

NON-TIMBER FOREST RESOURCE VALUES

Prepared by:

J. Ken Youds, Land Use Planning Consultant

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NOTE: This paper is intended for discussion purposes only. The opinions expressed in this paper are those of the authors and do not reflect government policy.

Non-Timber Forest Values: An Overview of the Forest Beyond the Timber

1. Scope of this Paper

This paper is an overview of the wide range of values and interests other than timber that are dependent on the public forest lands of British Columbia and provides introductory discussion of public policy issues related to their management. Its purpose is to provide background, frame discussion topics, and stimulate dialogue about the vision of forest policy expressed in the Framework Document entitled “*The Working Forest: Directions for the Future*”. The focus is on those non-timber¹ values and interests closely associated with and reliant on planning, management, land allocation and tenure strategies for these forest lands. It is recognized that other sectoral values and interests co-exist with forest uses, such as the mineral sector and transportation corridors, however these are not incorporated in this discussion paper because their management (including land allocations and developments) can be seen as somewhat distinct from management of public forest lands. Nor, by dwelling on forest values other than timber, is this paper overlooking timber interests on these lands; that sector is the subject of companion papers in this series.

2. Background

In addition to their important role in supporting the timber or forestry sector of our economy, British Columbia’s public forest lands contain many other resources which support a diversity of biological, conservation, commercial, recreational and social values and interests. Non-timber forest resources are included in the principles of the Framework Document which strive to balance biological, social and economic sustainability, enhance performance of all commercial uses of forest resources, and maintain ecological and amenity values.

During the 20th century, British Columbia has undergone an immense transition from a region where wilderness dominated and human use and occupation had relatively light presence on the land, to a condition where human settlement and development of resources pervade the Province. Over the past four decades, the rate of forest harvesting has increased substantially and remains strongly based on a rapidly diminishing reserve of old growth. This has stimulated public concerns about the management of forest lands for the full range of values. In recent years, the management of public forest lands has been characterized by policy change rather than stability in response to several major socio-economic trends, the foremost trends being:

Changing public values and priorities: The public is more aware of and has more diverse values and priorities regarding a wider range of forest resources and values than in previous decades. There is not now a single public voice but rather many voices, some advocating for continued

¹ The expression “non-timber” is used here as a convenient term to encompass all forest values other than timber, which is the subject of companion papers in this series. Forest management is taken to refer to the management of all values of the forests, whereas this paper is intended to focus on values other than timber. The use of “non-timber” is a necessity within this assignment and is not intended to suggest that forest management should be anything but comprehensive for all values.

priority to timber development, some advocating for greater sensitivity toward or conservation of old growth forests, wilderness, biodiversity, wildlife habitats, fish habitats and endangered species, freshwater, outdoor recreation and tourism opportunities, spiritual and aesthetic values, and so on.

Growing competition for forest resources: Related to the diversification of public values and priorities, as well as to a diversification of the general economy, the public forests are no longer seen simply as storehouses of timber, but also as essential for conservation of environmental values and provision of outdoor recreation experiences and economic opportunities for tourism, botanical products, and other commercial non-timber interests. The result is an increased recognition of complexity and the limitations to meeting individual sectoral demands.

Instability and insecurity in the timber sector: The timber sector has reduced employment due to a number of factors including the globalization of trade, rationalization and mechanisation of operations in response to the need for greater competitiveness, and the diminishment of accessible and lower cost timber resources. Many communities throughout the province have, over the decades, relied on a strong and expanding timber sector. The change to an unstable and diminishing reliance on harvesting and milling logs has induced both insecurity as well as interest in economic diversification among rural communities.

Heightened First Nations' awareness: The government of British Columbia recognizes the importance of aboriginal rights and title in forest land planning, as well as the importance of resolving First Nations' land claims through negotiations. First Nations' interests challenge the conventional, mainstream idea that the public forest lands of this province are, for management purposes, solely the property of the public and managed on their behalf by the government.

In the context of these major socio-economic trends, there have been a number of significant public policy responses to forest management in recent years, including:

- the Old Growth Strategy
- the Protected Areas Strategy, with expansion to 12% of the provincial land area
- the Commission on Resources and Environment, with emphasis on strategic land use planning.
- the Forest Practices Code
- the Timber Supply Review
- the Softwood Lumber Agreement
- the Forest Resources Commission
- the Jobs and Timber Accord
- the First Nations' treaty processes
- *Fish Protection Act*

3. Defining Forest (Non-Timber) Resources, Values and Interests

Natural resources are the raw materials provided by the natural environment that support environmental, social or economic needs, values and uses. The public forest lands of British Columbia are those Crown land areas administered by the Ministry of Forests, currently encompassing about 80% of the Province. These forest lands include fourteen ecosystem types. About half of this land area is classified as productive for timber, although not all productive sites are necessarily economically operable and a substantial percentage (over half) of productive forest lands are classified as "poor" or "low" productivity. The distinction between timber and other forest

resources stems from the historical and spatial dominance of the former in forest management policy and plans.

Forest resources include all the natural elements or constituents of the forest environment that provide for the range of environmental values, social values and interests, and commercial interests. Beyond timber values, many of these other values require retention of forest cover. These non-timber values have been examined in prior work and Appendix 1 provides a summarized list and description of thirteen value types developed in the Old Growth Strategy¹: (1) biodiversity, (2) community recreation, (3) gathering, (4) geoclimatic, (5) grazing, (6) heritage, (7) hunting, trapping and fishing, (8) option/bequest/existence, (9) science and education, (10) spiritual and aesthetic, (11) tourism, (12) water, and (13) wilderness. Clearly forest (non-timber) resource interests and values comprise a heterogeneous grouping that includes consumptive and non-consumptive activities, a range of environmental and socio-economic values, and both commercial and non-commercial interests.

While many forest resource values and uses have long co-existed with timber interests, demands to preserve, develop, allocate or commit the finite forest lands have increased and intensified enormously in recent years. This has precipitated much greater levels and complexity of planning, coordinated management and cross-sectoral consultation.

4. Sectors of Non-Timber Forest Values and Interests

Of the many forest values and interests other than timber, there are important distinctions between those that reflect commercial interests versus non-commercial interests, those that reflect First Nations' interests and those that reflect environmental-social priorities and values. Further distinction can be made in terms of the applicable management or regulatory authority or vehicles. With these distinctions in mind, the following seven enviro-socio-economic categories or sectors are offered as comprising a simple framework for outlining the diverse interests and issues pertaining to forest (non-timber) values. Conceivably, in a planning process, each such sector could be represented by one individual speaking for the industry, public interest, environmental or social values crucial to that sector. These sectors are not only co-beneficiaries of public forest management but they are also competitors for access to or commitments regarding forest land allocations or management practices.

Aboriginal Traditions and Use Rights

Description: Includes the range of traditional harvests and uses, including botanical products and medicines, fish, wildlife, spiritual and community values. Not necessarily subject to provincial governance in association with other interests.

Some Geographic/Economic Factors:

- ◇ Province-wide interests in association with traditional use patterns.
- ◇ May often be overlapping interests among First Nations in any given area.
- ◇ Potential economic development opportunities for First Nations.

¹ BC Ministry of Forests. 1991. Towards an Old-Growth Strategy. Appendix 1: Old Growth Values Team Report.

Key Resource Management Issues:

- ◇ Current policy requires consultation with First Nations but their inventory information regarding traditional uses and products is not always available to forest use planning processes.
- ◇ Many First Nations do not feel that they are adequately consulted or that their rights and interests are adequately considered in forest development planning.
- ◇ First Nations often express desire to complete the resolution of land claims as priorities over land use planning processes.

Biodiversity/Environmental Conservation

Description: Includes the range of conservation values and priorities established by statute and regulation or by public advocacy, including biodiversity, fish and fish habitats (including non-commercial and non-recreational species), water quality and watersheds, wildlife habitats, endangered species, old growth and wilderness values.

Some Geographic Factors:

- ◇ Areas of earliest/most accessible forest development impact are often also areas of significance for habitat restoration, particularly with regard to endanger species.
- ◇ Areas least accessible from development centres are most likely to retain large intact ecosystems and have significance for wilderness, old growth, and associated biodiversity conservation.
- ◇ Undisturbed lower elevation ecosystems are the more scarce resource, hence more highly valued by various sectors.
- ◇ Strong public interest for greater retention of old growth, wilderness and related forest values.

Key Resource Management Issues:

- ◇ Historical development and access patterns (including roads and coastline) have resulted in radically altered ecosystems (particularly in settlement, agriculture and coastal areas), substantially reduced wildlife habitats for some species, improved habitat for some wildlife species, and placed a number of species at risk.
- ◇ Management trend has been toward increasingly conservative approach to accepting any further cumulative impacts to wildlife habitats, particularly those where wildlife species appear to be at risk.
- ◇ Forest Practices Code has introduced new guidelines designed to protect habitats, such as the Landscape Unit Planning Guidelines, Biodiversity Guidelines and Riparian Guidelines. Some environmental conservation advocates and government staff are concerned that these guidelines are less effective than originally intended, particularly because their implementation is limited by a threshold of impact to timber harvesting.
- ◇ British Columbia is a signatory to the “National Accord for the Protection of Species at Risk”; now developing the “Identified Wildlife Management Strategy” and the “Grizzly Bear Management Strategy” and inter-ministry memorandum-of-understanding for Ungulate Winter Range Protection.
- ◇ Forests are considered extremely important for maintaining fish habitats necessary for conservation of wild fish populations, which has both commercial and biodiversity conservation significance. There is some concern that forest development planning does not adequately address the conservation of fish and fish habitat.
- ◇ Protection of watersheds is extremely important throughout the Province; Forest Practices Code recognizes the maintenance of all watersheds and specifically community watersheds.
- ◇ In addition to protected areas, there remains on-going advocacy for protection of additional wilderness areas. Some of these are focused on alpine areas, but there is greater public

interest in retention of wilderness forest areas, particularly where there are substantial old growth stands.

Commercial Botanical Products

Description: Includes the wide range of commercial interests and potentials in non-timber botanical products harvested from the forest, particularly edible mushrooms; green foliage products; wild berries and fruits; medicinal, pharmaceutical and “nutriceutical” products, biocides and anti-phytovirals, craft ingredients, landscaping and miscellaneous other plants and plant products. Presently there are more than 200 identified botanical forest products in British Columbia that are harvested for commercial purposes.

Some Geographic/Economic Factors:

- ◇ Province-wide generally, with certain crops (eg. pine mushrooms) focused in certain forest ecosystems. Strong growth trend, particularly as seasonal supplementary income generation in rural economies and innovative bio-technology firms focused on natural product sources.
- ◇ Economic data is yet sparse for this sector: variable information depending on product categories. For example, harvest of edible wild mushrooms may currently generate \$25-\$45 million in gross revenues. It should be noted that the international market for medicinal and pharmaceutical products is considered to be US \$14 billion currently and the international markets for biocides and phytovirals may exceed US \$20 billion currently.
- ◇ British Columbia’s forest lands are considered to be a significant, undeveloped resource in the world for the growing natural medicinal, pharmaceutical and “nutriceutical” products.

Key Resource Management Issues:

- ◇ Data base on site/area productivities, harvest levels or crop sustainability/management requirements may often be weak.
- ◇ Potential overlap with aboriginal harvest rights and with recreational harvesting of similar products.
- ◇ Potential need for management through area tenures, licenses, permits or other arrangements; effective regulation to ensure sustainability and prevent excessive impact should precede tenures.
- ◇ Need to consider resource revenue/rent issue.
- ◇ Need to consider compatibility with traditional forest management practices.

Commercial Salmon Fishery

Description: Includes the commercial interests in salmonid fisheries and the associated interest in protecting and managing for upstream fish habitats associated with forests. *Note: the recreational fishery is encompassed under the tourism sector as well as the public recreation sector and the issue of non-commercial and non-recreational fish species is encompassed within the biodiversity/environmental conservation sector.*

Some Geographic/Economic Factors:

- ◇ Of greatest sensitivity to disturbance are coastal and near-coastal areas, due to the numbers of streams and rivers with salmon, combined with the steepness of terrain, high rainfall and erodable soils.
- ◇ Major inland river systems, such as the Fraser and the Skeena and their tributaries are major producers of salmon and, as such, this interest extends throughout most of those watersheds as well.
- ◇ Commercial fishing industry’s industry’s annual contribution to provincial economy is estimated at \$200-300 million.

Key Resource Management Issues:

- ◇ Wild fishery has been in decline in recent years for a variety of reasons, including but not limited to habitat loss with anadromous salmon populations, which has increased the profile of habitat conservation efforts and resulted in major conflicts with the timber sector.
- ◇ Riparian Guidelines of the Forest Practices Code are intended to provide sufficient protection to streams from timber harvesting activities. There is on-going debate regarding the effectiveness/adequacy of these guidelines.

Grazing Range and Forage Crops

Description: Encompasses the ranching industry's reliance on forest land range for seasonal range for livestock and for some crops. Managed by licenses through range use plans (Forest Practices Code) and permits under the *Range Act*.

Some Geographic/Economic Factors:

- ◇ Almost all commercial ranches require Crown land grazing.
- ◇ Roughly 80% of forage is from forested lands, as opposed to grasslands, etc.
- ◇ Eleven of the province's 14 major ecosystems (biogeoclimatic zones) are used for grazing of over 200,000 cow-calf pairs as well as numbers of horses and other livestock.
- ◇ Ranching industry is smaller than other industries by provincial standards but is extremely significant both culturally and economically to rural lifestyles in many regions of the central and southern interior of the Province.

Key Resource Management Issues:

- ◇ Increasingly pressured by the spread of settlement, the spread of noxious weeds by industrial activities, recreationists and others using public lands, the increased intensity of silvicultural management in some areas, and by new regulations under the Forest Practices Code.
- ◇ Control/management of cattle is difficult in an intensified forest management environment where complex use patterns exist or where natural barriers to cattle movement may be removed.
- ◇ Sector has concerns about the viability and renewability of the forest grazing and forage uses it depends on; concern that their interests may be jeopardized by conservation interests (eg. wildlife habitat, community watersheds), other tenure interests over the same lands and by First Nations land claims.
- ◇ Impacts on wildlife species (including large carnivores) and rare species inhabiting grazed ecosystems needs to be addressed.

Public Outdoor Recreation and Appreciation

Description: Includes public interests in aesthetic, spiritual and option values as well as outdoor recreation values such as hiking, fishing, viewing and hunting. Prominent forest uses are demands for access to roaded wildland areas, unroaded wilderness areas, retention of visual values, hiking trails, and public camping facilities in forest lands, as well as retention for future benefits/options. Includes those who intrinsically enjoy the existence of these values as well as those who directly access the forests, either on a transient basis or due to proximity of cottages or residences on adjacent private or leased lands.

Some Geographic/Economic Factors:

- ◇ Province-wide patterns of recreational use in all forest land ecosystems.
- ◇ About 60% of public recreation use on Crown land (including parks) occurs onforested lands.
- ◇ Throughout the province, the Ministry of Forests maintains a network of 600 trails, 90 interpretive forest sites, and 1,400 rustic campgrounds, often associated with lakes and streams. Charges for camping have recently been introduced as part of a review of recreation management policies.

- ◇ The annual economic value of outdoor recreation use on Crown land is estimated to be \$1.5 billion (presumed to include \$500 million freshwater recreational fishing and resident hunting).
- ◇ The annual economic value of saltwater recreational salmon fishing is \$500 million.

Key Resource Management Issues:

- ◇ Strong tradition of free and unrestricted public access to forest lands for recreation. Forest and other development roads create an expectation of continued access, leading to increased conflict/competition with other forest values (eg. wildlife conservation).
- ◇ Camping and other facilities provided in provincial forests are not thought to generate demand but rather to accommodate demand in a manner that reduces environmental risks/impacts (wildlife habitat, sensitive ecosystems, erosion, fire, pollution, etc.), protects public health and safety, provides opportunities for the public to appreciate forest management, and provides returns tangible, low cost benefit to the public.
- ◇ Public may be concerned about potential impacts on access and visual quality that could result from changes to forest tenures or from intensive forestry zones.
- ◇ De-commissioning of forest access roads has reduced vehicular recreation access to many areas while improving opportunities for backcountry recreation in those areas.

Tourism and Commercial Outdoor Recreation

Description: Encompasses the economic sector that caters to and depends upon leisure travel and recreation on forest land. Involves a wide range and scale of investment/infrastructure and includes both resident and non-resident (export value) use of this service industry.

Some Geographic/Economic Factors:

- ◇ Tourism sector of the provincial economy includes over 16,000 small to medium-sized businesses (includes urban and non-urban oriented enterprises) and is said to generate \$9 billion in economic activity, contributing \$3.5 billion of export capital to the provincial economy annually. Includes a wide range of scales of enterprise and levels of impact on other activities and values, from small owner-operated tour businesses to large scale ski developments.
- ◇ The most significant tourism generators are specific capital-intensive, facility-oriented destinations. The majority of the forest lands of the province attract relatively dispersed visitation appropriate to their natural environment character.
- ◇ In recent years, tourism and associated recreational enterprises have vastly diversified in scale, scope and geographic distribution throughout the Province and all forest landscapes.
- ◇ Extremely important to many local, rural economies, as well as to the overall Provincial economy.
- ◇ Considered to be a “green” industry with strong growth over the past decade in response to marketing of “Super Natural British Columbia”; in terms of employment growth this has been the one of the strongest sectors of the economy for several years.
- ◇ Eco-tourism involves over 13,000 jobs and estimated derived provincial income of roughly \$500 million.

Key Resource Management Issues:

- ◇ There is an enormous variety and number of forest dependent tourism enterprises. Examples of enterprises using forest lands include (but not limited to) big game and angling guiding, wilderness eco-tours, heli-skiing lodges and operations, fly-in fish camps. Dependence upon forest scenery and ecosystem integrity varies tremendously with enterprise type.
- ◇ Land tenures for tourism enterprises, where there is a substantial infrastructure investment, tend to be more geographically limited than the area that clients may be interested in. Other

than guide-outfitter territories, there is a current lack of tenures or resource rent mechanisms designed to support these more extensive land interests.

- ◇ Eco-tourism operations tend to be most sensitive to forest/timber development. Sensitivity of clients to timber harvesting and other industrial activities is a major factor; many clients expect undisturbed landscapes.
- ◇ There are concerns that the unregulated spread of eco-tourism can have negative impacts on other forest values, such as wildlife.
- ◇ New capital-intensive facilities and operations tend to be excluded from protected areas, which are used extensively by eco-tours and other low impact tourism activities. Therefore public forests are extremely important the portion of this sector that requires capital-intensive facilities.
- ◇ Sector is very concerned about tenure security and effects of adjacent forest and non-forest (mineral) activities. Sector seeks stronger role in all levels of planning and resource management decision-making.
- ◇ Concerns for the level of unilateral authority/discretion of MoF District Managers in making forest land decisions that affect their sector.
- ◇ Concerns for the resolution of treaties with First Nations' that are sensitive to the needs and interests of this sector.

5. Synopsis: Resource Management Policy and Planning Today

Mosaic of Interests

Today, in all areas of the Province, tenures, interests, social values and other use arrangements and expectations overlap and compete in a complex mosaic on public forest lands. There remains no uncommitted or unvalued portion, although conflict with timber values is less in those ecosystems (particularly the alpine tundra) where timber interests are minimal or non-existent. With multiple and often competing commitments and interests the norm in most forested areas, the overarching challenge is to ensure prudent, balanced planning and management to enable environmental and ecosystem sustainability, diverse and strong rural economies, and an optimal flow of public benefits (including environmental-social values, recreation opportunities and resource revenues).

Integrated Resources Management

In concept, integrated resources management (IRM) attempts to accommodate the full range of forest values and interests into land use planning and management. From earlier notions of "sustained yield forestry" (1940's to 1970) and "multiple use forestry" (1970 to mid 1980's), the concept of IRM as a negotiation involving the many resource values grew out of the BC Coastal Fisheries Forestry Guidelines developed in the 1980's. Still, IRM is very much a forest management concept that is fundamentally driven by the multi-stakeholder planning necessary to enable the timber sector.

IRM has the ability to assign different resource priorities in different areas. Some values such as fish and wildlife may be specified by statute and some simply identified through the advocacy of governmental, First Nations, non-governmental bodies, or non-timber commercial interests (such as tourism, botanical forest products, etc.) are always important considerations, although inventory data may be weak for some values. Ultimately, with input from various agencies and interests and through consultation processes, district managers of the Ministry of Forests, and in certain instances a "designated environment official" (DEO), are responsible for making decisions regarding the management of Crown land and forest resources. Substantial efforts are made to identify and accommodate the range of non-timber interests, always a daunting challenge. In principle, IRM is a planning method that attempts to optimize the many forest values and to establish priorities based

on resource data and negotiation. In practice, based on available information, plans and decisions must usually reflect judicious compromise.

Priority Use Zoning

Mounting competition for use or conservation commitment of the finite forest land base was the inspiration for the Commission on Resources and Environment (CORE) in the early 1990's. One of the key ambitions of CORE was to develop regional land use plans that identified and accommodated the spectrum of resource values and interests through priority use zoning. In three regions of the province, CORE initiated complex, multi-sectoral planning processes and, using a negotiation-to-consensus model, developed large scale land use plans that featured new protected areas and three types of land use zones designed to accommodate IRM: low intensity areas or special management zones (LIAs or SMZs), general forestry areas or integrated management zones (GFAs or IMZs) and high intensity areas or enhanced management zones (HIAs or EMZs). The idea was that each of these types of zones should reflect a different emphasis on environmental conservation versus forest (timber) development. In the end however the CORE process had great difficulty achieving consensus, and the emphasis for multi-stakeholder land use planning was shifted to sub-regional units and the Land Resource Management Plan (LRMP) model.

Apart from the difficulties inherent in obtaining multi-sectoral agreement on the delineation of zones, some systemic problems emerged:

- 1) The LIAs/SMZs tended to be identified over areas which were either undeveloped or only partially developed, and hence were highly valued for their conservation values. However these same areas included timber volumes which had already been included in timber supply planning.
- 2) The HIAs/EMZs, widely perceived as zones of emphasis for timber utilization, tended to be identified over areas of productive forest land that, being in closer proximity to mills and settlements, had previously been partially to extensively logged and therefore lacked significant merchantable timber, at least in the short term. In some cases, these zones encompassed some priority lower elevation areas for protection of residual environmental values or rehabilitation of compromised values.
- 3) Regardless of zonation emphasis, each specific zone contains a range of forest values and qualities, such that exceptions to the general development emphasis were commonplace.
- 4) The relationship between zoning priority emphases, and the Forest Practices Code, still under formulation at the time of CORE, was unclear.
- 5) Since district managers (MoF) are not legally required to implement SMZ zoning guidelines until a "higher level plan" has been designated, there has tended to be a lack of follow-through with regard to the conservation emphasis of SMZs, causing much concern among conservation-oriented interests.

Beyond CORE: Zoning Refinements

In post CORE work, regional and sub-regional initiatives have continued to refine the application of zoning:

- a) On Vancouver Island, for example, an inter-agency technical team working with the Vancouver Island Regional Land Use Plan has refined the CORE zoning through a more detailed analysis of the distribution of identified (i.e. known) values. By examining the layers of regional scale resource data, overlain with the watersheds of the region, this team refined the zones delineated of the region. Starting with an analysis of the smaller watershed-based sub-units of the region, the technical team categorized the significance of each forest resource or value. Adjacent clusters of these watershed-based units were then identified as being one of the three types of zones, based on the general arrays of relative resource values. This work

was not intended to replace more detailed, lower level planning but rather to give broad directions and improve the ability to forecast resource management needs at the regional scale. The other major purpose of this work was to complete the delineation of the other two types of zones, GMZs and EMZs, in this region. As part of this initiative, an examination of the Forest Practices Code determined that it offered some flexibility in the “green-up” and “adjacency” provisions to enable enhanced timber productivity in suitable zones. This work remains uncompleted.

- b) In sub-regional areas of the province multi-stakeholder planning processes known as Land Resource Management Plans (LMRPs) have been developed as refinements of the CORE process. Like the CORE processes and as an outgrowth of IRM, these LMRPs are essentially negotiations involving the widest possible mix of interests. While complex and time consuming, as a result of their scale and thoroughness, LMRPs have been reasonably successful at resolving conflicts and/or defining objectives at planning scales that can be operationalized to develop effective, multi-sectoral plans. Using an analysis of resource values more detailed than for regional scale plans, the concept of zoning has also been applied in LMRPs. While each zone tends to possess a unique mixture of resources and values, the range of these interests in most zones has been a substantial challenge to the practical application of the concept of priority uses. There remains however much concern, particularly among the conservation community, regarding the discretionary nature of zone management prescriptions.

Complexity of Tenures

Resource management and planning are challenged by the complex mix of tenures and other legal interests on the land. While most timber tenures tend to be large in geographic scale and long term in duration, land based tenures, licenses or permits for other forest values vary widely. Variable factors include duration, renewability, exclusivity, overlaying with other tenures, and territorial extent. The numbers of tenures and other legal interests can be substantial in any planning area. Illustrative of the magnitude of the management challenge, BC Assets and Land (BCAL) Corp. is presently responsible for managing some 30,000 crown land tenures (both non-timber and non-forest uses) and there are an average of 3,000 new applications each year. Understandably there are many instances of overlaying of Crown land interests and tenures with those authorizing timber harvesting or other resource uses. For example, guide-outfitters have exclusive rights under the *Wildlife Act* over a large territory to guide non-resident hunters, however unguided residents have access to these same areas and packers may help convey hunters into and through the same area. A backcountry lodge-based tourism enterprise authorized under the *Land Act* might have a tenure over a specific site, however the interests of its clients in an attractive, non-industrialized landscape may extend much further geographically than this core of operations. Eco-tours, a rapidly expanding and popular form of tourism enterprise, lead their land or marine-based parties through extensive, non-exclusive territories with only site-specific permits to develop campsites at specific locations. To date, commercial harvesting of botanical forest products is unregulated and unmanaged; no tenure arrangements have been developed. Meanwhile such forest values as biodiversity, public recreation, wildlife habitats and so on rely strongly on the IRM process to identify and maintain these values on public forest lands as there are currently no tenure mechanisms that make long term commitments for these values, other than dedication as protected areas, which removes them from the forest land base.

Assessment of the Current Process

In this complex arena of planning and land use commitments and interests, the resource management agencies of government, resource use stakeholders, First Nations, and non-governmental advocacy bodies have been working ambitiously, sometimes harmoniously,

sometimes in embittered competition to build acceptable, durable land use plans. Perhaps for want of a superior model, multi-stakeholder planning processes, emphasizing cross-sectoral dialogue and interest-based negotiation, are the norm. These processes attempt to reconcile diverse and competing interests in order to reach consensus on a land use plan, often requiring years to successfully complete.

Most participants recognize that the present resource planning situation is far from perfect and provides less than ideal certainty for any of the participants. The process demands substantial commitment of time and, ultimately, willing compromise. Not all interests believe that IRM is effective today in meeting the demands of the many sectors. Indeed many representatives of sectors other than timber express concern for the ability of the existing planning processes to conserve the full range of forest values effectively. Advocates of conservation values assert that IRM policy initiatives are either poorly implemented or ineffective with regard to, for example, riparian, identified wildlife and biodiversity provisions of the Forest Practices Code and implementation of Special Management Zones and other strategies and objectives for non-timber forest values detailed by CORE and LRMP's. Some advocate for re-directing the IRM planning model from an emphasis on negotiation among resource interests toward a firmer foundation in ecosystem-based management.

One of the concerns raised is that since IRM largely occurs by negotiation within multi-stakeholder land use planning, the adequate protection of forest values and interests other than timber requires effective participation by those interests, both government and non-government. This is not always possible due to the operational limitations of many organizations and the limited information available for such values. At the same time, environmental conservation advocates express concern that the management zonation developed from CORE and LRMPs, where there is an emphasis on the timber sector (eg. enhanced resource development zones and high intensity areas for the timber sector), could also seriously compromise planning sensitivity to environmental values. To some it is a matter of obtaining sufficient resource information; to others it is a question of weighing competing social priorities.

Segregation of Values Versus Multiple Values Management

Virtually every hectare of land in every forest landscape of the Province contains a variety and range of forest resources and values bound together with the timber resource. Consequently it is well understood among resource management agencies of the Provincial Government that the public forest lands, in general, need to be managed to reflect the multiple objectives of our society. Within this multiple objectives framework, while some spatial compatibilities can exist between some interests and values, all uses tend to affect all other uses to lesser or greater degrees, often depending on the scale of operations or dominating commitments.

In land use planning there are always two opposing schools of thought: one that favours greater segmentation or segregation of values in the landscape, such that each specific unit of land need only be managed for a limited set of compatible values (such as protected areas or intensive forestry zones), and one that favours the management of all values over extensive areas. Whereas the former requires both the assumption that it is possible to segregate values and that sufficient information exists to achieve this end to a level that satisfies all sectors, the latter accepts that forest landscapes contain a complex web of values that cannot be separated and that management needs to be dynamic in order to respond to changing societal priorities. However the latter approach tends not to offer firm or permanent commitments to the various sectors of interest and this makes their internal stability difficult to predict. Neither approach should be seen as a universal solution.

6. Policy Challenges for Non-Timber Resources Management

As complex, multi-faceted and significant as the array of forest resource values and interests are, their management, apart from the timber sector, is yet exploratory. Changing social values and increasing resources competition have comparatively recently compelled that these values and interests be taken into account. Significant challenges are presented to forest land management to satisfactorily accommodate these either by enhanced attention to multiple-value management over large forest landscapes or by increased segmentation of the forests into areas designated for specific uses, such as protected areas and intensive forestry zones.

6.1 Strategic Land Allocations

Ecosystem Conservation: While the commitment to place 12% of the province within protected area status has technically been achieved, there is concern that lower elevation forest ecosystems are significantly under-represented in the protected area system, contain important elements of biodiversity and are threatened with further development. These are the ecosystems which tend to have the greatest historical levels of settlement and development, including timber development. **How can greater levels of representation, habitat protection and biodiversity conservation be achieved for low elevation forest ecosystems?**

Zonal Priorities: The concept of zoning implies priority values or uses – whether these may be, for example, timber, recreation or biodiversity conservation -- yet other, perhaps contrary, values will almost always exist. **Can priority use zoning, while fostering certain primary values, also recognize and be sensitive to other values, perhaps through management guidelines or through more site-specific “key-hole” sub-zoning?**

Zoning Scales: The scale of the zones adopted in some strategic land use plans encompass extensive lands within each single zone, while, on the ground, there may often be much greater heterogeneity of timber and non-timber values. **What is the most appropriate scale at which to apply zones to most effectively recognize and protect the occurrence and distribution of all forest resource values?**

6.2 Land Tenures and Governance

Complexity: There is a complex myriad of tenures and administrative responsibilities throughout public forest lands and this web presents formidable challenges to planning and management. For the array of resource values, it is an uneven playing field while the nexus of many important decisions is not pluralistic, but instead focussed on the district managers of the Ministry of Forests (and sometimes designated officials of the Ministry of Environment, Lands and Parks). **Is this the most effective model for balancing resource interests, particularly in consideration of those forest values not represented by tenured economic interests (eg. environmental and public recreation), as well as recognizing the wider geographic interests of the tourism/commercial recreation sector? How can appropriate balances be best achieved when each sector is valued in different ways and with uneven relationships to land tenures and resource revenues?**

Environmental Values: There is much concern expressed regarding the sustainability of biodiversity, wildlife habitat, endangered species, fish habitat and other environmental values in the context of the fostering of economic sectors of forest use, particularly through more layers of commercial tenures, more sector-focused (intensive) tenures, or comprehensive management tenures. **Can national commitments (eg. National Accord for the Protection of Species at Risk), Forest Practices Code commitments (eg. biodiversity, riparian, etc.) and other arrangements (eg. Grizzly Bear Strategy) be satisfied in the context of proposals for intensive forestry zones? Will there be an**

acceptance of the trade-off of the loss of conservation values within such zones for improved conservation value retention (or reduced risk) outside these intensive zones?

Botanical Forest Products: This commercial sector, with considerable growth potential, is unregulated and unmanaged at present. Is there a tenure mechanism that can support this industry (in terms of appropriate resource management), provide a resource-rent “return” to the public and ensure that other forest values and interests, particularly conservation values and non-commercial recreation, are sustained?

Tourism:

There continues to be considerable growth potential for this sector, with most use focussed on capital-intensive facilities and specific destinations, yet there is an accompanying advocacy for protection of extensive scenic, recreation and environmental values. Is there an economic case for large scale land use management that fosters this sector in extensive forest lands? What tenure mechanisms might be considered and how might resource-rent be returned to the public?

Alternative Models: Alternative approaches to tenures, administration and governance tend toward creating more comprehensive responsibility and more localized management, either through a single commercial entity, a community or other such bodies having responsibility to manage, sustain and foster all forest values within a defined area. In such instances, a unit of land (such as a watershed) could be managed by a single entity, in accordance with an accepted plan that takes account of all forest values and interests. How can alternative models, such as community forests and First Nation’s co-management of defined areas, be fostered and refined to ensure that all forest values are optimally sustained and existing tenures are respected? How does this approach accord with the tradition of free public access to forest lands?

6.3 Consultation and Planning Processes

In recent years, through a variety of processes, the public forests of British Columbia have been the subject of considerable consultation efforts, probably more extensive and inclusive than in most other comparable jurisdictions. Still, there remains much criticism of the integrated resource management model, essentially a planning process that emphasizes negotiation between the many sectors of interest. Among conservation value advocates, for instance, there is consternation that present processes often do not result in sufficient commitment or effective implementation of conservation measures. Commercial sectors, such as tourism and ranching, express concern that their interests seem too often marginalized or even ignored in forest (timber) development planning. Can multi-sectoral consultation processes be designed and executed in ways that better satisfy the range of participants that their values and interests are respected in the outcomes?

6.4 Inventory, Research and Monitoring

An important issue in planning processes and in subsequent management is the development of sufficient resource information for the range of values. Related to this, once a plan has been adopted and implemented, it is essential that there be appropriate monitoring to ensure that management strategies and their field execution are consistent with the plan, particularly with regard to the sustainability of sub-dominant resource values. How can conservation values, such as biodiversity and wildlife habitat, as well as emerging “green economy” commercial values, such as tourism and botanical products, be most effectively represented in resource inventories, assigned appropriate priorities in planning processes, and monitored for resilience or sustainability, particularly in the context of intensive timber development plans? Can specialized intensive forestry zones be designed, based on adequate multi-resource inventories, such that forest values sensitive to intensive development are excluded or safeguarded?

7. Questions for Discussion

1. Should forest resource management be based on optimal achievement of a mix of biological, social and economic objectives, or should there be an over-riding paradigm such as ecosystem sustainability or community stability?
2. What role should non-timber resources play in meeting the vision expressed in the Framework Paper to achieve economic potentials to meet community and employment goals?
3. How effective are current land and resource planning processes and what changes would be necessary to increase community and stake-holder satisfaction with outcomes?
4. What are the implications for non-timber resource management and administration of the proposal for greater differentiation of resource priorities among zones?
5. Should there be less restrictive forest practices standards in intensive timber production zones, and more restrictive standards in conservation zones? If so, which standards should be varied and how much differentiation is appropriate?

6. How will tenures for non-timber resources, and public access to non-tenured uses of these resources, be impacted by issuance of more secure or otherwise more valuable timber tenure rights? What changes would be necessary to ensure access to non-timber resources in order to achieve greatest benefits across all sectors of forest use?

APPENDIX 1

Representative Listing of Non-timber Forest Resource Values and Interests²

<i>Biodiversity values</i>	The diversity of genes, species, ecosystems and ecological processes.
<i>Community recreation values</i>	Includes the wide range of non-extractive recreation opportunities available to the public, such as walking, picnicking, viewing, and appreciation of outdoor environments.
<i>Gathering values</i>	Pertains to the collection of botanical forest products whether for commercial, recreational, spiritual or cultural purposes. Includes floral display and craft items, fruits and berries, edible mushrooms, medicinal, pharmaceutical and nutraceutical products, etc.
<i>Geoclimatic values</i>	Large scale environmental values that derive from the management of soil, water quality and flow, forest cover and so on.
<i>Grazing and range values</i>	The use of forests for summer and fall grazing of cattle, sheep and horses, as well as the raising of harvested hay crops.
<i>Heritage values</i>	The socio-cultural significance of forests and forest landscapes representative of conditions present in pre-development eras.
<i>Hunting, trapping and fishing values</i>	The use and need for forests to sustain hunting, trapping and fishing activities, including commercial, recreational and subsistence types of use.
<i>Option/bequest/existence values</i>	Encompasses public interest in maintaining or preserving options or opportunities, both economic and environmental, for the future as well as the value obtained from knowing that forests exist.
<i>Science and education values</i>	Include pure science values (i.e. to acquire knowledge for its own sake) and applied science (eg. Improving management practices or developing new botanical products).
<i>Spiritual and aesthetic values</i>	Include the full range (visual, tactile, auditory,

² BC Ministry of Forests. 1991. Towards an Old-Growth Strategy.

olfactory) aesthetic experiences available from forests.

Tourism values

Includes opportunities of a wide variety for commercial enterprises based on recreation in forests. Variety ranges from capital intensive infrastructure, game guiding, eco-tours, and so on.

Water values

Pertain to the value of forest conservation for protecting water quality, quantity, flow rates, etc. in regard to maintaining fish habitat, domestic water supplies, and avoiding downstream erosion.

Wilderness values

These derive from the retention of large, contiguous areas of roadless, undeveloped forest land, where natural forces dominate.