies such as Forestry, Lands, Municipal Affairs, and Fisheries. If this is not done then a comprehensive approach by a single (water resources) sector will have little meaning in a multi-sector context characterized by independent and ad hoc actions.

Comprehensive planning requires not only a change of attitude and outlook that recognizes the need to think beyond the concerns of the single sector but also requires that those concerned are willing to move into a new learning environment. While there may be much data on file concerning most environmental resources, much of it may be inappropriate to answering a series of new questions posed by the approach. In particular, there may be a lack of information appropriate to the analysis of functional relationships across sector boundaries. The successful management of these and other "uncertainties" will be important in determining the overall success of the strategic planning approach.

A further requirement for success is action. "Nothing is more inefficient than an expensively produced plan that sits on the shelf" (O'Riordan, 1981, 43). In British Columbia the strategic planning approach has been built directly into the Ministry of Environment's budgetary process. Where specific management programs are defined by each plan they are to be costed and inserted into the following year's budget estimates. Action is also important in the sense that the faster plans are produced the sooner an explicit policy framework and organized information system can be determined, thereby increasing efficiency at the staff level. With a policy

framework in place, for example, there can be a shift from a reactive to a proactive management approach. Much of the time and effort spent in reviewing licence and permit applications and conflicts between various agencies can be eliminated if a planning framework exists under which specific area/activity criteria are determined and from which activity trade-offs are negotiated.

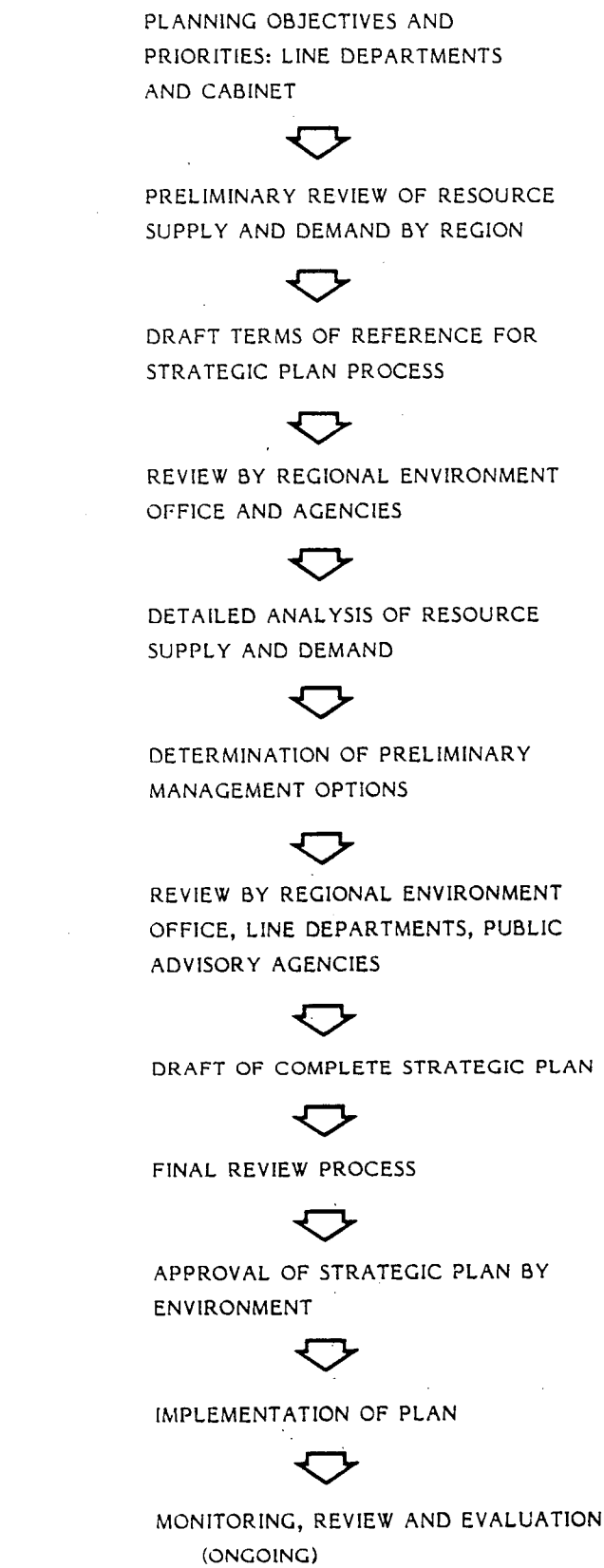
Implicit in all of the foregoing is the need for an extensive consultation process. Strategic planning is designed to integrate all Ministry of Environment programs and presumably, in the future, all other sector programs. The preparation of such plans must therefore involve consultation both with and outside the Ministry including consultation with the public. Schematically the overall process, including consultation, is illustrated in Figure V-10.

5.0 SUMMARY

This selective examination of land use planning approaches and practices in other Canadian Provinces has revealed significantly different organizational practices but fundamentally similar underlying planning philosophies. In both of these respects, however, there are significant differences compared to the Newfoundland practice. At the heart of the three provincial approaches reviewed is the acceptance that land use and resource management must be approached in an integrated fashion. Given this perspective individual approaches then emphasize allocation and management on a "best use" basis which requires an adequate data base, land classification and evaluation systems, public input and a priority system for ranking options. In other words, land use and integrated resource management are dependent upon an awareness of land use feasibility, the

Figure V - 10

SCHEMATIC DIAGRAM OF THE STRATEGIC PLANNING PROCESS



sensitivity or criticality of the land in question for the particular use(s) specified, and the flexibility inherent in planning from a multiple use/integrated perspective. The Newfoundland Crown Land "plans", the only comparable documents to date, exhibit very few signs of these positive planning attributes.

Newfoundland cannot, of course, expect to "leap forward" overnight to the same point that Ontario, Alberta and British Columbia have reached in their planning processes. Integrated land and resource planning, while desirable is extremely dificult to put into practice. Inadequacies of current data bases, poorly defined sectoral policies and inappropriate legislation are among some of the elements that will have to be addressed together with the mobilization of more human and financial resources before the Newfoundland equivalent of, for example, a West Patricia or Eastern Slope Plan can be realized.

VI - STRATEGY: FUTURE DEVELOPMENT OF COMPREHENSIVE, INTEGRATED RESOURCE AND LAND USE PLANNING IN NEWFOUNDLAND

1.0 INTRODUCTION

Development of a comprehensive resource and land use planning framework in Newfoundland requires some significant alterations from the present administrative structure and departmental practices. The type of major change suggested to improve management systems and operating policy for the Province's natural resources would be to create a NATURAL RESOURCES PLANNING DIRECTORATE. Creation of such a Directorate is suggested on the basis of the effectiveness and efficiency of similar, high-political-level resource and land use agencies operative elsewhere in Canada.[1] Considerable political will and commitment to the concept of and the philosophy underlying the creation and operation of a Natural Resources Planning Directorate would be required for successful attainment of its objectives. However, without the institution of a planning and policy making body like this, the Province will be unable to respond adequately to the increasing demands for and pressures on resources in general and forest lands in particular.

2.0 FOUNDATIONS

Before detailing the nature and functions of the proposed Natural Resources Planning Directorate, it is necessary to reemphasize some of the foundations upon which such a body must be built and that it

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1 Clearly a Newfoundland Natural Resources Planning Directorate would be established within the context of, and designed to function in, the socio-political situation of this Province.

must promote.[1] This Province desperately needs integrated resource management, that is, a coordinated, comprehensive approach to forest land and other resource sector management. The intent of integrated resource management is, in part, to ensure that public sector policy and decisions on resource management are related and complementary. As well, integrated resource management endeavours to optimize use of the Province's resource base to achieve maximum benefits for the public now and in the future.

Integrated resource management implies also that the principles of orderly development, balance, and future flexibility are inherent in operating policy. In terms of the forest land resource, for example,

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1 The following discussion employs ideas from the publications noted below:

British Columbia

(a) Ministry of Forests, Ministry of Forests Statement on Integrated Resource Use, Feb. 2, 1983. (Mimeo, 3 pp.)

(b) Ministry of Lands, Parks and Housing, An Outline of Land and Resource Planning in B.C., May 28, 1982. (Mimeo, 14 pp.)

Alberta

(a) S. Calp, Integrated Resource Management and the AFS Integrated Planning Program, October 1983. (Mimeo, 17 pp.)

Ontario

(a) Ministry of Natural Resources, Guidelines for Land Use Planning, 1980, (30 pp.)

(b) Ministry of Natural Resources, Background Information and Approach to Policy: Northwestern Ontario, Sept. 1974 (130 pp.)

(c) Ministry of Natural Resources, Proposed Policy, Northwestern Ontario: MNR Strategic Land Use Plan, Phase II, Sept. 1977 (72 pp.)

(d) Ministry of Natural Resources, Northwestern Ontario Strategic Land Use Plan, May 1982. (71 pp.)

"orderly development" implies that any development should take place within the framework of a plan. Without a general goal or policy of orderly development, preparation of a land use plan would be futile. Similarly, "balance" suggests that different kinds of resource development should occur in harmony and balance with one another. If, for example, some small adjacent communities were to experience significant expansion of the forest industry, possible development of a housing project to meet the needs of the additional population brought on by the expansion must be balanced with the creation of additional recreational opportunities for that population. It might also help to balance maintenance of environmental quality with the damage caused by the timber operations. "Future flexibility" indicates that it is not desirable to commit to their full potential development all of our resources right now. A certain amount of our resources may well be left undeveloped not only so that future generations may have some input to resource allocation, but also so that a "cushion" or "contingency" resource surplus exists against future disasters (such as forest fires or windthrow) or errors in projections of future needs. It is not wise to commit all our resources for immediate and irreversible development; where a choice exists between types of developments, it may well be best to opt for those offering greatest future flexibility.

The concepts of multiple use, sequential use and single use also enter integrated resource management. Generally, today, multiple use is adopted as a resource management or planning concept and applied to large areas to indicate that all basic uses are accommodated in achievement of provincial and program objectives. "Multiple use"

means that two or more uses occur in the same general areas, either simultaneously or in sequence cyclically. For example, forestry operations and hunting may take place within a forest management unit either generally within the same overall area, or by staggering the uses seasonally. "Sequential use" is quite different from multiple use because only one use is permitted at a time, and a cycle of uses does not occur. The uses are separated by time. Forest operations, for example, may be the first use of an area, followed by gravel extraction which is in turn followed by (rural) residential development. Only the final use is continuous in this case. "Single use" means that only one basic use is permitted. Very few areas are considered appropriate for single use at a broad level of planning. A major exception, however, would be areas designated for wilderness.

A Natural Resources Planning Directorate must also be committed to the maintenance and improvement of overall environmental quality at the provincial level. Where new resource developments are undertaken at local levels, the environment must not be damaged to an extent considered avoidable and it must be rehabilitated as quickly as possible. The landscape must be considered as an amenity and due consideration given to water quality and quantity, endangered species habitat, and other sensitive areas. To this end, it ought to be a policy of government that control of Crown Lands is retained through leasing rather than sale of land.

3.0 PLANNING PRINCIPLES

In addition to the preceding "foundations" within the context of which the Natural Resources Planning Directorate must be established, there are a variety of planning principles which must be appreciated, understood and promoted by the members of the Natural Resources Planning Directorate. These principles are outlined below, prior to discussion of the structure of the Natural Resources Planning Directorate, because they also influence the nature of the Natural Resources Planning Directorate and the resources policies it determines. These principles must be reflected throughout the planning hierarchy (to be implemented simultaneously with the Natural Resources Planning Directorate); they provide the basis for evaluation of the land use and other resource sector plans expected to be developed through the Natural Resources Planning Directorate. The planning principles[1] are as follows; they are not listed in order of importance.

1. Plans are made to achieve objectives; objectives must be clearly identified in the planning process.

   In approaching forestry land use and other resource sector planning, initial stages of the process emphasize determination of objectives. Objectives are the (quantifiable) ends that are chosen to be achieved. Usually these ends are stated in terms of human impact such as jobs, or dollars earned, or person days of hunting. Sometimes the means rather than the ends must be stated; for example, a means policy for parks would be stated in terms of acres of park land rather than person days of recreation.

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1 These planning principles are based upon the Ontario Ministry of Natural Resources, Guidelines for Land Use Planning, 1980, 6 - 7.

For provincial land use planning the objectives must indicate what is to be done and for whom it is to be done. Objectives need to be set which cover all significant environmental concerns about planning areas. A general guide to policy[1] for a forest land management program might be, for example, to administer, protect and conserve public lands and waters and to provide opportunities for outdoor recreation and resource development for the continuous social and economic benefits of the people of Newfoundland and Labrador; to ensure, by the participation of all involved agencies in planning and control, coordinated uses of all lands and waters; to provide an optimum continuous contribution to the economy of Newfoundland and Labrador by stimulating and regulating the utilization of available supplies of fish, wildlife, minerals and trees by resource products industries.

2. Public participation is essential in the planning process.

Public participation means that the public, including industry, takes part in the planning process rather than just reacting to decisions made. There must be real, not token, involvement of affected and other interested parties in determining what uses are made of lands and other resources, provincially and locally.

3. The planning process must include distinct points where options are considered and full disclosure is given of the consequences and trade-offs associated with each option.

All environmental impacts, including noise, loss of scenic amenity, must be included in the disclosure.

4. Planning is a dynamic process.

Planning is a continuous function and must be sensitive to changing needs and conditions and new information. To avoid the danger of irrelevancy, the environment for which a plan was made should be monitored constantly so that review and revision of the plan can occur. Unless all of the planning principles are adhered to, however, no changes to a plan can be made. For example, since public participation is required to prepare a plan, it is required also to revise a plan significantly.

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1 Policy here is referred to as the long term decision concerning the objectives to be met.

5. Land use and resource management plans must be made for the long term and should provide for future options.

Most land use planning exercises use a time horizon of 20 years. Many parts of a land use plan will require longer commitment, particularly forestry, which may require land allocations to remain in effect for 60 years, and wilderness areas, which are based upon relatively permanent land allocations.

Because of our inability to predict accurately future conditions and because it is desirable to enhance the chances of providing continuous benefits, some resource allocation decisions must be left open to future generations. Future options for a planning area may be provided by leaving parts of the planning area relatively undeveloped, by identifying parts of the planning area for planned sequential use, and by avoiding an overemphasis on permanent designations like parks.

6. Integrated planning decisions should be made through a hierarchy of planning areas where broad decisions are made before detailed decisions.

If plans for local areas are made in isolation from each other, each one may plan only for high gain economic development on the assumption that other essential uses like forestry, agriculture and recreation will be considered in other plans. The net effect of such planning would be undesirable and unacceptable. A planning framework or process (outlined in the following section) is certainly desirable in guaranteeing overall consistency and balance across the province.

7. The public good must take precedence over the individual good.

The Crown bestows upon any individual the right to use land. The right to develop land or other resource sectors for a particular use is constrained by the provincial or community interest in how that land or resource is best used. Although the public interest supersedes the private right, and the public interest must receive priority over the individual interest, planning processes must demonstrate a respect for individual rights. Only when there is a clear, demonstrable reason for overruling private rights to land/ resource use should planning processes do so.

8. Plans must identify land (and other resource sectors) so that the most efficient use is made of land as it relates to the objectives.

Since the planning process requires consideration of optional land uses, plans must be evaluated on their long term economic efficiency. If two plan options were to be considered the one which would permit achievement of all objectives at lowest cost would generally be the best plan.

When only one objective is being considered, the most efficient allocation would be the most accessible and highest capability land. Thus, it would be more efficient to assign forestry to accessible high capability land than to inaccessible low capability land.

Some modification of simple efficiency rules would be expected to allow for the overall or net long term cost when a whole set of objectives is to be met. It is possible that a certain use would be assigned to land of lower capability or to a less accessible location because of the overall considerations.

9. Plans must recognize that the natural environment has a limited ability to provide long term benefits and to withstand use.

Since plans are made for the long term, environmental capacity (the ability of the environment to provide continuous benefits) must be recognized. Two types of capacity are generally recognized, productive capacity and use or development capacity.

Productive capacity refers to the ability of the environment to produce biological crops such as forests, wildlife, fish or agricultural products. Use capacity is defined as the limit at which human activity will lead to undesirable changes in the environment. This may be caused by a breakdown in one or more biological components of the environment or by purely social factors. Social capacity is defined as the level of use beyond which a decrease in user satisfaction would occur due to the presence of people (particularly significant in a recreation context).

Even though the topic of capacity is not well developed and few standards exist, it is still necessary to establish capacity standards in a land use plan so that supply calculations can be made. Because capacity does vary according to the level or intensity of management, land use plans must explain the assumed level of management for each capacity standard chosen. Also, the rate of harvesting a standing (forest) crop is an important consideration. Clearly, when an area is designed to meet a particular timber target, the harvest of the growing crop from that area must, in the long run, be consistent with the productive capacity of the area.

4.0 THE PLANNING PROCESS

4.1 Integrated Management Hierarchies

Integrated resource management involves setting resource use priorities based on provincial goals and objectives which reflect society's needs, and implementing these goals and objectives through the planning process. While planning is an evolving process, its general framework should be based upon a hierarchy of integrated management from a provincial to a local level. At each level, appropriate mechanisms for implementing the integrated resource management plan must exist.

British Columbia, Alberta and Ontario (among other Provinces) employ hierarchical resource planning systems. A description of an example from each Province follows in order to illustrate that different ways exist to structure and organize an integrated planning and management process or system.

4.1.1. British Columbia

British Columbia's Ministry of Forests planning system takes the following form (February 1983):[1]

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[1] The description is from the B. C. Ministry of Forests Statement on Integrated Resource Use, 1983, 2 - 3.

Figure VI-1

BRITISH COLUMBIA MINISTRY OF FORESTS PLANNING SYSTEM

MANAGEMENT LEVEL	PLANNING SYSTEM	PLANNING FUNCTION
Headquarters	Government Priorities Ministry's Management System	Forest Policy Formulation
Region	Regional Priorities Forest Management Plans (TSAs/TFLs)	Strategic Integrated Resource Planning
District	Local Priorities Development Plans	Tactical Integrated Resource Planning

(B.C. Ministry of Forests Statement on Integrated Resource Use, 1983, 2).

The Government sets Policy direction through funded programs. The Ministry of Forests has the opportunity to influence this direction through the submission of its periodic Forest and Range Resource Analysis Report and the annually updated Five Year Program. In developing its Forest and Range Resource Analysis Report the Ministry consults with other Ministries as to their program objectives and identifies how these interact with Ministry of Forests program objectives.

The process of setting Regional Priorities involves the interpretation of provincial policy in the regional context, and includes specifying broad resource use targets. The integration of uses at this level involves inter-agency discussion and, as appropriate, review by the Regional Resource Management Committee.

The preparation of forest management plans for TSAs and TFLs [1] is carried out in the context of regional priorities. A major component of TSA plans and working plans for TFLs is a land use map which indicates the land base on which timber harvesting, range and forest recreation programs will be implemented. In addressing integrated resource use at this level, the resource use requirements of the Ministry and, through discussions, those of other resource agencies must be identified. To achieve the necessary integration, a range of strategies relative to other resource values must be identified and implemented.

In Local areas, potential conflicts are identified, evaluated, and alternatives developed for their resolution. The concept of detailed planning at the local level attempts to ensure consideration of local interests even though, in some cases, regional or provincial interests may necessarily take precedence. It is at this level of planning that detailed, tactical, integrated resource use planning occurs. For instance, it is often necessary to identify the different resources according to their primary and secondary uses and benefits in keeping with the resource use objectives set for the management area. Once the local primary use has been identified it is necessary to determine how it can best be implemented to integrate and accommodate the secondary uses.

The final planning step is the implementation stage, that is, developing the detailed development plans, logging plans, range unit plans, and forest recreation site development plans which specify how development will take place. These detailed plans are the mechanism by which the Ministry focuses all related planning decisions and puts them into operational effect at the field level. They are also the basis for developing the Ministry program proposals for submission to Government.

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[1] TSA is a Timber Supply Area, a geographic unit defined for harvest planning and regulation. TFL or Tree Farm License is an agreement granting rights to harvest Crown timber.

Representation in the Ministry of Forests planning processes will vary according to the level of planning being undertaken but may, as appropriate, include other resource Ministries, the resource industries, and resource users. Public involvement is an integral part of the planning process, as documented in the Ministry of Forests Public Involvement Handbook.

It must be emphasized that integrated resource use cannot satisfy all the expectations of all people. Regardless of the planning and management structure, forest and range lands may not be able to support all the demands placed upon them without unacceptable conflict or irreversible damage. Integrated resource use is a viable principle when applied to management areas, but should not be expected to apply to each individual hectare within the area.

Finally, and to translate plans into actions, operations are conducted in accordance with approved plans, and monitored to see that they deliver the required goods and services.

4.1.2. Alberta

Alberta's Department of Energy and Natural Resources integrated resource management system (as of October, 1983) can be diagrammed as in Figure VI - 2.

The integrated management system at the provincial level is primarily delivered through single sector policy in the form of goal statements such as the Fish and Wildlife Policy, or the Coal Policy.[1]

At the regional level (the Province is divided into 6 regions) the primary mechanism for implementation is integrated resource policy. The Eastern Slopes Policy is the only policy at the regional level presently

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1 This discussion is from S. Calp, Integrated Resource Management and the AFS Integrated Planning Program, 1983, 2 - 4.

Figure VI-2

ALBERTA DEPARTMENT OF ENERGY AND NATURAL RESOURCES:
INTEGRATED RESOURCE MANAGEMENT SYSTEM

SCOPE	DELIVERY MECHANISM	PURPOSE
Provincial	Single Sector Policy	Goals and benefits to be provided within the framework of government goals.
Regional	Integrated Resource Policy	Broad course of action to guide provincial goals at a regional level. Resource allocation and development direction.
Sub-Regional	Integrated Management Plans	Management strategy.
Local	Programs/Projects	Program management plans, operational planning and budgeting. Referral system.

Source: S. Calp, Integrated Resource Management and the AFS Integrated Planning Program, Alberta Forest Service, Edmonton, 1983, 3.

available as an integrated resource management statement. Preparation of resource policies for the five other regions of the province would facilitate integrated planning at the next level, the sub-regional.

Integrated resource management plans provide the management strategy at the sub-regional level. The Castle River Integrated Resource Management Plan is an example of the delivery mechanism at the sub-regional level.

The final division of management responsibility is at the local level, which is the actual delivery component of the overall program. Programs are managed through separate sector programs, projects, operational plans, referral systems, regulations and policy coordinated within regions (i.e. forest). This forms the final link in the integrated resource management system.

In summary, the integrated resource management system is an overall framework which provides for comprehensive coordinated management from policy development at a provincial level through planning to the application of specific projects at a local level.

"The Alberta Forest Service (AFS) Integrated Management Planning Program" provides the mechanism through which the AFS participates in the larger departmental planning process.

4.1.3. Ontario

In Ontario, land use plans are undertaken through a process involving the following steps:[1]

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1 This description is from the Ontario Ministry of Natural Resources, Guidelines for Land Use Planning, 1980, 9 - 10.

First -	Establish the Terms of Reference
Second -	Collect and Analyse Information
Third -	Develop the Policy (Objectives and Targets)
Fourth -	Develop the Conceptual Land Use Plan (by developing options, then evaluating them and choosing the preferred option)
Fifth -	Develop the Land Use Plan
Sixth -	Develop the Review Procedure
Seventh -	Plan Approval and Implementation

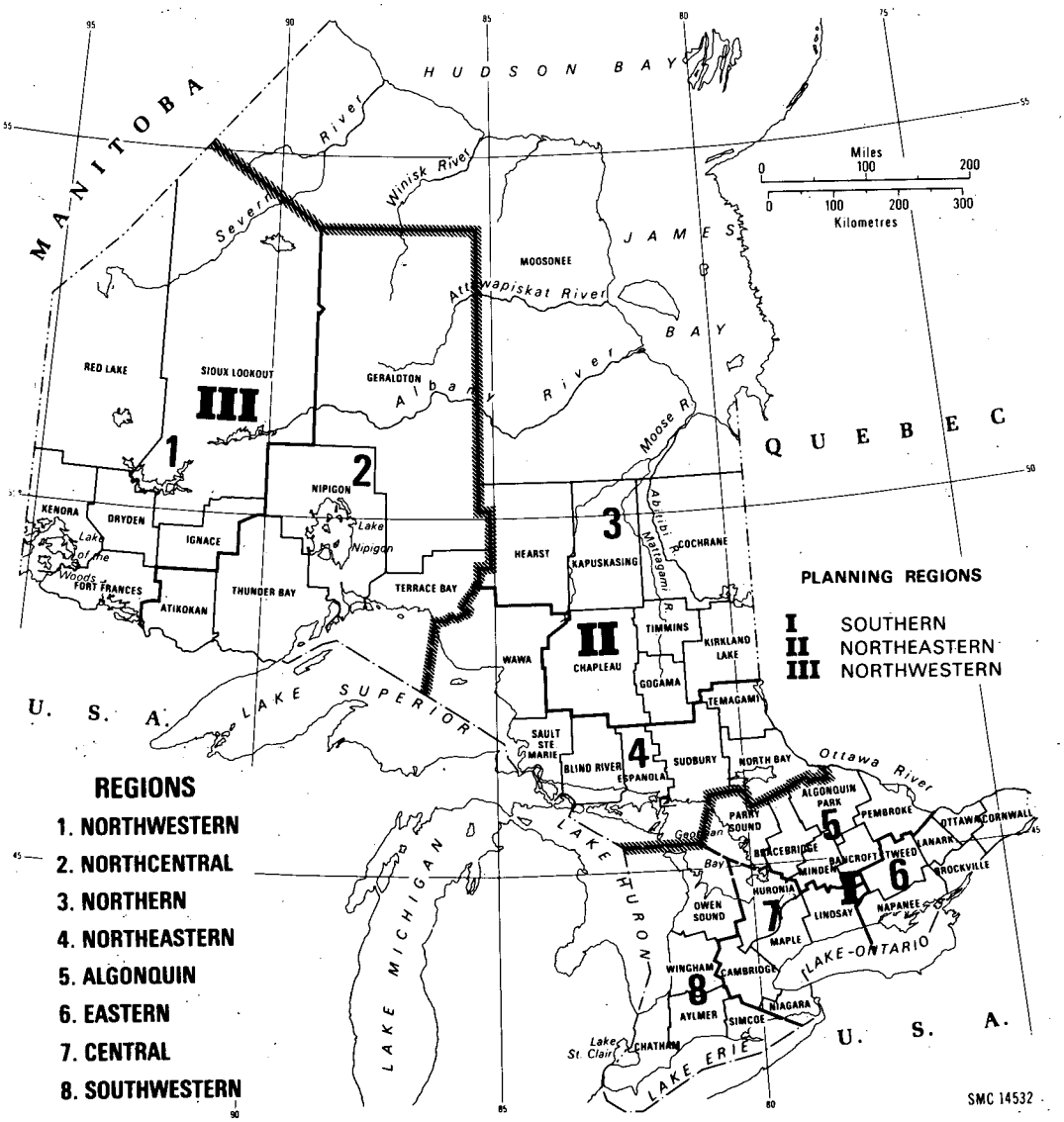
Public participation is an essential part of this planning process. Further, the planning process steps are sequential, so a failure to complete any one of the steps halts the whole process. In addition, the planning process is iterative. This means that the sequential process may frequently be interrupted to go back to a previous step to refine or clarify a point.

The Ministry of Natural Resources' land use planning process is implemented through a hierarchy of planning areas, ranging from (a) the Province of Ontario, to (b) the three planning regions (eight administrative regions have been grouped into three planning regions in order to facilitate policy development and to ensure a standard approach to planning and liaison with other agencies), and (c) the administrative districts (Figure VI - 3).

The full planning process is not carried out at all levels. The main purpose of the provincial plan is to give policy direction to the regions. The main purpose of the regional plan is to give policy

Figure VI - 3

MINISTRY OF NATURAL RESOURCES PLANNING REGIONS,
ADMINISTRATIVE REGIONS AND ADMINISTRATIVE DISTRICTS



Source: Ontario Ministry of Natural Resources, Guidelines for Land Use Planning, Queen's Printer, Toronto, 1980, 8.

direction and some area designations to the districts. For example, the planning region must plan the location of all large wilderness areas. At the district level of planning, policy must be translated into a land use plan and as a result the entire planning process must be completed.

Figure VI - 4 illustrates how the land use planning process is to be implemented through the hierarchy of planning areas.

The way in which this hierarchical planning process works is described below:

Provincial Level:

Information is collected by individual Ministry of Natural Resources branches and optional policies are presented to Government where decisions are made. Public involvement at this level occurs through traditional political mechanisms.

Policy development at the provincial level is an on-going process of government and is not a result of the land use planning process. The land use planning process does, however, combine the policies into one report, so conflicts and omissions may be more readily detected.

The provincial level of land use planning also indicates proposed policy (including objectives and targets) to be assigned to each planning region. Because this is a synthesizing process, participation for this is limited to Ministry of Natural Resources staff, other Ministries and the provincial government. While no other participation is sought at this level the information is available to anyone who requests it.

Figure VI-4

ONTARIO PROVINCIAL, REGIONAL AND DISTRICT LAND USE PLANNING

RESOURCE MANAGEMENT PLANNING	LAND USE PLANNING[1]		
	Provincial	Regional[2]	District
Individual Policy Originated by Branch concerned	1. Terms of Reference 2. Information 3. Develop provincial policy by assembling individual policies and assign targets to planning region	1. Terms of Reference 2. Information 3. Develop Regional policy 4. Develop Conceptual Plan and assign targets to Districts	1. Terms of Reference 2. Information 3. Develop the District Policy 4. Develop the Conceptual Plan 5. Develop the Land Use Plan 6. Develop the Review Procedure 7. Plan Approval and Implementation
Manage Allocated Land to meet policy			

Source: Ontario Ministry of Natural Resources, Guidelines for Land Use Planning, Queen's Printer, Toronto, 1980, 9.

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1 It should be stressed that the connections between the various components of Figure VI - 4 are iterative rather than simply sequential. For example, although the basic policies used in land use planning come from the resource management sectors, these policies may subsequently require modification due to the considerations of land use planning. Also, when a higher level planning (e.g. regional) passes policies to local areas, the local areas test these and may request a revision.

2 Regional in this Figure refers to the planning regions. In some planning regions an intermediate step may be taken between the planning region and the districts. Targets may be assigned by the planning regions to the administrative regions who then assign targets to the districts.

Planning Region Level:

Terms of reference are set in adherence to provincial requirements which include the proposed regional targets. Information is collected to assist in testing and modifying the proposed regional policy.

Policy is developed by testing the proposed targets through public participation and by calculation of the capacity of the region to produce desired benefits. If the proposed targets are unacceptable then alternatives must be proposed, evaluated and negotiated with the provincial level. If the policy is acceptable a conceptual plan is developed and targets are assigned to districts.

Public participation at the regional level must be open to all concerned individuals and groups within the planning area.

District Level:

Terms of reference are set to adhere to regional requirements which include the proposed targets. Information is collected at a more detailed level than for the region.

Policy is developed by testing the proposed targets through public participation and by careful calculation of the district's capacity to meet the assigned targets. If the policy is unacceptable then alternatives must be proposed, evaluated and negotiated with the region.

When the policy is acceptable then a conceptual plan is developed, refined and a review procedure and implementation procedure developed.

The essence of a district plan is an identification of appropriate land and water areas for the various Ministry programs. For Crown

land the plan must provide for all government programs. For private land the plan must identify those land and water areas which are critical for the achievement of the Ministry of Natural Resources programs.

Ultimately the plan must be compatible with other agency plans including those of the Conservation Authorities and the plans of the municipalities.

5.0 A PROPOSAL FOR A NATURAL RESOURCES PLANNING DIRECTORATE FOR NEWFOUNDLAND AND LABRADOR

The land use planning systems in Alberta and Ontario employ "departments" or "ministries" as the key units in preparation of integrated land use and resource management plans. In both cases, the responsibility for land use planning is clearly vested in these agencies. In British Columbia the Environmental Land Use Committee, which is a Cabinet Committee, is responsible for the broad land use policy and priorities of government.

While each of the above systems has advantages and disadvantages, the proposal is for a Natural Resources Planning Directorate for Newfoundland and Labrador to be established as a Cabinet Committee. While this Natural Resource Planning Directorate is only one of many ways in which the Province could attempt to deal with the lack of comprehensive, integrated land and resource management planning, a Cabinet-responsible body is required both to establish a land use planning process and because of the apparent inability of existing line departments to coordinate and cooperate in their activities relating to resources. By establishing such a Cabinet Committee, a body with

responsibility to oversee all departments dealing with natural resources would be able to perform these critical roles.[1] In other words, the Natural Resources Planning Directorate would be responsible, initially, for policy planning.

Policy planning by the Natural Resources Planning Directorate would involve establishment of broad goals, objectives, priorities and strategies for various land uses that identified the long term direction that would contribute to the achievement of the broad social, economic and environmental goals of the Province of Newfoundland and Labrador. Because it would be at the apex of the land and resource planning hierarchy in the Province, the Natural Resources Planning Directorate would have a variety of relationships with land and resource agencies throughout the Province. The following sections describe briefly how the Natural Resources Planning Directorate would influence land and resource planning within the Province.

5.1. The Nature of Land and Resource Planning Programs for Newfoundland and Labrador.

Land and resource planning in Newfoundland is and will remain a complex set of responsibilities involving a wide range of departments. A general structure for integrated, comprehensive resources planning could have the following characteristics:[2]

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1 While ILUC has attempted to fulfill a coordinating role, it has no legislative authority to enforce its decisions or ideals. Similarly, the Crown Lands Branch appears to be a weak partner in planning for land use.

2 It cannot be stressed enough that this proposal represents only one of several possible ways to implement better resource planning and management processes. Depending upon changeable political realities, the proposal would likely require alteration in order to meet objectives of such a planning system.

5.1.1. Planning Hierarchy

Up to five levels of planning could exist within the Province. At least three levels (those marked with a * in the list below) must exist. The five levels include:

* provincial land use policy
* regional strategic plans
* "local"
  - sub-regional resource priority plans
  - sub-district detailed allocation and management plans
  - operational or site plans

Project impact assessments undertaken through the environmental impact assessment process and other resource project review processes should be important components in the land use planning process.

5.1.2. Hierarchy of Responsibilities

Implementing land and resource planning programs should occur through a hierarchy of responsibilities, including:

a) at Cabinet level: A Natural Resources Planning Directorate

As already noted, the responsibility of the Natural Resources Planning Directorate as a Cabinet Committee would be to establish broad land use policy and priorities of government. To accomplish this the Natural Resources Planning Directorate could be comprised of Ministers from all resource-related departments (as in the British Columbia Environment and Land Use Committee) or it could consist of a combination of Ministers, individuals selected for their resource management or planning expertise and those with a liaison function or ability.[1] In any case, responsibilities pertaining to provincial land use policy and

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1 The Natural Resources Planning Directorate must not be too large a body; in British Columbia there are 9 Ministers involved in the Environment and Land Use Committee.

regional strategic plans (policy planning) would exist at the Natural Resources Planning Directorate level (see Figure VI-5), as would responsibility for establishment of process(es) for refining the land use policies and obtaining public input.

b) Deputy Minister level: A Technical Committee for the Natural Resources Planning Directorate

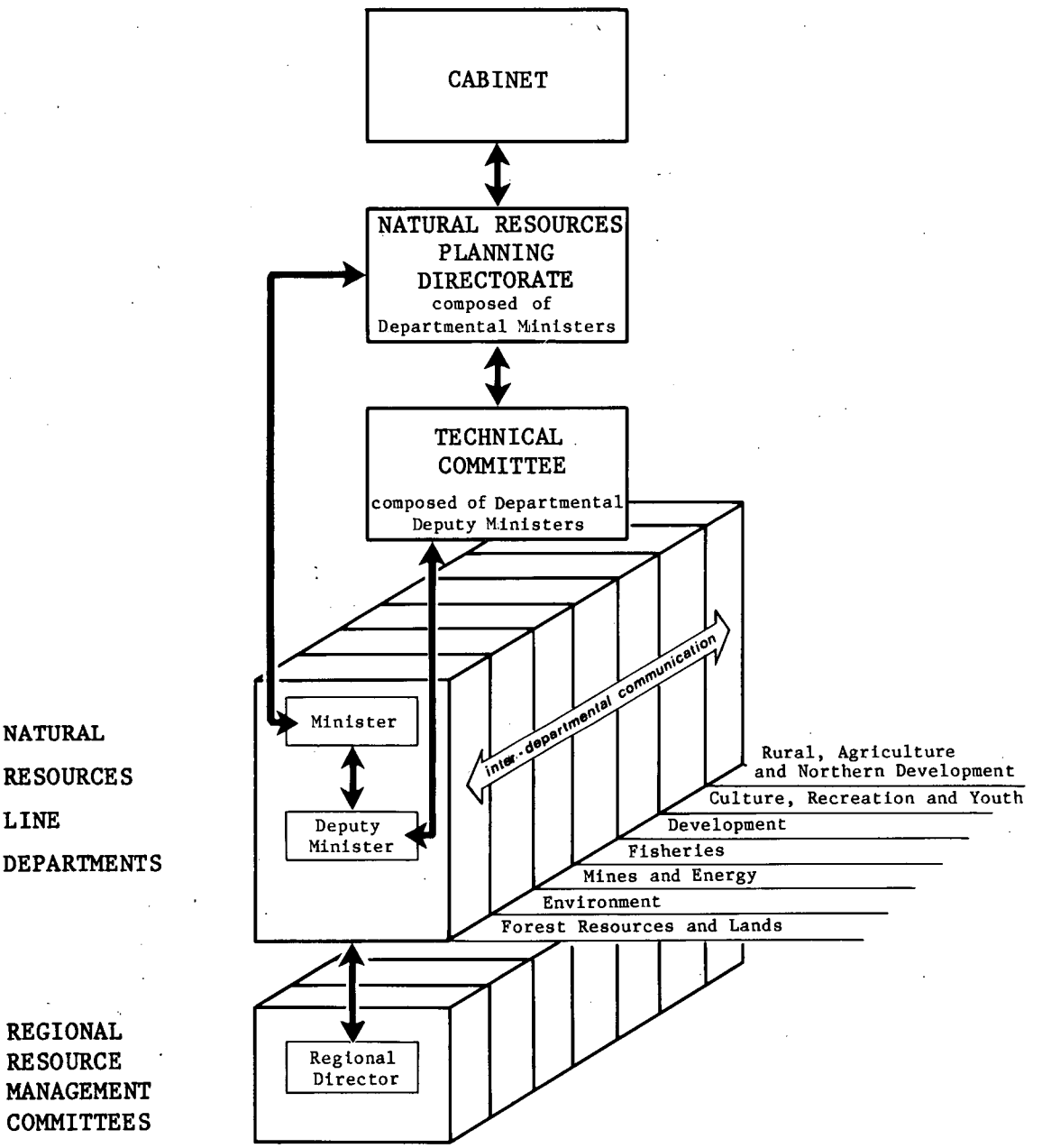
The Natural Resources Planning Directorate must receive input from Departments with land and resource responsibilities. If a Technical Committee comprised of Deputy Ministers (similar to the British Columbia ELUC Technical Committee) were to be established and given responsibility for advising the Natural Resources Planning Directorate on broad land use policies and priorities, the goals and objectives of the line departments would be forced to be clarified. The Technical Committee could then act as a forum for resolving significant resource issues and land use conflicts that do not seem to be resolvable at the regional level. Once such issues were resolved, the Deputy Ministers' Technical Committee could provide broad direction to regional resource management committees.

c) Regional Director level: Regional Resource Management Committees

The Province of Newfoundland and Labrador could be divided into four or five management areas: (1) Labrador, or (1) coastal and (2) inland Labrador; (3) the Northern Peninsula and West Coast; (4) Central Newfoundland, and (5) the Avalon Peninsula (Figure VI-6). Each of these areas could have a Regional Director (resource manager), and perhaps a Regional Resource Management Committee (comprised of Regional-Manager-level individuals from all resource departments). The Regional Director and/or Committee would have responsibilities for further policy planning; for establishing planning priorities within regions; coordinating land and resosurce use planning activities of the various departments at the regional level; identifying

Figure VI-5

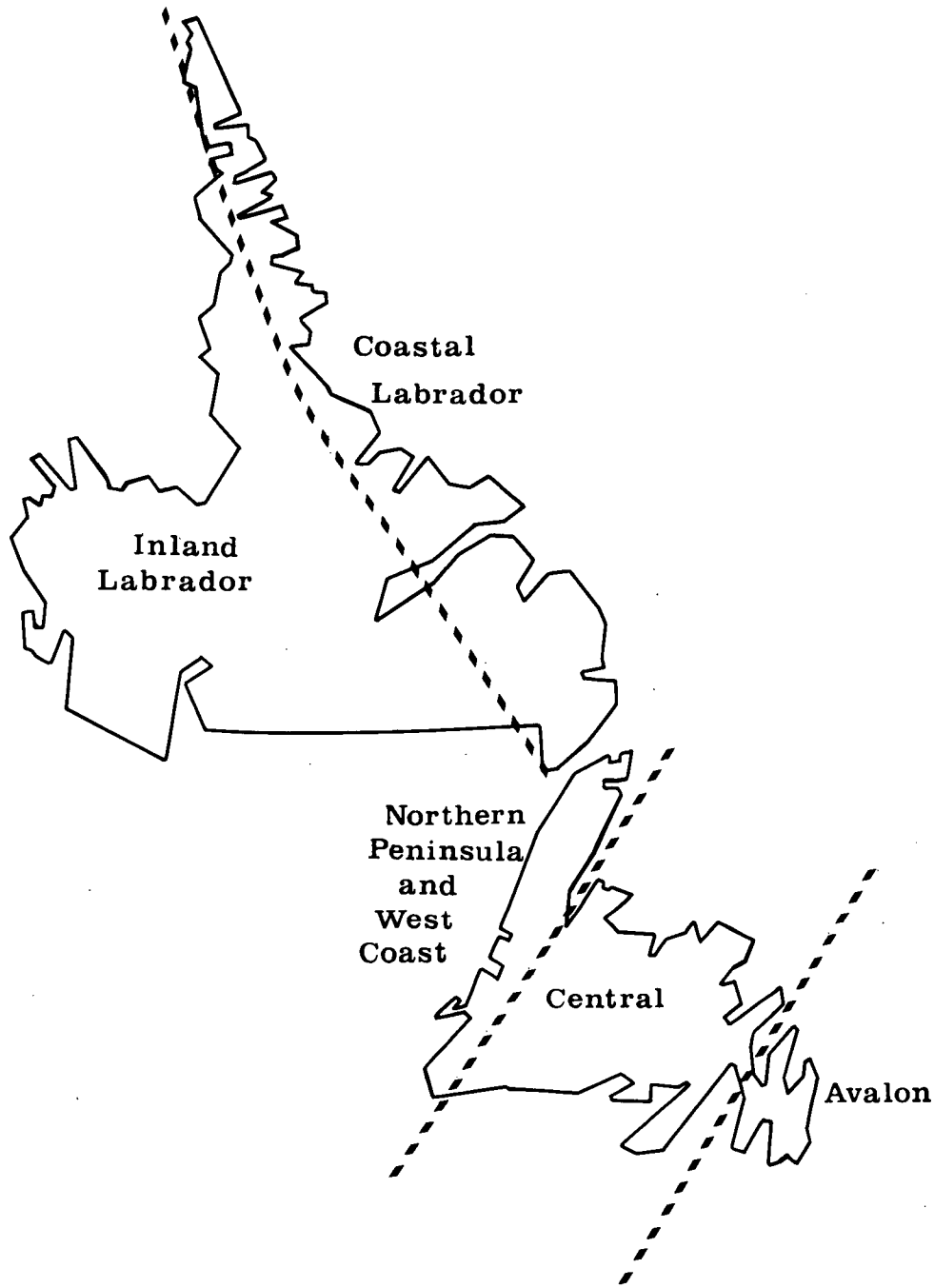
A GENERAL FRAMEWORK FOR INTEGRATED LAND AND RESOURCE PLANNING FOR NEWFOUNDLAND



Note: This figure illustrates only the major Departments whose policies and actions may affect land directly. Not all Departments are specified.

Figure VI - 6

POTENTIAL RESOURCE MANAGEMENT REGIONS IN NEWFOUNDLAND AND LABRADOR



strategies for land and resource conflict resolution; assisting in the preparation of regional strategic plans; and generally providing inter-departmental communication and liaison. Planning Task Groups or Committees could exist at the regional staff level to undertake planning projects on an inter-departmental basis. They would be responsible for liaison and coordination at the project planning level.

5.1.3. Forestry Land and Resource Planning Programs

The departments with forest land and resource responsibilities would input to the creation of regional as well as local (subregional, subdistrict, operational) plans. The activities they would engage in to help the Natural Resources Planning Directorate guide the allocation, development and use of the forest lands and resources would be similar to those undertaken by the Natural Resources Planning Directorate. To reduce repetition the local land use planning process in general is discussed below, with some forestry examples provided.

5.2. The Land Use Planning Process: an outline for Newfoundland and Labrador

The land use planning process may be 'modeled' in a number of ways. One simple way to outline the process is shown in Figure VI-7. In viewing the Figure, it should be noted that in other planning processes these steps may be given other names, they may be carried out in a different order, or they may be omitted or merged with other steps. Nevertheless, if all steps indicated on the Figure are taken into account in planning - for resource management generally and forest land use specifically - then the product should be an integrated management

Figure VI-7

AN OUTLINE FOR A LAND USE PLANNING PROCESS FOR NEWFOUNDLAND AND LABRADOR

PHASE	ACTIVITY OR INPUT	PRODUCT OR OUTPUT
I PLAN BACKGROUND (preplanning)	1. Establish the Terms of Reference - define planning area boundaries and general reasons for and purposes of the plan, including what people are to be served by the plan and the ways in which they will be served. (Usually the primary clients for a planning area are the local and traditional users of that area). This includes environmental concerns. - plan should cover all concerns and should not start with any particular emphasis (unless, for example, special planning areas (wilderness, recreation areas) have been defined by statute. - identify decision makers for the various planning steps (e.g., who has authority to make final choice of an option where options are presented in the process?); establish roles, responsibilities and working relations; set up a work program, including a schedule for public participation. 2. Collect and Analyze Information - determine information needs; - collect information to assist in development of policy (at provincial, regional, local levels) and preparation of the land use plan; information is required about: a) people: - history of settlement and development - population - number, distribution, projections; b) natural resources: - land and water area - climate and air quality - watersheds and water quality - bedrock geology and unique or rare rock formations - topography and soil depth - agriculture capability (from Canada Land Inventory) - timber capability (from Canada Land Inventory, provincial measures)	1. Terms of reference 2. Plan background paper

- forest cover and other vegetation including rare or endangered species
- mineral potential including aggregate fuels
- recreation capability (Canada Land Inventory)
- historic and cultural areas and sites
- fish productivity, populations, and rare and endangered species
- wildlife capability and suitability, populations, and rare and endangered species
- wetlands, aquifers and recharge zones.

c) present uses, development and projections:
- land tenure and other legal rights regarding the use of land and water
- urban areas, commercial and industrial developments particularly related to resources
- rural dwellings including cottages and farm homes
- transportation and communications (roads, railways, airports, harbours, power lines, pipelines)
- agriculture*
- timber operations and the forest industry*
- mining and the mining industry* (metallics, industrial minerals and fuels)
- trapping*
- commercial fishing*
- public recreation areas*
- trails, boat routes, and canoe routes*
- commercial recreation developments*
- hunting*
- sport fishing*

- (*) For those items marked with an asterisk the potential for further future development and use must be clearly analyzed by calculating the total potential supply as well as the presently accessible supply by category (Crown land, other public land, private land). Specialists (foresters, biologists, geologists) will conduct the inventories, planners must standardize the approach to analysis with regard to the land area available.

  - in such calculations, the assumptions made must be recorded; for example, when the forest potential is calculated it could be assumed that no land will be available in urban areas or in certain recreation areas, but that at least 10% of agricultural land will be used for forest production.

  - in all cases, the situation concerning the potential for future development must be explained.

d) existing plans:
   - existing plans and planning areas (if any) must be shown on a map and described in a report. This includes official municipal plans, plans of other Departments (such as Mines and Energy; Agriculture; Culture, Recreation and Youth), and plans and studies under investigation but not yet completed;

   - official plans and zoning by-laws of municipalities control the use of private land and must therefore receive special attention with regard to their effects on programs of the Natural Resources Planning Directorate.

e) problems and issues:

- any significant problems and issues of the planning area must be described (information may come from news media analyses, a public participation program). Such topics as jobs, garbage disposal or fuelwood cutting are included;
- an inventory of sensitive areas must be compiled and kept up to date. In all planning areas it is likely that individuals or interest groups will advocate preservation of certain valued features, be they geological, biological, historical or cultural or any combination of features. Record must be kept of the location of the feature or area, its description, and the name of the individual or organization proposing preservation so that communication can be maintained.

3. Develop or Determine the Policy

- following the hierarchical arrangement, local planning areas will receive proposed policy and objectives for their area from the regional planning bodies which will have given initial and relatively general consideration to the district's needs and resource capabilities. The regional planning body will, in turn, have received broad policy input from the Natural Resources Planning Directorate;
- determining or developing the local policy involves taking the proposed policy, testing it socially (a public participation program may be requried) and physically and negotiating with the regional planning body for any desirable or necessary changes. Additional policy items might be included; for example, determining which of the sensitive areas will be preserved must be decided as a matter of policy. Similarly, decisions regarding the amount of agricultural land to preserve or to use for timber production must be made policy. Where Crown land is involved, policies of all other Departments will be identified (e.g. for tourism, cottaging, agriculture, hydro development). The Natural Resources Planning Directorate land use policy (ultimately) must provide for all government programs requiring land or water;

- if the physical and social testing of policy proves it acceptable, then the local policy can be approved as proposed. If it is unacceptable, alternatives must be proposed, evaluated and negotiated for approval;
- even if a policy is acceptable and approved at this stage, it may prove to be unacceptable later; as a result of Step 4 in the next phase of the planning process, the policy may be revised.

II

PLAN DEVELOPMENT

4. Develop the Conceptual Plan

- prior to this step the Natural Resources Planning Directorate has requested all Departments to specify their programs, goals and policies. Now the compatability of these policies must be determined. One way to do this is to prepare a conceptual land use plan by (a) preparing a series of optional conceptual plans and (b) evaluating them and choosing the preferred option. Clearly, land use conflicts must be avoided and appropriate uses identified for areas capable of sustaining such uses.
- the principle of multiple use applies; while all possible uses are accommodated within a planning area, and integrated to make the most efficient use of land, it may be necessary to segregate certain uses. In some areas, for example, agricultural land may "be removed" from the calculations of potential future growth of forestry.
- one suggested means of preparing optional conceptual plans is:
  - (a) map all urban areas and other dense developments, agriculture land and established parks. These are assumed to be the non-negotiable parts of the plan (at least for purposes of this step). Obviously other plans and land tenure arrangements must be given consideration here. Though other plans generally should be respected, if problems are anticipated then negotiations might prove useful in changing them;
  - (b) prepare a conceptual plan for the amenities in order that targets for them (such as acres of park land or volume of timber) may be achieved. Items such as proposed parks, recreation areas or forest preserves

1. Plan alternatives

that require restricted or partly restricted use must be placed into the plan "early";

(c) test to see if the balance of the area is adequate and appropriate to meet the targets such as forestry and mining that are economic in nature. If the result is positive the conceptual plan is viable and other plans should be developed by repeating steps (b) and (c);

(d) if repeated attempts at steps (b) and (c) result in no viable plan then a policy revision is required. This can be done by one of the following (not in order of priority):

- revise the amenity targets, or
- revise the economic targets, or
- revise the conflict assumptions used in defining policy.

Any and all such revisions must not be done arbitrarily, but rather referred to the decision makers who may wish to open the issue to public debate. In any case, the rationale for all revisions and tradeoffs must be documented;

(e) repeat steps (b) and (c) until several viable options are found.

- because land use planning is for the long term, forest management areas must be given special consideration (due to implications if forest land use is precluded);
- normally, developing a conceptual plan begins with understanding present uses. Even with a high degree of established uses, multiple use possibilities should be explored fully. Also, as a general rule, land use is assigned to the highest capability areas appropriate for that use. This does not mean that all high capability areas for a particular use are to be developed for that use;
- conceptual plans at the local and regional levels depend significantly upon personal familiarity with the area being planned. Thus the importance of the Regional Directors and Regional Resource Management Committees in the proposed hierarchy of planning responsibilities;

- evaluating the options and choosing the preferred resource and land use plan from among alternatives is the prerogative of government decision makers. But planners must provide them with the consequences of each option as well as the differences among plans in economic costs, social preference, and future options. All other things being equal, preference should be given normally to plans which:

  a) cost the least to implement;

  b) maintain the greatest number and/or variety of future options;

  c) are the most acceptable socially; and

  d) cause the least degree of environmental damage.

5. Develop the Land Use Plan

- a conceptual plan will be quite general regarding both the area boundaries and the policy for each area. A refined plan must be prepared by starting with the preferred conceptual plan and clarifying the boundaries of areas, adding new areas where necessary and by a more precise documentation of the policy for each area.
- boundaries for each area may be natural, such as a watershed, or artificial, such as a road. In every case the boundaries chosen should be clearly understandable and able to be located on the ground without a survey;
- additional areas may be required on a refined plan to indicate buffer areas or specific variations within a general area of the conceptual plan.

III PLAN IMPLEMENTATION

6. Develop an Implementation and Review Procedure

- plan implementation is achieved primarily through the policies and programs of the line departments, their policy reflecting the Natural Resources Planning Directorate's formal policy statements as well as their own zoning or other regulatory arrangements. Thus it is important that plan implementation be recognized in the plan development phase in order that adequate communication with all concerned in the planning process may be achieved and issue resolution strategies considered (see review process outlined below);

1. Plan implementation document

- a general implementation strategy must be developed (thus the earlier statement of the need to identify roles and responsibilities) in order to meet the established plan objectives. The strategy must give consideration to matters such as which ongoing programs are to be used, where changes might be needed, the cost of any new programs required, and the variety of regulatory and advisory actions employed;
- an important part of plan implementation is constant monitoring of the planning area. Any major changes to a land use plan must be made through a review process similar to the overall planning process. The review process should include these steps:

  a) review terms of reference and revise if necessary;

  b) update background information;

  c) review the policy and modify if necessary by negotiating with the region;

  d) prepare alternative revised land use plans, evaluate them and choose one;

  e) review the existing review procedure and modify as necessary. Set a date for the next regular review;

  f) review the implementation procedure and revise as necessary. Take revised plan through the approval procedure and publish for release to the public.

7. Plan Approval and Implementation

- all steps of the planning process must be summarized in a report, including documentation of the public participation program;
- the plan implementation document, which includes the plan, is submitted to decision makers for formal approval; it becomes the guide for all programs of the line departments which occur in a planning area;
- it is essential that all departmental staff understand and support the plan; some retraining and reeducating of provincial departmental employees may be necessary to ensure successful attainment of the developed plan(s).

IV PLAN MAINTENANCE	- a process of systematic feedback (monitoring, evaluating and updating) can help any land use plan maintain and retain its validity - monitoring ensures that the policies set out in the plan are being adhered to; any necessary changes identified are processed in the review procedure (Step 6) - evaluation consists of checking both the process and the product to ensure that objectives are met in an effective and efficient manner - in order to be effective, planning must be continuous: the day a plan is completed it is outdated; constant revision to keep it up to date is essential	1. Annual Reports 2. Revisions

NOTE: This Figure represents a compilation of information and suggestions from the following sources:

a) Ontario Ministry of Natural Resources. Guidelines for Land Use Planning, Toronto, 1980, 11 - 18.

b) S. Calp. Integrated resource management and the AFS integrated planning program , Alberta Forest Service, 1983, 8 - 12.

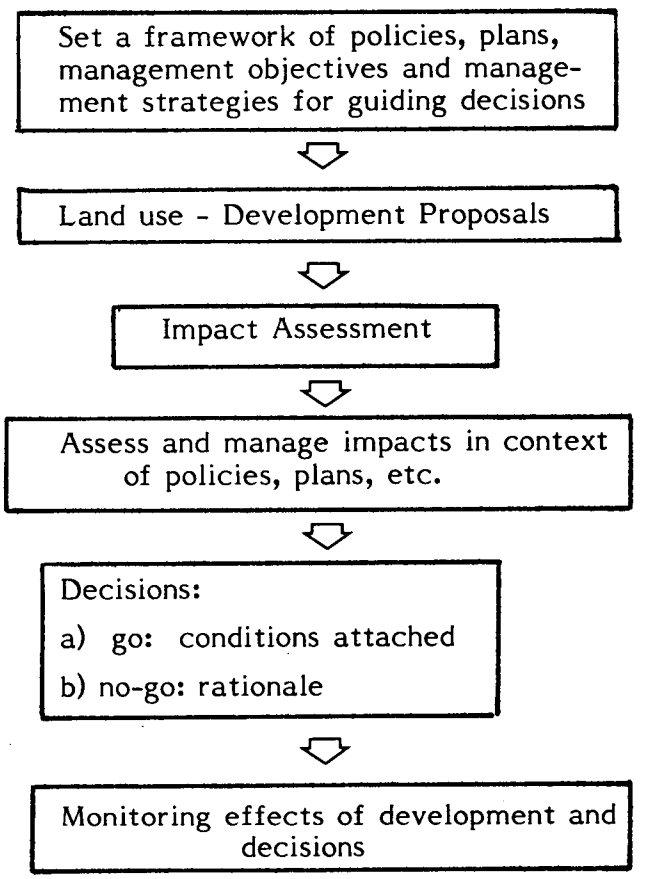
c) J. O'Riordan, Experience in environmental planning in British Columbia, B. C. Ministry of Environment, 1984, 4 - 9.

plan. Also, the planning process outlined is a normative one; it moves broadly from identification of objectives, to supply/demand analysis, evaluation of management alternatives and selection of management activities (including both regulatory and assessment decisions). The planning process described in Figure VI-7 should be viewed as part of a broad model of a 'desirable' resource decision making process outlined below (Figure VI-8).

Creation of the strategic planning architecture of the type suggested will require considerable thought as well as a high level of commitment to the ideals of comprehensive, integrated resource management. At a time of general economic restraint it may be difficult to maintain enough staff resources to collate existing information, to complete supply/demand analyses for sub-regions and to develop local management objectives and supporting policies to guide decision making. At the same time, restraint should force (if it has not already done so) an evaluation of the effectiveness of the major activities required to achieve objectives. This should, in turn, shift attention upwards toward a provincial review of the major resource policies, to force the placing of priorities on the various program objectives and to determine the manpower, training, budgets and capital assets required to achieve the new priorities suggested. The challenge is to determine where to direct Provincial planning efforts and activities to obtain maximum "pay-off" for the limited resources available.

Figure VI - 8

A "DESIRABLE" MODEL FOR LAND USE DECISION MAKING PROCESSES



Source: after J. O'Riordan, "Experience in environmental planning in British Columbia", British Columbia Ministry of Environment, Victoria, 1984, 9.

Changing political and economic circumstances, provincially and nationally, must challenge and stimulate the creativity and commitment of the Province's planners and politicians. Major adjustments must be made in the Province's approach to resource planning and management if future-appropriate decisions are to be made. Today's lands and forests are indeed tomorrow's challenge. Strategic planning can help ensure that challenge is met.

APPENDIX I

Clipping from Victoria Times-Colonist
January 3, 1984, p.2.

Crisis for forestry

It's running out of trees—experts

VANCOUVER (CP) — The forest industry is on the verge of a crisis. It's running out of trees.

Experts such as Robert Kennedy, dean of the University of British Columbia's forestry faculty, say the real crunch will come within the next 25 years and will make the current recession seem like little more than a blip on a rising trouble curve.

If there isn't an immediate move towards an extensive reforestation program, there won't be enough trees left to continue logging at the present rate. The annual maximum allowable B.C. cut is 75 million cubic metres, about half the Canadian total, which has nearly been met several times when markets were good.

Kennedy said the crisis can be averted if Canada can grow more trees on land that has already been harvested and not replanted. The B.C. Forests Ministry estimates that of the 1 million hectares harvested annually in the province, nearly one-third isn't replanted.

But he said restocking the inventory will require a doubling of the number of forestry graduates by the end of the 1990s.

The only other option is more efficient processing and manufacturing to get more products from the same about of wood. But Kennedy said indications are that world demand for forest products will continue to grow.

The best option, according to the dean, is restocking the forests and maybe even increasing the maximum annual allowable cut by using the "whole bag of tricks" known to foresters.

That means advanced silviculture (reforestation) techniques, improved insect and disease control and better trimming and pruning to bring the trees along as quickly as possible.

"We have got to practise more intensive forest management," Kennedy said. "It is the responsibility of both senior levels of government as well as private industry . . . We have simply no alternative but to do this if we want to maintain a viable forest industry in Canada."

The crisis was brought on by the provincial and federal governments over the years putting less and less money into replanting forests, despite the large amount of tax revenue the industry generates.

Statistics show that the forest industry provides jobs for 10 per cent of the Canadian workforce and 40 per cent in British Columbia. It contributed $11.4 billion to the Canadian balance of payments in 1982 compared with $5.4 billion from the mining industry and only $1 billion from the petroleum industry.

"Maybe it's as simple as, if there's a pothole in the road, everybody notices and that's got to be looked after," Kennedy said.

"But if you have to delay the restocking of inadequately restocked land for another year, or two, or three, or 10, who is going to know?"

Kennedy puts much of the blame on foresters themselves.

"We were quiescent until very recently. We weren't articulating what was required."

What also concerns the recently-appointed dean of Canada's largest forestry faculty is where the foresters are going to come from to carry out the necessary intensive management programs.

APPENDIX II

Major Elements of Land Use Legislation in Newfoundland

MAJOR ELEMENTS OF LAND USE LEGISLATION IN NEWFOUNDLAND

1.0 INTRODUCTION

Policy directives included in legislation contain similarities between Departments that may lead to conflicts over potential land use of Crown lands. This is pertinent to the Departments of Forest Resources and Lands; Rural, Agricultural and Northern Development (Agriculture); Environment; and Culture, Recreation and Youth (wildlife; recreation; parks). Alternatively, differences in policy directives can also lead to potential land use conflicts (particularly with regard to the Departments of Mines and Energy and Municipal Affairs).

The lands to which Ministerial authorities extend indicate a certain amount of priorization that may be applicable in cases of conflict over land use. However, it is uncertain how these priorities are applied in actual conflicts or conflicts over potential land use, i.e. in the planning context.

One example of this relates to the Department of Forest Resources and Lands. Their land authority is subject to the provisions of the Department of Public Works and Services Act, (s. 7(3)) and to the Department of Mines and Energy Act, (1973, No. 36, s.10).

In the former instance decision making authority in the event of a conflict over property jurisdiction rests with the Lieutenant Governor in Council (1973, No. 30 s.7(3)). The Department of Mines and Energy responsibilities are for mines, etc., and water power (rather than land and surface rights in a broad context). These Ministerial powers are those "which are not by law . . . assigned to any other minister or department of the Government" (1973, No. 36, s.7(a)).

This latter phrase is typical in legislation dealing with Departmental organization and authority. As such, it does not serve to determine precedence in a clear cut manner in issues relating to land use and designation of Crown lands for specific purposes or integrated purposes.

The definition of lands to which government authorities apply in the sectors of forestry, agriculture, and mines and energy is derived from the Crown Lands Act (RSN 1970, c. 71). Crown Lands are defined as:

> all lands within the Province of Newfoundland, except such as may be in the use or occupation of any Department of the Government of Newfoundland or of any officer or other servant thereof as such and such lands as may, before the enactment of this Act, have been lawfully set apart or appropriated for any public purposes and lands lawfully alienated from the Crown.

This differs from "land" as defined in the Department of Environment Act (1981, c.10), as follows; land is:

> real property of whatsoever nature or kind and includes tenements, hereditaments and appurtenances, leaseholds and any estate, term, easement, right or interest in, to, over, under or affecting land, including rights-of-way and works, water, water rights, water power and water privileges.

This definition of land is very similar to that contained in the Department of Municipal Affairs Act (1973, No. 28). Generally, lands and waters are treated as separate entities in terms of management of Provincial lands in the 'Crown Lands' meaning.

A similar dichotomy appears in the concepts of land as an entity and land (water) as the supporter of resources and activities.

Forest land is not defined in legislation. The application of the Crown Lands Act for forestry purposes is for the granting of rights

to cut timber. The Crown Lands Act deals similarly with land to be used for purposes of agriculture, residences, industry, and public uses, and in association with water power production (flooding of land, easements, rights-of-way).

No concept, definition or policy exists that ties these resources and activities together with the entity from which they are derived and by which they are supported.

A phrase which is used repeatedly in the legislation delegating Ministerial authorities is "the utilization, protection, conservation, management . . . and development of" some particular resource. This applies to forest resources,[1] agricultural lands,[2] water resources,[3] and wildlife.[4] Again, there is no affiliation between resource use and the potential of a land-water base to support, or contribute to the support of, these resources either alone or in combination.

The above mentioned lacunae, if rectified, might help to assist in the resolution of land use conflicts, actual or potential (i.e. at the planning phase) by stating clearly the fact that the land base itself is of value because it is capable of supporting a diversity of resource and other activities. This could in turn reinforce the value of an integrated resource planning approach. Where specific activities are regarded as incompatible on the same piece of land, more specific phases of inter-departmental government policy, including strategies for allocating land between resources, will have to be implemented.

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1 Not defined in legislation: Department of Forest Resources and Lands Act, 1973 (Amended 1979, c.49, s.5).

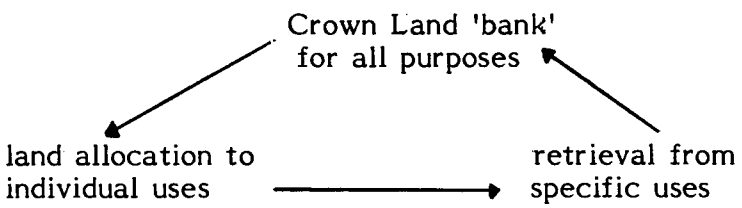
2 Not defined: (1973, No. 38, amended by 1979, c.49, s.9).

3 Not defined: (1981, c.10, s.7(a)).

4 Not defined: (1973, No. 18, amended by 1981, c.4, s.44).

Present legislation regarding land use reflects the fragmented way in which land and associated resources are viewed. This constitutes a barrier to integrated resource management. The Province has in recent years made good efforts to extend management control over its lands - but note that management here is "internal" rather than "integrated". This effort, which has been conducted in the areas of forestry, agriculture and mines has largely been guided by efforts to put unused or underused granted lands back into use for a better return of benefits to the people of the Province. This reflects an economic impetus to improve land management.

The generalized pattern of land allocation and therefore of rights to associated resources may be depicted as follows:



This process has been practiced historically on a "by individual use" basis. More recently the Inter-Departmental Committee on Land Use (ILUC) has functioned to oversee the allocation of Crown Lands applications for individual departments or for individual purposes. The extent to which there may be a direct link between retrieval and allocation for a specific use does not appear to have been documented.

2.0 CROWN LANDS

The Crown Lands Act (RSN 1970, c.71 and amendments) is the principal piece of legislation directing the allocation of lands (surface rights) to a number of uses. Priorities for any one use are not given by this Act.

2.1. Synopsis of the Crown Lands Act

Crown Land may be leased or granted for residences, agriculture or industry; timber cutting permits can be issued. Lands may be granted for water power purposes, including easements for transmission lines and flooded lands. Procedures for leasing or granting of lands are similar for residences, agriculture and industry. Where industrial siting is applied for in shore areas, special application procedures may be required. Grants for water power entail a detailed application, approval and licensing process, which include hearings. Grants of land for breeding of fish, animals and birds can be made. The timber cutting permit application procedure is unique, in that a public tendering process of the timber rights applied for is required.

Lands may be set aside (reserved, rather than granted) for agriculture, public uses, potential water power and forestry. In the latter instance, lands may be designated whereby timber cutting may take place only under specific conditions. One type of land reservation for forestry occurs when a Forestry Management Plan has been submitted for an area (such a plan is to be submitted by the Minister to the Lieutenant Governor in Council, and should not be confused with the Management Plans required to be prepared by individuals in accordance with the Forest Land (Management and Taxation) Act, 1974.

The allocation of areas for mining and quarrying purposes is governed by two separate, additional pieces of legislation. In 1970 the Crown

Lands Act was read together with the Crown Lands (Mines and Quarries) Act (RSN 1970, c.72). Section 1 of the Crown Lands (Mines and Quarries) Act stated that this Act was to prevail in the event of a conflict with the Crown Lands Act. The Crown Lands (Mines and Quarries) Act was repealed and replaced with the Minerals Act (1975-76, No.44) and the Quarry Materials Act (1975-76, No. 45). The clause stating precedence was not included in the new Acts. Other items do carry over from RSN 1970, c.72.

Lands to which the Minerals Act applies are staking lands and reserved lands "which were open . . . under the law existing prior to the coming into operation of this Act" (1975-76, No. 44, s.6(2), (3)). Reserve lands could be established within which specific rights of exploration and prospecting could be granted (RSN 1970, c.72, s.11). Claims could be staked on Crown Lands except those set aside for towns, etc., occupied by an Department of Government, or held or used for any public purpose (ibid, s.8; see also 1975-76, No. 44, s.10, amended by 1977, c.58, s.1). Section 7 of the Minerals Act allows transfer orders to be made for change of status of staking lands to reserve lands and vice versa (1975-76, No. 44, s.7). For lease lands or "lands vested in Her Majesty" a lessee can be issued a right to demise of surface lands, so that mineral exploration, mining operations or mineral processing and development "in, on or under the land covered by the lease" can be carried out (ibid, s.28).

Regulations under the Minerals Act may be made:

- to exempt from the Act certain minerals in, on or under certain lands (1975-76, No. 44, s.36(1)(c)); and
- "providing for the preparation and maintenance by the Department [of Mines and Energy] of plans identifying land in systematic or other block form areas of prescribed sizes in respect of which licenses may be issued" (1975-76, No. 44, s. 36(1)(g)).

The Mineral (Amendment) Act (1976, c.35, s.42(1)) added to the Minerals Act a mechanism whereby out-of-production mines, mineral rights and the unalienated surface rights may revert to the Crown. Conditions for extending rights or privileges given under the Crown Lands (Mines and Quarries) Act, and the expiry of those rights and privileges were set out in the Mineral (Amendment) Act (1978, c.30, s.1).

The Mineral Holdings Impost Act (1978, c.14), enforced by the Minister of Finance, applies to mineral holdings other than those held under the Minerals Act, the Quarry Materials Act or their predecessors, or under the Petroleum and Natural Gas Act. Non-payment of taxes imposed under this Act can revert mineral holdings to the Province.

The Quarry Materials Act (1975-76, No. 45) applies to "any substance used or capable of being used in its natural form for construction or agricultural purposes, and includes (i) clay, sand, gravel, stone, topsoil, soil, marl, peat and peat moss; (ii) a mineral rock or stone capable of being cut or polished for use as an ornament . . . (section 2, as amended by 1978, c. 70, s.1). Yearly permits can be issued for areas other than beaches or areas that are established quarries under the control and direction of the Department of Transport and Communications (ibid, s.5). Leases (not exceeding 20 years) can also be issued, and forareas other than those in the above section (s.6).

Both the Minerals Act and the Quarry Materials Act are administered by the Department of Mines and Energy. Ministerial powers relate to "(i) mines, minerals, coal, oil, natural gas, salt, quarries, quarry materials and beaches; and (ii) electrical power and energy . . ." (1973, No. 33, s.7). Unused, these substances do not interfere with other land uses. Their extraction at the exploratory or development level requires, at minimum, surface access, at maximum, full surface rights.

2.2 Retrieval of Alienated Crown Lands

In addition to the Acts already mentioned, there are a number of others that delineate conditions under which alienated lands can be reversed to the Crown. These Acts are summarized briefly.

The Abandoned Lands Act (RSN 1970, c.1) (Department of Forest Resources and Lands). "Whereas it is expedient that steps be taken to make such lands available for use for agriculture" [preamble], "land unoccupied for 40 years and granted . . ., leased or licensed . . . under the Crown Lands Act now in force or any former Acts relating to crown Lands or to Agriculture" revert to the Crown (s.2).

The Timber Licenses (Reversion to Crown) Act (RSN 1970, c.373) (Department of Forest Resources and Lands). Timber licenses (issued prior to 1931) for which the conditions were not fulfilled, revert to the Crown. Certain licenses are exempted from the application of this Act.

The Unimproved Lands (Redistribution) Act (RSN 1970, c.384) (Department of Forest Resources and Lands). This Act applies to specific granted lands (many of which are in western Newfoundland) which can be expropriated if required for present or future use for or in connection with (a) the development of agriculture; (b) the development of forestry; (c) the construction or extension of municipalities; (d) development of roads; (e) dedication to the public the use of existing roads.

3.0 SYNOPSIS OF NEWFOUNDLAND LEGISLATION AFFECTING LAND ALLOCATION AND USE

While the Crown Lands Act and the successors of the Crown Lands (Mines and Quarries) Act are the major pieces of legislation affecting the distribution of Crown Lands, a considerable number of Acts administered by 'user' departments exist which can be used to allocate lands. This conundrum of legislation, in the absence of integrated

land use policy and planning, can exacerbate land use conflicts (and land alienation from any one Department's perspective). The following sections highlight briefly the characteristics of legislation affecting Provincial lands.

3.1. The Development Areas (Lands) Act (RSN 1970, c.95).

This Act applies to lands for "agricultural, commercial, industrial, recreational, residential or other purposes" (s.5(1)(c)), to "provide for the orderly development and use of designated areas in the Province and to prevent speculation of lands in those areas" (1975-76, No. 18, s.2). A number of government Departments have been responsible for the administration of this Act. In 1982, An Act to Amend the Development Areas (Lands) Act (c. 25) repealed Section 1 of RSN 1970, c. 25 and substituted "the minister or ministers appointed by the Lieutenant-Governor in Council to administer this Act" as those responsible. This is perhaps indicative of the controversy that has been raised by the application of this Act, that is, the establishment of Agricultural Development Areas.

3.2. The Department of Environment Act, 1981, c.10.

Ministerial powers including the use of all surface, ground and shore waters; the allocation of the use of waters; pollution of air, soil and water originating within the jurisdiction of the province; and the alteration of any body of water and the natural movement therein" are subject to the provisions of the Act and of the Department of Municipal Affairs Act (1981 , c.10, s.20). The Minister of the Environment may define areas surrounding any public water supply (s. 25(1)), and may allow certain activities to be undertaken in these areas (s.26).

3.3. The Waters Protection Act (RSN 1970, c.394)

(The Department of the Environment, as amended 1981, c.10, Sch. B, Item 4).

Within watersheds, certain activities may require Ministerial consent (s.6).

3.4. The Veterans Land Settlement Act (RSN 1970, c.390)

(Department of Forest Resources and Lands, as amended 1979, c.49, Sch. A, Item 16).

The Minister is permitted to enter into agreements with the Minister of Veterans Affairs (Canada) (s.3) to reserve provincial lands for settlement of veterans under the Veterans Land Act, 1942 (Canada), (s.4), which are granted under Section 9(1) of The Crown Lands Act (s.7 as amended 1979, c.57, s.33). Lands not used for settlement revert to the province (s.5(3)). The Veterans Land Act, 1942, was intended to encourage veterans "to seek rehabilitation in the agricultural industry" (c.390, preamble).

3.5. The National Parks (Lands) Act (RSN 1970, c.245)

(Department of Culture, Recreation and Youth)

The Act allows for the acquisition of lands for national parks by the Minister of Culture, Recreation and Youth (s.2(a) as amended 1981, c.4, Sch.F, Item 6), or the Minister of Public Works and Services (s.2(b) as amended 1973, No. 18, Sch.B, Item 5). Such Crown Lands and lands acquired under this Act are transferred to the Government of Canada (s.3).

3.6. The Provincial Parks Act (RSN 1970, c.312)

(Department of Culture, Recreation and Youth).

The Act allows the Minister of Culture, Recreation and Youth (1981, c.4, Sch. F, Item 10) to set apart Crown Lands for Provincial parks (s.3(c)), and to control and manage Provincial parks (s.5). Included in the regulations that may be made respecting the control and management of Provincial parks are those for the preservation of

trees (s.8(a)) and the designation of certain park lands for lease or occupation for private or commercial purposes (s.8(b)).

3.7. The Wilderness and Ecological Reserves Act (1980, c.6)

(Department of Culture, Recreation and Youth)

Wilderness reserves are "areas of the Province that are at the time subject to little or no human activity" (s.4); ecological reserves "contain a representative or unique ecosystem, speciesor natural phenomena" (s.5). The procedure for establishment of reserves involves both departmental and public input to the Wilderness and Ecological Reserves Advisory Council (ss. 12 - 16, 20). This includes review of proposed management plans and regulations. Prohibited activities within a reserve, provisional reserve or emergency reserve, include the cutting or logging of trees, agriculture, mining, prospecting or claims staking; or within or without a reserve etc., [activites that may] cause an alteration in the course or amount of flow of water within a reserve (s.23). However, Section 24 allows exemptions to be made for "(c) activities prohibited under Section 23 that at the time of or immediately before the establishment of a provisional reserve are being carried out"; however, (2) at a level no greater than the "level at which the activitiy was carried out at the time of or immediately before, whichever is higher, the establishment of a provisional reserve."

3.8. The Land Development Act (RSN 1970, c. 197)

(The Department of Forest Resources and Lands, as amended 1979, c. 49, Sch. A, Item 10)

The Act allows tracts of Crown Lands to be reserved "for the purpose of settling persons or communities upon the land" (s.3). Licenses and leases include provisions that settlers adhere to the development area plan (submitted by the Minister) for land clearing, cultivation and maintenance of woodlots (s. 29(a)), and for settlers to "follow the technical instruction of the manager of the land development area and the agricultural officer . . . for the district (s.29(b)).

3.9. The Environmental Assessment Act (1980, c.3)

(Department of the Environment)

This Act does not affect land allocation per se, but it can condition or prohibit certain activities occurring on land and water. "Environment" includes air, land or water; plant and animal life (s.2(e)(i), (ii)); "Land" includes enclosed land, land covered by water, subsoil, and all matter beneath the subsoil (s.2(j)). The Act applies to any undertaking carried out by any person unless exempted by the Act or the regulations. Exemptions can be made under the Act, "weighing public interest" against the injury, damage or interference that may be caused any person or property by the application of this Act to any undertaking (s.36).

Regulations for this Act are still in draft form.

3.10. The Department of Municipal Affairs Act (1973, No.28) (as amended 1981, c.4, s.35).

Ministerial powers relate to municipal affairs, local government, urban and rural planning and development, and the provision of water services to unincorporated communities (s.7(a)).

Appropriation and acquisition of "lands, water, water rights and water privileges or works" is provided for (s.25) (it is not evident how this may affect alientated or unalienated Crown Lands).

3.11. The Municipalities Act (1979, c.33)

(Department of Municipal Affairs)

Towns (ss. 3 - 12), communities (ss. 251 - 258), and regions (ss. 297- 303) may be established, amalgamated and disestablished, and their boundaries altered. The preparation of a feasibility report is required for any of the above (ss. 9, 251, 303); public hearings are required when such apply to towns and regions (ss. 9 (3); 301(3)). Local Service Districts and Committees can be established by order of the Minister (ss. 629 - 634).

Councils may, subject to the Department of Consumer Affairs and Environment Act, 1973 (now the Department of Environment Act, 1981),

"construct, acquire, establish, own and operate" public water supply, sewerage and storm drainage systems. Ministerial approval is required if these systems are outside the council area's boundaries. Councils may "(a) acquire any waters required for the providing of sufficient supply of water . . . and (b) acquire by purchase or expropriation any lands adjacent to such waters to prevent pollution of those waters" (s. 154(1), (2); see also s. 262; ss. 304 - 306).

Likewise, subject to the Department of Environment Act, 1981, "Council may alter or divert any water course, whether publicly or privately owned, within the town . . ." (s. 159(1)). Similarly, Councils may make regulations respecting the control and management of the water and sewerage systems, storm drainage systems and the water catchment area. Those regulations to prevent the pollution of any waters, within or outside the town, used by or in the possession of the Council for the provision of the town water supply or necessary for the future use of the town are to be made in accordance with the Department of Environment Act, and may "prohibit, restrict, or [make] subject to the approval of Council (i) the cutting of timber, or (ii) the erection or establishment of any building, structure or work on, in, over or under any land or water within the water catchment area providing the town water supply, whether the watershed is wholly or partially within or outside the boundaries of the town". Regulations for outside the town require Ministerial approval (s.161 (1)(a); (2); see also s. 262; ss. 304 - 306).

The powers of Local Service District committees are less elaborate than those of Councils, but still include acquisition etc. of a public water supply system and regulation thereof (s. 635). The Minister may make regulations "prohibiting and controlling the use of any source of water considered dangerous to public health" (s. 643(f)). With Ministerial approval, (or the Minister on behalf of) the Local Service District Committee may "acquire by agreement or expropriation, land, water, water rights, water privileges or works" (s. 644).

3.12. The Forest Land (Management and Taxation) Act (1974, c.59) and its amending Act, The Forest Management Clarification Act (1977, c.67).

As amended, this Act is intended "to encourage good husbandry of the forest resources of the Province by a tax arrangement that benefits persons who manage their forest lands" (1974, c.59, s.2, amended by 1977, c. 67, s.3).

The lands to which the Act applies are areas (of 120 hectares or more) defined in any grant, licenses, etc., conferring rights therein that were issued prior to January 1973 (1974, c. 67, s. 2(g), repealed and substituted by 1977, c.67, s. 2(1)). Areas exempted from the Act include the cities of St. John's and Corner Brook; Crown Lands for which timber rights have not been granted; Crown Lands for which timber rights have been conveyed for a year or less, or for more than one year "in consideration of the payment of any royalty, rental . . ."; and those which are specifically excluded by the regulations (1974, c.59, s. 3(1), (2), repealed and substituted by 1977, c.67, s.4).

The application for a Certificate of Managed Land includes a document referred to as a Management Plan. (This application and documentation are prepared by the leaseholder). The Management Plan sets out in "systematic detail" the method for achieving sustained forest production, the operating program of forestation, etc. (1974, c.59, s.4).

Included with the Forest Land (Management and Taxation) Regulations, 1975 (filed September 13, 1978) is a "Manual of Management Plan Requirements for the Province of Newfoundland [which are] attached for guidance only and are not part of these regulations" (N.R. 92/78, NOTE, p.6). As part of the Report (Part I of the Management Plan), the guidelines specify "following the title

page is a list of Government Departments and Agencies which have an interest in the Management Plan in relation to their own Plans. The acceptance of the Plan by these Departments is indicated by the signature of the senior administrative official" (Crown Lands, Agriculture, Tourism (Parks and Wildlife), Provincial Affairs and Environment, Mines and Energy and other Government Departments) (N.R. 92/78, p.7).

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