

FOREST RESOURCES COMMISSION

THE FUTURE OF OUR FORESTS

EXECUTIVE SUMMARY

A.L. (Sandy) Peel, Chairman

APRIL 1991

Forest Resources Commission

700 - 747 Fort Street

Victoria, B.C.

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FOREST RESOURCES COMMISSION

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April 15, 1991

The Honourable Claude Richmond
Minister of Forests
Parliament Buildings
Victoria, B.C. V8V 1X4

Dear Mr. Richmond:

You asked the Forest Resources Commission to enquire into and provide you with advice on four specific matters respecting the forests of British Columbia. The Commission has completed its review of these matters in accordance with the Terms of Reference given to it and, herewith, respectfully submits its first full report.

Yours sincerely,

A. L. (Sandy) Peel
Chairman

Enclosure

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1. INTRODUCTION

A little less than two years ago, the British Columbia Forest Resources Commission was asked to examine the state of the province's forest land base and recommend improvements to the way it is managed.

It was a daunting task. The forests, the lakes, the rivers, the mountains — they are the heart and soul of the social and economic fabric of this province. Everyone in British Columbia has a stake in their welfare, and everyone is keenly interested in improving the way the activities that impact upon them are managed. Thousands talked to us — either directly in the many forums and public meetings held throughout the province, or in written submissions. All of us on the Commission are grateful for their contribution.

The messages they gave the Commission were as complex and varied as the people themselves, but one theme underlined virtually everything we heard — the status quo is not good enough. The way the forests and their many values are currently being managed by government and industry is out of step with what the public expects. It must change.

Driving the current level of dissatisfaction is a dramatic shift in society's values. Once valued only for their economic worth, the forest resources now represent a much wider range of values — aesthetic, environmental, social, spiritual, and many more. That shift in values underlies much of the conflict that has dominated the debate over forest resources in the last few years.

Very early in the exercise, the Commission recognized that any changes in the way the forests are managed to reflect a full range of values will depend on an all-encompassing vision of what we want from our forests and what are acceptable practices to get us there. That Vision Statement is a simple statement of principle that has led to many recommendations for change.

The key phrase in the Vision Statement — and you will see it used again and again in the rest of this report — is **enhanced stewardship**. The Commission believes that the public's desire to see a full range of values reflected in our forests can be realized in one of two ways. Either large portions of forest land can be withdrawn from commercial exploitation to protect and preserve certain non-timber values, or it can all be managed more effectively to maintain or even improve the production of all values. We have concluded that the greatest benefit to all British Columbians will not come from significantly reducing commercial activity in our forests, with the resultant loss of jobs, negative community impact and reduced government revenue. Rather, it will come from managing our forests better for all values

Enhanced stewardship means recognizing that in addition to timber values, values such as cattle production, water quality, recreation, wildlife, wilderness, and aesthetics should all be maximized through proper forest management. It means making choices about the relative importance of any one of those values with a full understanding of the impacts on the others, and in a way that not only preserves them, but enhances them. It means understanding the full range of economic and social costs and benefits associated with any decisions about resource management.

This shift from managing primarily for timber values to managing for all values requires significant change in how we plan, manage, and finance the activities that are carried out

in our forests. The components and resulting recommendations outlined in the following chapters are like pieces in a jigsaw puzzle — they all come together to form one vision of enhanced stewardship. Leave some pieces out, and the vision is not complete.

British Columbians have an opportunity — a great opportunity — to grasp the vision of enhanced stewardship for our forests so that successive generations may benefit from and enjoy the full range of values that our forests can provide.

A handwritten signature in black ink, appearing to read 'A. L. Peel'. The signature is stylized with a large, looped 'P' and a trailing flourish.

A. L. (Sandy) Peel
Chairman

2. VISION STATEMENT

The forests of British Columbia have become a focus of economic, environmental and social conflict.

Long taken for granted as the engine driving the economic growth of the province and providing financial and material benefits for us all — they have suddenly been overtaken by a dramatic shift in values. People now recognize a wide range of forest values that have little to do with economics or material wealth. Such things as pristine wilderness, environmental protection, water quality, recreation — and a host of others — are seen as equally important to economic security. Many feel those values should in fact take precedence over the traditional resource values that have served the province so well.

As with any significant shift in values, there is conflict. Those who defend the old values point, with a large body of evidence to support them, to the tremendous wealth created by resource extraction. They argue convincingly of the need to continue down that path, and speak confidently of our ability, through prudent forest renewal practices, to maintain that industrial capacity. Those who place new values ahead of the old argue, with equal conviction, of the need to halt the commercial exploitation of the forests and to preserve what hasn't been liquidated before it is too late. They put environmental quality and preservation ahead of economics.

There is truth in both arguments. What has been lacking is any real effort on the part of society, in general, to discover if there is a formula for forest management that will reflect both points of view. Is there a way to chart a course that will recognize and encourage the new values while maintaining the benefits of the old? Hence the conflict.

The Forest Resources Commission believes there is a better way. After hearing the views of thousands of dedicated British Columbians, the Commission has developed a vision of the future that provides that formula. By embracing the ethic of ENHANCED STEWARDSHIP British Columbians can achieve the full potential of all values in our forests of the future. This means intensive, integrated management for all values on the largest forest land base possible. In this way:

the forests of British Columbia will provide for the economic, environmental, social, and spiritual well-being of all British Columbians through successive generations.

Acceptance of this vision requires change. We must now cooperatively manage our forests in a truly integrated fashion that considers all the values that society deems are important. Land use must be planned, and decisions on its use based on accurate and complete information about what it can biologically produce. Such comprehensive management requires a stable financial commitment. All points of view must have access to the process. Perhaps most important of all, people must be prepared to participate fully in the decision making process.

The forests of British Columbia are unique and have the potential to provide us all with lifestyles that reflect a tremendous range of values — perhaps even values as yet undiscovered. The vision outlined here, and detailed in the following sections of this report, will be a challenge for British Columbians. But the rewards of meeting that challenge are immense.

3. LAND USE PLANNING

A Blueprint for Diversity

The effective use of land and its resources has, from the beginning of time, shaped our progress and evolution. With that in mind, the Forest Resources Commission believes that any effort to protect and enhance the many values represented by British Columbia's land base must begin with a comprehensive Land Use Plan. From that plan, and fully integrated with it, will flow a variety of management systems designed to make the best use of all those values.

Two important factors have now combined to require a new, more integrated approach to land use planning. Through a systematic awarding of resource rights over the last century, nearly all the provincial land base has been allocated to one or more forms of specific resource use. And social values have changed dramatically.

The Forest Resources Commission has concluded that a comprehensive Land Use Plan is required to accommodate that new, fuller range of values, and to allow the introduction of additional values as society changes its outlook. The Land Use Plan will be a blueprint for managing this change.

The Commission has also concluded that the Land Use Plan must apply to the entire province.

The Forest Resources Commission firmly believes that the Land Use Plan will provide the best opportunity for the people of British Columbia, through their elected government, to establish the goals and priorities essential for the protection and enhancement of all values associated with the land and the resources it holds.

The public has a role to play in the planning process at key points in the proposed land use planning structure.

The process envisaged for the Land Use Plan must be open, neutral and balanced. The Forest Resources Commission believes a restructured Ministry of Crown Lands, with a mandate to ensure the optimum balance of activities on all provincial Crown lands, should coordinate all land use planning functions. The Forest Resources Commission has concluded that a thorough review is required to identify whatever legislative amendments will be necessary to ensure that all government ministries are fully supportive of the new process and that their involvement is rationalized.

The Forest Resources Commission recommends that:

- 1. the Government of British Columbia introduce comprehensive land use planning for the total land base of the province;**
- 2. the government enact legislation giving a restructured Ministry of Crown Lands a broader mandate to ensure the optimum balance of activities on all Crown lands and to implement and administer the Land Use Plan;**

3. **the government review and amend the legislation of all ministries with responsibilities pertaining to the land base of the province to ensure both their involvement and support of comprehensive land use planning;**
4. **that public involvement be set out in legislation and cover all aspects of the planning process.**

Organization of the Planning Process

Any organizational structure designed to carry out an effective Land Use Plan in the province must take the province's geographic and demographic diversity into account. To that end, the Forest Resources Commission has concluded that a multi-tiered process for creating and implementing the Land Use Plan is required.

A Land Use Commission is proposed that will report to the Cabinet Committee on Sustainable Development through the Minister of Crown Lands. The Land Use Commission will assist in developing broad goals and objectives, provide a neutral forum for information, discussion and research on Land Use Plans, and make recommendations to government on the range of values to be considered in making land use decisions.

Detailed planning will be carried out by Local Planning Groups which report ultimately to the Land Use Commission. The Local Planning Groups, comprising professional resource staff as well as private interests and user groups, will develop the detailed plans for land use throughout the province, making assessments of values and priorities throughout.

Land Use Commission

Government must establish the values that will be identified in the plan and set goals for the Commission to meet in the attainment of these values. The Land Use Commission should have a limited number of appointments, and these should reflect a regional and sectoral balance. Legislation establishing the Land Use Commission must also provide for an independent Appeal Board to mediate and settle disputes.

Regional Planning Groups

The Forest Resources Commission believes that there may be a role for Regional Planning Groups. The Land Use Commission should decide this issue and, if necessary, determine the appropriate number of Regional Planning Groups and the land base they should reflect.

Local Planning Groups

The Local Planning Group will be responsible for assessing the technical, biological and physical attributes of the land base in order to determine its capabilities and value attributes. The Commission believes that the Ministry of Forests' existing Forest Districts provide an appropriate land base for these Local Planning Groups.

The Planning Process

The planning process will be acceptable to the public only if it is open, and is seen to be open. All levels of the planning process must use procedures that are well understood and justifiable. Reasons behind technical judgments and the information that was used to make decisions must be made available to all interested parties.

It is recommended that the Land Use Commission be given legislated authority to make decisions on land use classifications for values and uses that fall within the provincial goals. An independently-appointed, three-member Appeal Board should handle disputes among users within approved plans.

The Forest Resources Commission recommends that:

5. **a Land Use Commission be created by appropriate legislation and charged with implementing the land use planning process;**
6. **with the assistance of the Land Use Commission, the Province assess the capabilities of the land base to support particular values and then define its goals for various values within those constraints. The contribution of the various areas of the province to these goals should be refined at the local level;**
7. **the Land Use Commission report to the Cabinet Committee on Sustainable Development through a restructured Ministry of Crown Lands;**
8. **the Land Use Commission be given legislated authority to make recommendations to Cabinet on land use classifications for values and uses that fall within provincial goals. It should also develop a mediation and dispute settlement process;**
9. **with respect to areas of substantial land use classification conflict, it will be the responsibility of the Land Use Commission to determine the information that will be required to resolve these conflicts;**
10. **where resolution of specific Land Use Plan classifications cannot be mediated because of unresolved issues, the ultimate decision on use should await the completion of the province-wide Land Use Plan to determine compatibility with provincial goals;**
11. **only those land use proposals that cannot be resolved through the planning process, or that do not fall within established goals and land classifications, should proceed to Cabinet for resolution;**

- 12. legislation establishing a Land Use Commission should provide for an independently-appointed, three-member Appeal Board to adjudicate disputes among users within approved plans, and to report its findings to the Commission;**
- 13. the Land Use Commission be responsible for deciding whether or not Regional Planning Groups are needed and, if so, determine their make-up, area coverage and responsibilities;**
- 14. the Local Resource Planning Groups use the existing Forest District boundaries as their initial planning bases.**

Technical Support

Professional Staff

The Land Use Plan will require a large amount of technical support from professionals in a wide range of resource areas. The initial planning and assessment process will rely upon the professional and technical expertise that is available in government ministries and upon other knowledgeable user groups and individuals.

Inventories

Good inventory information is vital to the land use planning process. The Forest Resources Commission believes that priorities for the development of resource inventories should be determined by the Ministry of Crown Lands. Funds would be allocated among the various resource ministries based on the need for basic information. The Ministry of Crown Lands should be responsible for dealing with requests from the public for inventory information.

The Commission has concluded that the resource boundaries for inventory development must be rationalized to provide compatible land base coverage. The Ministry of Crown Lands, as the ministry responsible for land use planning, should be empowered to administer this task. Planning can start at the local level using existing information and local knowledge. The data base can be improved as the process is developed.

Land Use Classification

The Forest Resources Commission believes that the goals of the province will be best achieved through assigning the maximum amount of land to integrated use classifications. For a detailed breakdown of proposed classifications see the full report.

The Forest Resources Commission recommends that:

- 15. the Local Resource Planning Groups utilize the technical and professional expertise in existing resource ministries, as well as expertise available in private user groups and other individuals;**

16. **the budgets for the development of resource inventories be assigned to the Ministry of Crown Lands, for allocation on a priority basis among the various resource ministries;**
17. **the Ministry of Crown Lands be responsible for handling requests from the public for inventory information on all Crown lands;**
18. **the Ministry of Crown Lands take the lead in rationalizing the resource boundaries for land capability analysis to provide compatible land base coverage;**
19. **the technical land capability information that will lead to land use classifications be developed for the entire province;**
20. **the land use classifications that were developed in the Forest Resources Commission's workshops on the Options Paper form the basis for the classifications used in the Land Use Plan;**
21. **existing land use classifications for such areas as parks be reviewed in order to ascertain whether they are appropriate in view of the comprehensive review of the total provincial landscape.**

Implementation of the Land Use Plan

The basic plan can be implemented through legislative action and through the establishment of the various planning mechanisms outlined. A combination of existing inventory information and local knowledge should be sufficient to develop plans if the goals and guidelines have been determined. A two-year timetable is considered reasonable for the completion of district plans through the Local Planning Groups. The planning that is presently being undertaken by the government for parks, ecological reserves, wilderness areas, old-growth preserves, and other such initiatives must be developed in conjunction with the overall Land Use Plans.

The existence of a Land Use Commission with a mandate to administer the planning function for the entire provincial land base calls into question the need for a separate, single-function Agricultural Land Commission.

The Forest Resources Commission recommends that:

22. **a two-year timetable be established for completion of all district Land Use Plans.**
23. **the current planning for parks, ecological reserves, wilderness areas, old growth forest preserves and other similar planning activities be developed in conjunction with the overall Land Use Plan, and be considered by the Land Use Commission as part of its overall planning responsibilities.**
24. **consideration be given to absorbing the Agricultural Land Commission into the new Land Use Commission.**

4. A MANAGEMENT AND FINANCIAL STRUCTURE

"Management and finance of forest property belonging to the Province have both become intricate problems."

Report of Royal Commission on Forestry; 1910

A Framework for Enhanced Stewardship

In the past, the commercial values of the forest were the primary values to be considered. Now, other values have become at least equal to, and in many cases take precedence over, the traditional economic values of the forests. That has created two important requirements that must now be addressed. We require an administrative structure that will allow the true integration of the full range of forest values as set out in the land use plans. The structure must relate not only to the commercial forest lands of the province, but also to the non-commercial forests and range lands. We further require the means to secure stable, long-term funding that will guarantee the enhanced stewardship necessary to carry out the entire plan.

The policy and regulatory functions in a number of ministries currently representing a wide range of forest values should be grouped under one new ministry — the Ministry of Renewable Natural Resources.

Society's demands for recognition of a broader range of forest values will significantly increase the pressure on what has been the traditional commercial forest. The forests' contribution to the reflection of those values will require a firm and unassailable commitment to enhanced stewardship. As well, the commercial forest must be administered in a way that maximizes its economic potential.

The Forest Resources Commission has concluded that the province must come to grips, once and for all, with the need for an adequate funding base for forest renewal and management. The only legal entity with the broad powers needed for the job is a Crown Corporation — the Forest Resources Corporation. Established by legislation, it can collect revenue, borrow money when necessary, manage the forest and pay dividends to the government. The Forest Resources Corporation will be able to finance the stewardship requirements of the province's forests. It will report to the Cabinet Committee on Sustainable Development through the Minister of Renewable Natural Resources.

The Forest Resources Commission recommends that:

- 25. the Government of British Columbia establish a new Ministry of Renewable Natural Resources to replace the Ministry of Forests and take on an expanded role in the policy, regulation and general administration of the forest and range lands of the province;**

26. **a Forest Resources Corporation be established through legislation to finance and manage the public's commercial forest land base;**
27. **the Minister of Renewable Natural Resources be responsible for the Forest Resources Corporation.**

The Ministry of Renewable Natural Resources — Organization and Responsibilities.

The Forest Resources Commission found that at least 13 government ministries had mandates or responsibilities flowing from or attributable to the forest land base. Integrated management becomes extremely difficult with such a widespread dispersal of authority.

The Commission has concluded that those integrated use management areas (as defined by the Land Use Plan) with the potential for commercial timber production should be administered by the new Forest Resources Corporation. The new Ministry of Renewable Natural Resources should be given the mandate to manage for these key resource values on those provincial forest lands that are not assigned to and managed by the Forest Resources Corporation.

Essentially, the new Ministry of Renewable Natural Resources will handle policy and regulatory functions and manage those lands for fish and wildlife, water, forest and range functions that are not under the jurisdiction of the Forest Resources Corporation. Other ministries with responsibilities that impact on the forest land base should have their activities coordinated by a single act of the Legislature.

The Fish and Wildlife Division will provide the government with advice on management practices and goals for these values under the Land Use Plan. It will manage these values on non-commercial forest lands and on other Crown lands.

The Water Management Division will continue to be responsible for water supply management, water quality management, and flood and erosion control.

The Chief Forester will take on a new title — Provincial Forester — and an expanded role, a role seen as critically important by the Forest Resources Commission. The independence of the Chief Forester and the ethic that the Forest Service developed provided an important balance between the government, the industry and the public interest in forest management and conservation. The position and responsibilities of Provincial Forester should be structured so that the Provincial Forester is seen to be impartial and to represent all values in forest management on all Crown lands. The Provincial Forester should be required by legislation to make annual reports direct to the legislature on the state of the forests.

The Forest Resources Commission recommends that:

28. **the Ministry of Renewable Natural Resources be made responsible for policies and regulations related to the key values of timber, water management, range, recreation, and fish and wildlife. The land base managed by the Ministry will be those lands not allocated to the Forest Resources Corporation;**

- 29. the management for all forest values by government ministries be coordinated by a single act that ensures that their respective mandates are supportive of integrated resource management and enhanced stewardship;**
- 30. there be Assistant Deputy Ministers respectively for fish and wildlife and for water management;**
- 31. there be a Provincial Forester at an Assistant Deputy Minister level responsible for all forest related matters other than fish and wildlife and water management;**
- 32. the Provincial Forester assume responsibility for policy, research, regulatory staff from the Ministry of Forests and the integrated resources and conservation staff of the Ministry of Environment;**
- 33. the Provincial Forester be required to report annually direct to the legislature on the state of the forests.**

Financing Forest Resource Management: A Forest Resources Corporation

The Forest Resources Commission believes the management of the forests requires a long-term commitment with a stable source of funding. Without the financial ability to provide the necessary level of enhanced stewardship through integrated resource management to meet approved goals, the land use planning proposals will have little value.

The Forest Resources Corporation recommended by this Commission represents the strongest mechanism available to secure stable, long-term funding for enhanced forest stewardship. The Corporation should be run by a Board of Directors with no more than 15 members representing all regions and sectors.

The direct revenues that are drawn from the forests must be used to manage, renew and replace the forests for future generations. The Corporation must be given the ability to charge for all the commercial consumptive uses of these lands and receive all direct commercial revenues from resources under its jurisdiction. It should also be able to borrow against its assets — the trees.

The Commission has concluded that the cost of management for non-commercial values should be recognized and be borne by the government out of general revenue — not out of the revenues of the Forest Resources Corporation.

The Forest Resources Commission has concluded that awarding secure rights to tenure holders for individual tracts of public land will provide the most efficient means of managing the resources. The Forest Resources Corporation should be empowered through legislation to enter into legally binding stewardship contracts with private companies or individual forest resource managers. Resource managers must be accountable for their management practices, and must submit to independent audits to provide an objective assessment of their performance.

The Forest Resources Commission believes the province should now move away from administered stumpage prices towards a system of market prices determined through the

development of a province-wide log market. In essence, the province-wide log market will permit the efficient allocation of logs to their highest and best use.

The Forest Resources Corporation should eventually be required to pay a dividend to government. However, that dividend must be calculated after all the financial requirements of enhanced stewardship are met.

The Forest Resources Commission recommends that the Forest Resources Corporation:

- 34. be charged with the responsibility for such commercial Crown forest and range lands that are designated as Integrated Use Management Areas under the Land Use Plan;**
- 35. have a representative Board of Directors of up to 15 members;**
- 36. receive all direct commercial revenues from all resources under its jurisdiction;**
- 37. be empowered with the ability to borrow against its assets as represented by the standing commercial timber under its jurisdiction;**
- 38. be empowered to enter into legally-binding contracts, including stewardship contracts;**
- 39. be empowered to undertake the management of non-commercial forest values and undertake socially desirable practices for the government in return for an annual appropriation that covers costs;**
- 40. be empowered to pay a dividend to government;**
- 41. be responsible for requiring independent audits of the performance of tenure holders for compliance with Resource Management Agreements, and for having such audits conducted on its own management performance;**
- 42. assume the Operations Division, Valuation, Industry Development, Planning, and Silviculture Branches, and Inventory field staff of the Ministry of Forests, as well as most of the field staff of the Fish & Wildlife and Water Management Divisions of the Ministry of Environment;**
- 43. as part of its mandate, establish a province-wide competitive log market.**

5. TENURE

FOREWORD:

The Forest Resources Commission believes the content and recommendations contained in this chapter should be published in the form of a white paper.

Resource Tenures — Introduction

Today, the forest land base is essentially fully committed to widely varied and overlapping user groups — all with one form of tenure or another. How those tenures are awarded and integrated is fundamental to the Vision Statement's concept of enhanced stewardship of public lands.

The Role of Tenure and Timber Harvesting

The two main types of tenures in B.C. represent different philosophies of forest management. In a Tree Farm Licence, the philosophy is based on an assumption that harvesting rights approaching those of private land ownership offer the best incentive to practise enhanced stewardship and assure community stability. Forest licences issued under a Timber Supply Area follow the philosophy that "bottom line" motivated private companies are concerned, first and foremost, with timber supply and have neither the interest nor (perhaps more importantly) the skills to practise integrated forest management. The government, therefore, should take on that responsibility and ensure that it collects enough revenue from the resource to carry it out.

The award of harvesting rights through tenure had two main goals — to encourage job-creating investments in manufacturing facilities through a secure wood supply, and to provide incentives for forest companies to carry out forest renewal programs. History has shown that while the employment and investment incentives worked very well, the forest renewal incentives were much less consistent.

The Tenure System Today

The evolution of tenure has shaped not just the way forest land is managed, but the structure of the industry that holds the tenures.

At present, some 85 per cent of the Allowable Annual Cut is allocated under long-term tenures and directly controlled by companies with wood processing facilities. By comparison, forest companies in other countries control on average less than 50 per cent of the harvest. In 1975, the largest single manufacturing company controlled 13 per cent of the Allowable Annual Cut. The largest now controls 17 per cent. In the same time period, control by the 20 largest manufacturing companies has increased from 74 per cent to 86 per cent of the committed AAC.

The Pressure for Change — The Need for Flexibility

The tenure system as described above has become very rigid. There is too much concentration of control over wood supply, and there is insufficient flexibility to accommodate society's changing values. Consider these pressures:

- Increasing world demand for wood fibre has had a dramatic impact on the level of activity in the forest.
- The demand for other values in the forest has grown.
- Access to wood by new users is restricted.

A New Tenure Philosophy — Goals and Principles

The Forest Resources Commission dealt with two fundamental questions — can a tenure system achieve the enhanced stewardship requirements of the future and, if so, on what basis should the tenures be allocated?

The Commission has concluded that selling off the province's public lands is not a realistic alternative.

Forest companies want secure tenures for strictly economic reasons. Investments in manufacturing facilities are expensive and risky. Without a secure, long-term supply of wood fibre, the risk is much higher and so, correspondingly, is the cost of financing the investment.

The Forest Resources Commission has concluded that the allocation of secure tenures to companies with manufacturing facilities is essential to both maintaining a competitive forest products industry and to developing a diversity of forest management practices. Nevertheless, the Commission believes that the present concentration of holdings of tenures is too narrow and limits the types of timber management practices, as well as the potential values for which the forests can be managed.

A bigger share of the Allowable Annual Cut should be allocated to smaller tenure holders who will manage the forests with emphasis on such values as community watersheds, range, wildlife, recreation and community forests. This allocation of the cut should be only to tenure holders without primary processing facilities. These allocations will be dedicated to the development of a province-wide log market.

The Commission is satisfied a more diversified tenure system coupled with a healthy, competitive provincial log market will not harm the competitive positions of B.C.'s forest products companies.

In essence, the Commission sees a tenure system that significantly reduces the volume of timber now controlled by a relatively small number of large corporations and transfers that freed-up volume to the development of a competitive log market.

The Forest Resources Commission recommends that:

- 44. there continue to be tenures granted that specify the rights, obligations and remedies of the tenure holder;**
- 45. on the conversion of existing tenures, the amount of the Allowable Annual Cut held under tenure by companies with**

manufacturing facilities be reduced to not more than 50 per cent of the lesser of either their processing capacity or their present cut allocation, and that the wood freed up be used to create a greater diversity of tenures;

- 46. the Allowable Annual Cut freed up in (45) either be managed by the Forest Resources Corporation or reallocated to small area-based tenures managed by communities, Native Bands and woodlot operators, etc. These small tenures will be restricted to those who do not own or control processing facilities;**
- 47. timber made available by the Forest Resources Corporation and other small, area-based tenure holders in (46) be used as the basis to develop a competitive log market in British Columbia.**

Tenure Reform — How it Will Work

This section spells out the Forest Resources Commission's recommendations for tenure reform.

Area and Volume-Based Tenures

Area-based tenures provide about 25 per cent of the Allowable Annual Cut, while volume-based tenures represent 75 per cent of the AAC. Which of these two basic forms of tenure is generally appropriate should rest on two fundamental factors — the biological resource capabilities of the land, as determined by the Land Use Plan, and the best opportunity for enhanced stewardship.

The recent history of forest management on these two types of tenure made it difficult for the Commission, initially, to make a definitive statement about them. The Forest Resources Commission has concluded that if enhanced stewardship for multiple values is a primary goal of tenure allocation under the Land Use Plan, the tenure must be area-based. The very nature of volume-based tenures, where the forest company has no long-term stake in a given area of forest, virtually assures a level of stewardship no higher than required by the term of the licence.

The decision over tenure types will be a regional consideration and will depend upon the forest history; the primary values that will be managed for on each forest unit (the Land Use Plan); and the suitability of the resource base to be included in a single management unit (i.e. distance to mills, community watersheds, wildlife habitat.)

Tenures related to woodlots, community forests, and Native Indian Bands are by their nature most suited to an area-based tenure. The volume of annual cut that is represented by these tenures should be increased.

The Forest Resources Corporation, to maintain its overall flexibility in forest management, should still manage some forest lands to provide wood on a volume-basis.

The Forest Resources Commission recommends that:

- 48. wherever possible, tenures to which stewardship responsibilities are delegated be area-based;**

- 49. the Crown retain and manage, through the Forest Resources Corporation, sufficient forest lands from which wood will be available on a volume basis in order to retain forest management flexibility.**

The Transition to Area-Based Tenures

A reduction in tenured wood supply volumes for manufacturing companies, and the creation of a log market with the resulting freed up volume may initially be seen by industry as an erosion of its competitive position. With that perception in mind, the Forest Resources Commission recognizes the need to significantly increase the level of security for all forest tenures, and solidify the levels of commitment on both sides of the tenure agreement.

The Forest Resources Commission believes that the most secure form of tenure agreement for both parties is a legally binding long-term contract — a Resource Management Agreement. Such contracts provide a full measure of security for management's investment decisions and for the government's stewardship requirements — with remedies available under contract law for failures by either signatory to perform to requirements.

Manufacturing facility owners who do not want to develop or manage an area-based tenure should have the option of signing a legal contract for wood supply. These Wood Supply Agreements would, in total, provide a volume commitment equal to what the forest product manufacturer would have been entitled to in an area-based tenure.

Since the new area and volume-based tenures will incorporate the values and objectives of the Land Use Plan, the Forest Resources Commission has concluded that rollovers of existing tenures into new, more secure Resource Management Agreements and Wood Supply Agreements should await land use designation.

The Forest Resources Commission recommends that:

- 50. present area-based tenures should be re-written and new area-based tenures should be issued in the form of a contractual Resource Management Agreement with appropriate rights, obligations and remedies to give greater security to the tenure holder and to the Crown;**
- 51. a contractual Wood Supply Agreement should be developed by the Forest Resources Corporation also with appropriate rights, obligations and remedies for existing tenure holders that do not want to convert their volume-based licences to area-based tenures, or where local circumstances preclude the granting of an area-based tenure;**
- 52. the rollovers into Resource Management Agreements and Wood Supply Agreements should await development of the first Land Use Plans. This will be two years in most cases.**

Provision of Resource Management Agreements and Wood Supply Agreements

The Forest Resources Commission believes that tenures should provide the greatest security available short of outright private ownership. In return, however, the tenure holder must practise a level of enhanced stewardship that reflects the goals of the Land Use Plan. The performance should be audited and the audits monitored by a public review.

The biological and physical capabilities of the land and the range of other values being managed, as determined under the Land Use Plan, should be set out in the basic conditions of the tenure document. Management obligations and goals should be included in the contractual obligations of the tenure. Management and Working Plans should also contain contractual obligations that can be measured. Any penalties for non-performance, including the loss of tenure, should be clearly defined.

The public, as the owner of the resources, is entitled to know what management goals and obligations have been established, and whether or not those goals and obligations have been achieved. Independent audits will be subject to public review and should be performed at the tenure holder's expense. A direct relationship between performance and the retention of tenure will then be established. The Provincial Forester will have overall responsibility for these audits.

There will be a transition period as old volume-based tenures are replaced by Resource Management Agreements and Wood Supply Agreements. Existing area-based tenures (Tree Farm Licences) will be "grandfathered" in that their conversion to Resource Management Agreements will involve no reduction in area or volume. Sales or transfers of area-based tenures "grandfathered" under the new system will still be subject to surrendering to the government a 5 per cent share of the AAC as long as the tenured wood supply is still greater than 50 per cent of the AAC or 50 per cent of the mill capacity (whichever is lesser.) Once tenured wood supply falls below the 50 per cent level, the 5 per cent removal will no longer apply to sales or transfers. It is important to recognize that this "grandfathering" applies only to the tenure in excess of the 50 per cent level, and that represents only 3.75 per cent of the Allowable Annual Cut

Companies that do not want to manage an area-based tenure or where no suitable lands exist for an area-based tenure can arrange a contractual Wood Supply Agreement for a volume equal to what would have been available from the area-based tenure. Appropriate "evergreen" renewal provisions can be written in the Wood Supply Agreement.

At the end of the renewal period, companies will have no more than 50 per cent of their wood requirements under secure contractual Resource Management Agreements (or contractual Wood Supply Agreements) and purchase their remaining requirements on a competitive basis from the log market.

The Forest Resources Commission has concluded that the Resource Management Agreements should be for a term of 25 years, renewable every 10 years, based on management performance. There will be no volume reductions on sale or transfer of the Resource Management Agreement, and loss of tenure will occur only if the licence holder fails the management audit. Wood Supply Agreements should be for a term of 15 years, renewable every 5 years subject to satisfactory performance.

The tenure documents should also contain provisions for compensation for the removal of timber harvesting rights from land that is redesignated in the future to other uses.

In recommending compensation for a loss of contractual tenure rights, the Forest Resources Commission is implicitly recognizing the private cost of changes in social values.

The increased security of tenure provided by contractual agreements and the industry's ability to capture the results of increased investment will establish the appropriate conditions for enhanced stewardship.

The Forest Resources Commission recommends that:

- 53. management goals and objectives derived from the Land Use Plan be included in the area-based Resource Management Agreements;**
- 54. five-year Management and Working Plans reflect the management goals and objectives contained in the Resource Management Agreement and those contractual obligations that can be measured;**
- 55. there be an obligation on the tenure holder to have performance verified by independent audit as specified by the Provincial Forester, and the results made public;**
- 56. the management performance of the Forest Resources Corporation be subject to independent audit, and the results made public;**
- 57. holders of area-based tenures that exceed 50 per cent of the lesser of either their manufacturing capacity or their harvesting quota be permitted to convert their Tree Farm Licences into the more secure area-based Resource Management Agreements with no loss of area. These tenures should still be subject to a 5 per cent reduction in volume when the tenure is either sold or transferred, until reduced to the 50 per cent level or lower;**
- 58. tenure holders who have less than 50 per cent of the lesser of either their manufacturing capacity or their harvesting quota in area-based tenures be permitted to convert their existing licences to area-based Resource Management Agreement, subject to wood availability and the other conditions discussed in this chapter. These tenures should not be subject to the 5 per cent reduction in volume upon sale or transfer;**
- 59. tenure holders who do not want to take on the management obligations connected with an area-based tenure, or where no suitable lands exist for an area-based tenure, be permitted to convert their existing tenures to a contractual "evergreen" Wood Supply Agreement equal to the lesser of 50 per cent of their existing manufacturing capacity or their total harvest quota;**
- 60. existing tenures that are not converted to either an area-based Resource Management Agreement or a contractual Wood Supply Agreement be allowed to expire at the conclusion of their present term;**

- 61. Resource Management Agreements be for a term of 25 years and renewable every 10 years, subject to satisfactory performance as determined through independent audit;**
- 62. Wood Supply Agreements be for a term of 15 years and renewable every 5 years, subject to satisfactory performance as determined through independent audit;**
- 63. penalties for non-performance, as measured by contractual standards and verified by independent audit, be detailed in the agreements, including conditions for loss of tenure;**
- 64. the terms and conditions of compensation for redesignations of land out of the area-based tenure, changes in uses and changes to agreed management plans be detailed in the tenure contract. These terms and conditions should include compensation to all directly affected contractors, employees and/or other tenure holders;**
- 65. the results of private investment in intensive silviculture and forest management, above the level of basic silviculture, not be subject to stumpage or other government charges on Resource Management Agreements, and be considered the property of the tenure holder;**
- 66. the tenure holder be reimbursed by the government for costs incurred in managing for non-commercial renewable resource values where such management is a requirement;**
- 67. the Forest Resources Corporation be reimbursed by the government for costs incurred in managing for non-commercial renewable resource values.**

Other Timber Harvesting Licences

There was strong support for other small, area-based tenures such as community forests and tenures managed by Native Bands. The Commission favors the gradual expansion of tenures such as these, as it believes they will lead to overall greater diversity in tenure holders. However, the Commission heard much dissatisfaction with category 1 and 2 small business sales, and believes they should be phased out.

The Commission heard repeatedly that the absence of a truly competitive log market killed many innovative value-added manufacturing proposals before they could get off the ground. This led the government to make some wood available through volume-based value-added sales. The Commission views this as a successful program that should be continued.

All of these new tenures should be tailored to the site and species in each region, and should be big enough to make them economically viable for their operators. The present size restrictions for woodlots (400 hectares) and regulatory requirements should be altered to reflect the legitimate requirements of the tenure holder.

The Commission believes that while regulations to ensure good forestry practices are necessary, the whole administrative requirement currently placed on woodlot operators should be reviewed and simplified.

Pulpwood Agreements have been used recently to provide fibre — usually from under-utilized species — for such ventures as particle board plants. This is not an appropriate use of Pulpwood Agreements and another form of tenure, such as a Wood Supply Agreement, should be used.

The Forest Resources Commission recommends that:

- 68. category 1 and 2 of the small business program be phased out as the new tenure system is introduced. As wood then becomes available, it should be reallocated to small, non-processing area-based tenures managed by woodlot operators, communities, Native Bands, etc. or managed by the Forest Resources Corporation as is appropriate;**
- 69. the volume-based allowable cut presently allocated under Section 16.1 of the Forest Act to the Small Business Forest Enterprise Program be converted to area-based Resource Management Agreements where possible;**
- 70. area-based tenures that are not tied to manufacturing facilities should not be subject to size limitations but rather be determined on a site by site basis and be sufficient in area to be economically viable;**
- 71. The administrative burden presently placed on woodlots be reviewed, altered and simplified to reflect the needs of the expanded small woodlot program;**
- 72. no new Pulpwood Agreements be issued and existing agreements be allowed to expire at the termination of their contract period.**

Tenures for Range Lands

The Commission believes that, where practical, tenures for grazing should be area-based and managed through a Resource Management Agreement. The Resource Management Agreement will reflect the renewable resource values identified through the Land Use Plan, and provide for the integrated management of those values.

The Ministry of Crown Lands is currently responsible for grazing leases on leased Crown land and should retain that responsibility.

Just as the fruits of intensive forest management go to the tenure holder making the forestry investments, so too should the fruits of enhanced forage production go to the tenure holder making the range investments. Likewise, range tenures should have well-defined performance criteria written into the agreements and penalties for non-performance, up to and including loss of tenure.

The Commission sees no need to alter the current structure of range tenure, as there is already sufficient diversity among tenure holders.

The Forest Resources Commission recommends that:

- 73. area-based tenures for range lands reflect the same terms, conditions, rights and obligations as timber-based Resource Management Agreements, with whatever changes are necessary to recognize the structural differences between the forest and range industries. The Ministry of Crown Lands should continue to issue and record grazing leases.**

Other Renewable Natural Resource Tenures

Several tenures, permits and licences available to resource users overlap timber harvesting tenures. Other tenure holders should have the same rights, obligations and remedies as those of timber harvesting tenure holders.

The Forest Resources Commission believes that timber harvesting tenures must respect other forest uses. Rights, obligations and remedies can be provided to other resource users on the same land through tenure agreements. This will yield a stratification of tenures and will strengthen all users' and tenure holders' rights.

The Commission has concluded that the government should review the variety of user permits on forest lands for their suitability for conversion to compatible area-based tenures.

The Forest Resources Commission recommends that:

- 74. the government review the variety of user permits and licences that are issued on Crown forest lands to determine the appropriateness of converting them to contractual area-based tenures.**

Sale or Transfer of Renewable Resource Tenures

The Forest Resources Commission believes that the public should share equally in any "windfall" appreciation in the value of the tenure due to economic conditions. This could include, for example, real price increases in the value of standing timber due to scarcity or increased market demand. Half of any such 'non earned' asset appreciation should be returned to the Forest Resources Corporation on the sale or transfer of a tenure.

The Forest Resources Commission recommends that:

- 75. the Forest Resources Corporation receive a 50 per cent share of any windfall gains realized from the sale or transfer of timber harvesting tenures.**

6. FINANCIAL AND ECONOMIC CONSIDERATIONS

Introduction

Assigning financial values to the forest resource and the multitude of activities that take place within it, is a daunting task. With that in mind, the Forest Resources Commission had several studies undertaken to produce the most reliable professional assessment possible of these values. Out of those studies, the Commission reached the following general conclusions:

- The forest industry is the most significant economic force in the province and will likely remain so for the foreseeable future. It should in no way be seen as a "sunset" industry. Its impact varies dramatically from community to community, ranging from minor in some to overwhelming in others.
- Although there is no generally accepted means of determining the value of the standing timber in the commercial forest, there are strong indications that it is probably significantly higher than is reflected by the stumpage paid to the provincial government.
- It is possible to weigh the effects of different forest management goals and techniques on all values in the forest.
- Values for non-industrial activities — recreation, wildlife, etc. — cannot be reliably quantified with existing information.

Income and Employment Impacts of the Forests

Estimates of the economic impact of the forests are heavily weighted towards commercial or industrial uses. The Forest Resources Commission determined that there was little to be gained by trying to provide an all encompassing value estimate for the forests in all uses. Instead, the Commission worked with the Planning and Statistics Division of the Ministry of Finance and Corporate Relations to develop an estimate of both the employment and Gross Domestic Product (GDP) contributions of the forestry sector to the province. As well, estimates were made of the importance of the forest sector to individual, representative towns in British Columbia.

In 1989, the forest sector's total (direct, indirect and induced) contribution to the provincial economy (GDP) was 16.9 per cent. On the same basis it contributed 14.4 per cent of total employment. This should not be confused with the often used phrase "the forest industry contributes 50 cents out of every dollar in B.C." This is derived from the fact that the forestry sector contributes 50 per cent of manufacturing shipments. However, manufacturing shipments are only one component of the GDP. The overall contribution of the forest sector to the provincial economy is significantly less.

The use of these numbers can produce another, perhaps more dangerous, set of faulty conclusions. For example, a 10 per cent reduction in logging and forestry activity would

produce a net effect of less than 2 per cent on the provincial GDP. But it would have a devastating impact on the small communities where the 10 per cent reduction actually takes place. It highlights the fact that there are two economies in British Columbia and they are split along urban/rural lines. The government developed estimates of the impact of local changes in forestry activity in several towns in British Columbia.

Employment Dependence on Forestry

Williams Lake	55.6%
Kitimat	22.5%
Castlegar	67.0%

The Forest Resources Commission also heard concerns about corporate concentration in the B.C. forest industry. While some individual forest companies are large compared to other corporations in the province, they are not large when compared to their international competitors.

The Commission has concluded that the wood processing industry must be allowed to evolve into whatever structure is needed to maintain its ability to compete in world markets. That may mean further amalgamations of wood processing facilities and a further concentration of existing processing facilities. Corporate concentration among tenure holdings, however, is a different matter. The Commission believes that its recommendations for the diversification of tenure holdings and the establishment of a viable provincial log market will ensure the maintenance of a diverse, competitive forest products industry.

Other Renewable Forest Resource Values — an Economic Point of View

As stated previously, applying the standard forms of economic analysis to the broad range of values society now recognizes in its forest land base does not produce a reliable estimate of their worth or their contribution to the provincial economy. However, this should in no way diminish their importance in land use planning and forest management, and in carrying out the Vision Statement's concept of enhanced stewardship.

Tourism, Ranching, Wildlife and Recreation Values

Tourism Canada estimates that tourism contributes 6 per cent of GDP in British Columbia. Recent analysis shows that forest-related tourism and recreation, such as adventure travel, fresh water sport fishing, wildlife viewing and hunting, are all growing activities. Ranching also provides a significant contribution to the overall economy of the province. However important all these activities may be, they are small when compared to the total economic impact of the forest sector.

An Asset-Based Approach to the Value of the Timber

The Forest Resources Commission asked consultants to examine alternative approaches to measuring the 'value' of the timber in the commercial forests. This asset-based approach used three indicators to determine the underlying value of the timber — provincial stumpage rates, private market log sales and sales of tenure.

In essence, the present stumpage return to government, using an industry rate of return on equity of 13.5 per cent, suggests a value of timber assets in British Columbia of \$1.14 billion.

There are some market mechanisms in place that, imperfect as they are, at least provide an opportunity to make a market calculation on the value of standing timber. Using the values represented by these private transactions, the consultants produced a value of the asset base of between \$4.7 billion and \$8.8 billion.

Clearly, the asset base generated through private transactions is markedly higher than the asset base generated through provincial stumpage. This suggests that industry is capturing a much higher value from the forests than is the government. Stumpage payments are not capturing the full value of the resource. It is the view of the Forest Resources Commission that this 'gap' in valuation should be closed.

Management Options for a Forest Estate

A variety of management options exist that are both economically feasible and sustainable through time. To demonstrate the broad variety of management options possible and provide an example of the potential system of accounts, a 'pilot study' for a forest estate was prepared for the Forest Resources Commission. This study analyzed the impact of differing silviculture regimes, different utilization standards, extended rotation periods, and alternative harvesting methods. It put those variables together with management goals and objectives that vary among the full range of values.

What the study demonstrates clearly is that there are all kinds of options for society to consider, and selecting any one always has benefits and costs.

A System of Accounts for a Forest Estate

The pilot study conducted for the Forest Resources Commission on a forest estate established a system of accounts that could be used to 'track' management performance in a business plan format. The study established a format that would be useful in auditing 'tangible and measurable' results from stewardship activities.

A Province-wide Log Market

British Columbia's timber harvesting and wood processing industries were established upon a competitive log market. By the mid-1950s, it was clear that the number of small and large independent loggers was steadily declining. Years later the trend was still going

strong, and two things became clear: the competitive log market would ultimately disappear if the trend towards total integration were not stopped, and its usefulness in providing competitive stumpage price calculations was open to challenge.

The Commission believes that the establishment of a province-wide log market represents the only way that the province can realize full value for its resources, and generate the income required to fulfil the enhanced stewardship role of the Vision Statement.

Wood Fibre Exports

Log exports have been restricted in British Columbia since 1912 through legislation in the Forest Act. The absolute level of log exports in the province has historically remained low, particularly in comparison to exports from the U.S. Pacific Northwest States and Alaska.

The present restrictions on log exports go a long way towards ensuring domestic availability of logs while providing an 'outlet' for surplus logs. The development of a province-wide log market will substantially improve the prospects of exports being further reduced by a more efficient market distribution mechanism.

Provincial statistics on log exports are misleading, however. While log exports have represented a small proportion of the total provincial Allowable Annual Cut, they can represent a significant proportion of the cut in the area in which they are concentrated. The Commission believes it is in the long-term interest of British Columbia that as much wood as possible be processed within the province.

7. FOREST RESOURCE INVENTORY AND ALLOWABLE ANNUAL CUT

Inventory of Renewable Forest Resource Values

Sadly, the state of renewable forest resource inventories in this province is inconsistent at best, and woefully inadequate at worst. Planning must go ahead, and decisions must be made using the best information available. But the Commission believes that the current state of inventory information is a disgrace, given the importance of all renewable forest resources to the people of British Columbia.

The province's renewable forest resource inventories suffer from an uncoordinated approach by the several ministries and agencies, both federal and provincial.

Ten provincial ministries and at least two federal government departments maintain a wide variety of resource inventory data. There have been attempts in recent years to rectify the inconsistencies and inadequacies in this fragmented system and implement a more coordinated approach to inventory collection, but with only limited success.

An overall master plan is essential for the development of the inventories of renewable forest resource values. These inventories should be developed within a framework that ensures all data essential to forest resource planning is collected. The inventories must also satisfy the needs of resource user groups, and the public must have ready access to the information contained in them. The Forest Resources Commission has concluded that a Provincial Forest Resource Inventory Committee is needed to plan and guide this process. The Committee would report to the Minister of Crown Lands and would develop general objectives and standards and establish inventory priorities.

The Forest Resources Commission recommends that:

76. **the Government of British Columbia undertake a commitment to complete inventories for all renewable forest resource values using standardized compatible systems;**
77. **a Provincial Forest Resource Inventory Committee be established to plan and develop a program for these inventories.**

Timber Inventories

The importance of accurate and complete inventories of the trees growing on provincial lands, the different productive capacities of those lands, and the reliability of future growth forecasts cannot be overstated. As the industry moves from harvesting mature, natural forests to growing "second growth" managed forests, the reliability of inventory information becomes even more important. Adding to the importance of this information is the fact that changing social values are demanding more from the forests than commercial timber. To make intelligent choices, society must know what resources are there, and what the physical and biological capacities of the land are.

After reviewing several diverse timber inventories, the Forest Resources Commission

concluded that the provincial timber inventory is outdated and weak in several aspects. The current inventory cannot reliably estimate the volume of specific timber stands, nor can it provide dependable estimates of site quality and growth potential. As a result, planners and forest managers have limited confidence in the information they must use as a basis for planning and assuring enhanced stewardship.

A more accurate timber inventory must be completed province-wide over the next 10 years to give land use planners a reliable information base. Problem areas, and those areas under pressure already, should be given priority and completed within 5 years.

The Forest Resources Commission has concluded that a Timber Inventory Task Force, comprising a mix of public and private technical experts and inventory users, be formed to direct the development of the new inventory program. The task force will be responsible for setting technical standards and determining priorities for completion within a 10 year period. In general, the first priority for attention should be areas where overcutting is suspected. The task force should also complete a critical review of the current re-inventory program being conducted by the Ministry of Forests. This review must assess the technical merits of the re-inventory program and recommend what components to include in the new inventory. It should be completed within 12 months. This Timber Inventory Task Force would report to the Provincial Forest Resource Inventory Committee.

After reviewing inventory data, the Commission concluded that data on stand dynamics and growth rates is woefully inadequate. As a result, reliable computer projections about future timber yields in these forests cannot be generated. Users are unable to predict with confidence future harvest levels, and they can't reliably predict the impact on yield of various silvicultural treatments.

The Forest Resource Commission recommends that:

- 78. an updated provincial timber inventory, complying with new standards, be completed over the next 10 year period;**
- 79. the timber inventory update must initially focus on problem areas, and complete them within the next 5 years;**
- 80. a Timber Inventory Task Force, comprised of technical experts from private and public resource users, be established to design and plan the development of an accurate timber inventory;**
- 81. the Timber Inventory Task Force should immediately conduct a critical review of the present Ministry of Forests Re-Inventory program, and report within the next 12 months;**
- 82. the new inventory program must be designed and funded to provide reliable statistically sound data that can be used by local resource planning groups (and other resource interests);**
- 83. the new provincial timber inventory should be structured on land management units with boundaries approximating the supply blocks within Forest Districts. The same boundaries should be used for the inventories of all renewable forest resource values;**
- 84. a system for continuous updating of the provincial timber inventory must be established;**

85. **a growth and yield program to quantify the growth rates of the second growth forests, for all commercial species in the province, must be established on a systematic, priority basis;**
86. **inventory designs vary to suit the objectives of the intended use.**

Allowable Annual Cut Determination

The Forest Resources Commission heard a great deal of concern that the provincial forests are being overcut — that the present level of harvest is not sustainable in the long run.

The current timber endowment consists largely of mature trees that have a greater volume of wood at harvest than will the “second growth” trees that replace them. Current timber management regimes and yield calculations are not designed to replace those current old growth inventories with an equal volume of wood. That means there could be a “falldown” of the inventory volume. This has led to a perception that B.C.’s forests are being overcut.

The real problem is that the information used to calculate these yield results is very unreliable. Yield analysis is often completed with an inconsistently defined estimate of the working forest area, outdated and unreliable inventory estimates of volume and production capacity, and growth and yield forecasts that do not reflect the actual growth rate of the forest. There can be only limited confidence in the yield analysis results. In other words, it is possible that the AAC determination is too high. It is equally possible that the AAC determination is too low.

The Forest Resources Commission recommends that:

87. **the Allowable Annual Cut of Timber Supply Areas or Tree Farm Licences not be raised or lowered until and unless new timber inventory data and subsequent yield analysis clearly justify an adjustment; except in those obvious cases where current information strongly support a change;**
88. **the Allowable Annual Cut for Timber Supply Areas and Tree Farm Licences be determined within the context of the forest management goals for all values on the management unit;**
89. **the yield analysis task be changed to become an integral part of the process of developing a forest management plan rather than used solely to determine Allowable Annual Cut;**
90. **Forest District Planning Committees be formed with the responsibility to prepare District Forest Management Plans. The representation must include technical specialists and the public;**
91. **the yield analysis task be decentralized and become the responsibility of the Forest District Planning Committee.**

8. FOREST PRACTICES

Introduction

The clash between the traditional economic values of resource development and the new, much broader values is most evident in public attitudes towards timber harvesting and other related forestry practices.

As the enhancement of all forest values through the practice of land use planning, renewable resource management, and tenure allocations all require a coordinated approach, so too, does the practice of determining timber harvesting techniques. An ecologically sound and socially responsive forestry is now required.

The Need for Established Practices

Much of the public's confusion over what is or isn't good forestry can be traced to the fact that there is no universal code of practice that covers all the aspects of harvesting and silviculture.

There is a need for a single code that governs all the elements of good forest management, such as:

- the choice of clearcutting or selection logging as a harvesting system within the silvicultural prescription.
- the size, distribution and timing of clear cuts.
- approaches to be taken during harvesting to consider a wide range of other values, such as water in community watersheds, estuaries, streams and lakes, wildlife habitat and migration corridors, areas of high visual or recreational value, special soils or soil cover areas, and slope instability.

The Forest Resources Commission has concluded that while many of these standards exist in different parts of different statutes, it would be valuable to amalgamate them in one code of practices. The general provisions of this code should recognize the need for site-specific determinations of actual procedures. A new, stand-alone Forest Practices Act is the appropriate mechanism for this amalgamation.

The Forest Resources Commission recommends that:

- 92. a single, all-encompassing code of forest practices be established through the introduction of a Forest Practices Act.**

Biological Diversity

British Columbia has one of the most ecologically-diverse landscapes in the world. It includes greater ecological diversity than many areas that are significantly larger. Tree species diversity varies greatly from one part of the province to another. While coastal forests boast a large number of tree species, Interior central regions have fewer, and the areas of the northeast have fewer still. While B.C. has a lot of different ecosystems in

its different regions, the biodiversity of each ecosystem in itself is relatively low by world standards. While those statements are related to trees, the biodiversity of other plant, animal and insect life generally corresponds to the number of tree species.

The Tree Crop Production Cycle: Silvicultural Systems

To suggest that any particular harvesting system is all good, or all bad, fails to take into account many interdependent factors. Harvesting systems must be selected after consideration of all these factors and modified to take into account many other variables, including the non-commercial values society now feels are important.

Tree crops can be grown under one of two major types of silvicultural system: even-aged and uneven-aged. In an even-aged, managed forest there is a final harvest in which all or most of the trees are removed. Whether or not the new trees are planted, regenerate naturally, or are a combination of the two, they will all grow at approximately the same rate, and mature at about the same time. They are all harvested and the cycle starts all over again. In an uneven-aged managed forest, only the large, mature trees are harvested, leaving smaller trees to continue growing. Each system has its advantages and disadvantages, and each system is appropriate given the right circumstances. The Commission believes that substantial research, both in universities and in the field, must be undertaken to develop or refine appropriate silvicultural systems across British Columbia.

The Choice of System

If forest management is to be successful, the harvesting and silvicultural systems used must be fully integrated and ecologically sound.

The Forest Resources Commission has concluded that in most of B.C.'s commercial forests, silvicultural considerations alone will point to clearcut harvesting techniques on even-aged stands as the most ecologically sound.

Whichever harvesting and silvicultural system is used, forest management must reflect the physical condition and soils of the particular site, the ecological requirements of the forest plants that are to be grown, and the habitat requirements of a broad spectrum of animal and microbial species. These factors will determine the choice of harvesting system. If a clearcut system is chosen, it will also determine the size and dispersion of the cut. The clearcuts will be further modified by other, non-ecological factors such as aesthetic values. In addition, harvesting systems in forests that surround parks, wilderness areas, and ecological reserves should be given special site-specific attention.

The Forest Resources Commission recommends that:

- 93. timber harvesting should be conducted in an ecologically sound manner;**
- 94. the choice of forest harvesting system reflect the physical and biological capabilities of the site, the requirements of the trees that are to be grown, as well as the impact upon other forest values through time;**
- 95. if even-aged management is the silvicultural prescription, the**

site and site condition should determine the size and dispersion of clearcuts. These, in turn, should be modified by the consideration of other non-ecological factors such as aesthetic values;

- 96. the rate of harvesting must be designed to retain local and regional biodiversity throughout the rotation and reflect the management goals for all values.**

Forest Roads and the Environmental Impact of Harvesting

While much of the blame for environmental degradation in timber harvesting is placed on harvesting techniques, in fact many of the environmental problems are related to the access roads.

The major haul roads are generally well built and maintained. Unfortunately, secondary roads, spur roads, and other temporary roads have sometimes been poorly constructed, poorly located, poorly drained with inadequate culverts, poorly maintained, and poorly 'put to bed' for the period of several decades between their use for silvicultural or other management activities.

The Forest Resources Commission has concluded that in many cases, environmental damage is caused more by improper road construction and maintenance than by any particular harvesting technique. Therefore, increased emphasis should be given to long-reach cable systems or other systems that minimize the length of road required.

The choice of timber harvesting system in areas adjacent to sensitive wildlife or ecological systems should emphasize the shortest road system possible, and these roads should be reclaimed following harvesting and replanting.

The Forest Resources Commission recommends that:

- 97. increased emphasis be given to harvesting systems that minimize the number and length of forest roads;**
- 98. increased emphasis be given to other resource access management in planning forest roads;**
- 99. where access provided by logging roads endangers environmentally-sensitive areas or wildlife habitats, these roads should be reclaimed.**

9. EDUCATION

Introduction

The key to the smooth operation of the new renewable resource management system, and the corresponding enhanced stewardship promised in the Vision Statement, is education. From the comments and questions of virtually everyone who appeared before the Commission, it is clear that much more must be done in the field of education.

Public School Curriculum

The Forest Resources Commission is pleased to note that the recommendation put forward in the Interim Report was immediately accepted and is being acted upon by the Ministry of Education. Efforts to develop a thorough and balanced public school forestry curriculum have been initiated and are ongoing. The Commission wishes to emphasize that the curriculum it envisages will lead to a balanced understanding of the economic, environmental, and social importance of all renewable resource values.

Public Information

An informed public is essential to the success of public participation. Both government and industry are currently operating a variety of public information programs designed to give average people a better understanding of the forest management issues society faces. These programs include conducted tours of mills, forest operations, and demonstration forests, as well as publication of brochures, pamphlets, etc.

In view of the increase in the level of public participation in land use planning and forest management, the Commission believes that both industry and government should expand these programs wherever possible.

The Forest Resources Commission recommends that:

- 100. public information and education programs conducted by all forest user groups be expanded wherever possible.**

Certification of Forest Workers

The best system in the world is worthless without the skill and dedication of the men and women in the field who must, on a day-to-day basis, carry out the multi-faceted policies determined to be in the best public interest. Ultimately, success in achieving the goals of the Vision Statement will depend upon the skills, experience and understanding of those who work in the forests.

Thorough and intensive training must take place before workers are placed in the field. The Forest Resources Commission considered an option of proposing that all forest workers be required to undertake training in forest management and timber harvesting practices, as well as forest ecology. The program would lead to certification prior to their being allowed

to work in the forests. However, the Commission ultimately concluded that rather than impose yet another level of regulation on the forest industry, it should leave the responsibility for proper training and accreditation with the industry. Their management practices will be subject to audit, and failure to pass these performance audits could lead to loss of tenure. It will be in their own best interests to ensure that the security of their tenure is not jeopardized by improper practices or poor worker training.

The Forest Resources Commission recommends that:

- 101. government, in cooperation with industry and labor organizations, develop a voluntary training program for forest workers that will eventually lead to certification and become a standard for forestry employment.**

Technical and Professional Education

Technical and professional graduates will need a much broader range of skills and knowledge than they are currently being given. Existing professionals will need to upgrade their skills.

The development of land capability information, new resource inventories, intensive silviculture and a better understanding of the inter-relationship of the various forest values under intensive, integrated resource management will require a new diversity of resource managers and resource management skills.

The Forest Resources Commission believes that as the emphasis is broadened on forest resource education at the public education level, so too, must it be broadened at the technical and professional level. Just as forest management must become multi-disciplinary in approach, the training programs for tomorrow's forest managers must be complementary and coordinated.

The Forest Resources Commission concluded that college and technical school resource management courses will need to be expanded to meet future demands, and must be broadened to reflect integrated resource management objectives and skill requirements. A high degree of cooperation and coordination between college and university programs should be encouraged. Expansion of the availability of transferable university credit forestry course work to more colleges and to second year course work should be a goal. The Forest Resources Commission believes that the training of mediators and the development of a conflict resolution process must be initiated.

The Forest Resources Commission believes that the integrated, intensive forest management envisioned in this report will require many more professional resource managers with a broader range of skills than we currently have, particularly in the Interior. In this vein, the Commission heard a good deal of support for a Forest Resources Management Faculty at the University of Northern British Columbia. The Forest Resources Commission believes that this new faculty could develop its own forestry degree program with its own forest management specialization.

The Forest Resources Commission recommends that:

- 102. the availability of university level credit courses in forestry be extended to more regional colleges and be expanded to include both first and second year level courses;**
- 103. a Faculty of Forest Resource Management be established at the new University of Northern British Columbia;**
- 104. the training of mediators and the development of a conflict resolution process be initiated;**
- 105. the training of professional forest managers be expanded to include a broader range of skills, including more environmental training and training in public participation and conflict resolution techniques.**

Research and Development

There is much more to be learned about the complex ecosystems of the forests. As our knowledge base grows, so does our ability to manage effectively the many resources and values the forests represent. The same can be said of the potential for developing new products or processing techniques to extract the most value from the wood that is ultimately harvested. That knowledge can come only from research and development. The Forest Resources Commission believes it is imperative that the continuing development of the graduate program of the Faculty of Forestry at U.B.C. as a centre of excellence must be supported.

The Forest Resources Commission believes that opportunities for expansion and diversification in specialty product manufacturing will grow. But they will need some help. Perhaps the most pressing problem faced by the small business manufacturing sector is a lack of information related to foreign market demands. The Commission believes the development of an up-to-date data base should be a priority.

The Forest Resources Commission recommends that:

- 106. continued support be given to the development of the Faculty of Forestry at U.B.C. as a centre of excellence in forestry;**
- 107. major efforts be undertaken by governments and industry associations to expand the market and product specification information available to the developing secondary manufacturing industry in the wood products sector.**

10. PUBLIC PARTICIPATION IN FOREST PLANNING AND MANAGEMENT

Introduction

People are becoming more interested in the issues that affect them and their society, and they want the kind of direct involvement that "town meeting" democracy once offered. The increasing complexity of society and the issues it deals with makes a complete return to simpler forms of democracy impossible. The challenge, therefore, is to devise a system of public participation that fits into the more complex, representative style of government now needed to run a complex society.

Nowhere is the demand for direct involvement more evident, nor the challenge more pronounced, than in forest management issues.

The Forest Resources Commission asked Simon Fraser University's Natural Resources Management Program and the University of British Columbia's Forest Economics and Policy Analysis Research Unit to study this issue.

In general, the Commission concluded that provisions for ensuring public participation must be formally enshrined in legislation. If the process is to work effectively, the public must be convinced that more than lip service is being paid to the concept of public participation. As well, they must be able to see for themselves, through an open process, that their participation is having an impact. It must be emphasized that public participation should occur at the appropriate times in the planning and management process — early enough to have an impact on decision making. It should not occur during the operational phase, when technical decisions are being made by professionals in the field.

Public participation is essential at the planning and management levels — not at the technical, or operational level — and is concentrated, therefore, around the land use planning process, the integrated management planning process, and the follow-up audits conducted to monitor performance.

The Forest Resources Commission recommends that:

- 108. all major areas where public participation is required in the planning and management of forest land based activities be enshrined in legislation.**

Elements of an Effective Public Participation Process

From studies conducted for the Forest Resources Commission, the following are the principle components of an effective public participation program:

- a. It must have a legal mandate
- b. The process must be easy to understand
- c. Those involved must be accountable
- d. Public access must occur at key levels of the process
- e. Provision must be made to notify interested parties
- f. People must have access to information
- g. Participants must have adequate resources
- h. Written reasons for decisions are essential
- i. There must be a conflict resolution mechanism
- j. There must be an appeal process.